RF TEST REPORT

Applicant	Shanghai Smawave Technology Co. ,Ltd
FCC ID	2AU8HMGL6201A
Product	LTE Module
Brand	Smawave
Model	MGL6201A
Report No.	R2001A0002-R1V1
Issue Date	February 20, 2020

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2019)/ FCC CFR 47 Part 22H (2019)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Peng Tao	Kai Xu
Performed by: Peng Tao	*Approved by: Kai Xu*

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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	Radiates Spurious Emission	2.1053 / 22.917 (a)	PASS
Date of Testing: October 1, 2019~ November 7, 2019 and December 31, 2019			

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. 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	Shanghai Smawave Technology Co. ,Ltd
Applicant address	3/F, Building 8, 1001 North Qinzhou Road， Xuhui District, Shanghai, China
Manufacturer	Shanghai Smawave Technology Co. ,Ltd
Manufacturer address	3/F, Building 8, 1001 North Qinzhou Road， Xuhui District, Shanghai, China

2.2. General Information

EUT Description			
Model	MGL6201A		
IMEI	860524031979550		
Hardware Version	V2.0		
Software Version	CAT12-A		
Power Supply	External Power Supply		
Antenna Type	External Antenna		
Antenna Gain	2.78dBi		
Test Mode(s)	LTE Band 5/26;		
Test Modulation	(LTE)QPSK, 16QAM, 64QAM;		
LTE Category	12		
Maximum E.R.P.	LTE Band 5:	22.43dBm	
	LTE Band 26:	23.66dBm	
Rated Power Supply Voltage	3.3V		
Extreme Voltage	Minimum: 3V Maximum: 3.6V		
Extreme Temperature	Lowest: -40°C Highest: +70°C		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	LTE Band 5	824 ~ 849	869 ~ 894
	LTE Band 26	824 ~ 849	869 ~ 894
Note: The information of the EUT is declared by the manufacturer.			

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 (2019)

ANSI C63.26 (2015)

Reference standard:

FCC CFR47 Part 2 (2019)

KDB 971168 D01 Power Meas License Digital Systems v03r01

4. Test Configuration

The main board of the product (product name: SGL4010) is the same as the module(module name:MGL6201A), including the PCB layout and the BOM list , without any change.
The conducted test results will reference to SGL4010 (report No.: R1909A0578-R1).

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) and the worst case was recorded.

All mode and data rates and positions were investigated. Subsequently, only the worst case emissions are reported.
The following testing in LTE is set based on the maximum RF Output Power.
Test modes are chosen as the worst case configuration below for LTE Band 5/26

Test items	Modes	Bandwidth (MHz)					Modulation			RB			Test Channel		
		1.4	3	5	10	15	QPSK	16QAM	64QAM	1	50%	100%	L	M	H
RF power output and Effective Isotropic Radiated power	LTE 5	O	O	O	O	-	O	O	O	O	O	O	O	O	O
	LTE 26	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Occupied Bandwidth	LTE 5	O	O	O	O	-	O	O	O	-	-	O	O	O	O
	LTE 26	O	O	O	O	O	O	O	O	-	-	O	O	O	O
Band Edge Compliance	LTE 5	O	O	O	O	-	O	O	O	O	-	O	O	-	O
	LTE 26	O	O	O	O	O	O	O	O	O	-	O	O	-	O
Peak-to-Average Power Ratio	LTE 5	O	O	O	O	-	O	O	O	-	-	O	O	O	O
	LTE 26	O	O	O	O	O	O	O	O	-	-	O	O	O	O
Frequency Stability	LTE 5	O	O	O	O	-	O	O	O	-	-	O	-	O	-
	LTE 26	O	O	O	O	O	O	O	O	-	-	O	-	O	-
Spurious Emissions at Antenna Terminals	LTE 5	O	O	O	O	-	O	-	-	O	-	-	O	O	O
	LTE 26	O	O	O	O	O	O	-	-	O	-	-	O	O	O
Radiates Spurious Emission	LTE 5	O	-	O	O	-	O	-	-	O	-	-	-	O	-
	LTE 26	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 Results

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 is controlled by the Base Station Simulator to ensure max power transmission and proper modulation.

The testing follows FCC KDB 971168 v03r01 Section 5.8 and ANSI C63.26 (2015).

a) Connect the equipment as illustrated. Mount the equipment with the manufacturer specified antenna in a vertical orientation on a manufacturer specified mounting surface located on a non-conducting rotating platform of a RF anechoic chamber (preferred) or a standard radiation site.

b) Key the transmitter, then rotate the EUT 360° azimuthally and record spectrum analyzer power level (LVL) measurements at angular increments that are sufficiently small to permit resolution of all peaks. If a standard radiation test site is used, raise and lower the test antenna to obtain a maximum reading at each angular increment. (Note: several batteries may be needed to offset the effect of battery voltage droop, which should not exceed 5% of the manufactured specified battery voltage during transmission).

c) Replace the transmitter under test with a vertically polarized half-wave dipole (or an antenna whose gain is known relative to an ideal half-wave dipole). The center of the antenna should be at the same location as the center of the antenna under test.

d) Connect the antenna to a signal generator with a known output power and record the path loss (in dB) as LOSS. If a standard radiation test site is used, raise and lower the test antenna to obtain a maximum reading.LOSS = Generator Output Power (dBm) – Analyzer reading (dBm)

e) Determine the effective radiated output power at each angular position from the readings in steps b) and d) using the following equation:ERP (dBm) = LVL (dBm) + LOSS (dB)

f) The maximum ERP is the maximum value determined in the preceding step.

g) When calculating ERP, in addition to knowing the antenna radiation and matching characteristics, it is necessary to know the loss values of all elements (e.g.transmission line attenuation, mismatches, filters, combiners) interposed between the point where transmitter output power is measured, and the point where power is applied to the antenna. ERP can then be calculated as follows:

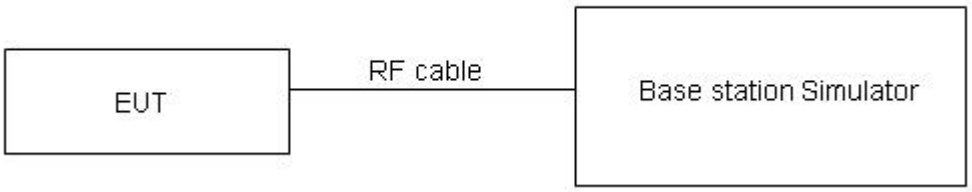
EIRP (dBm) = Output Power (dBm) - Losses (dB) + Antenna Gain (dBi)

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

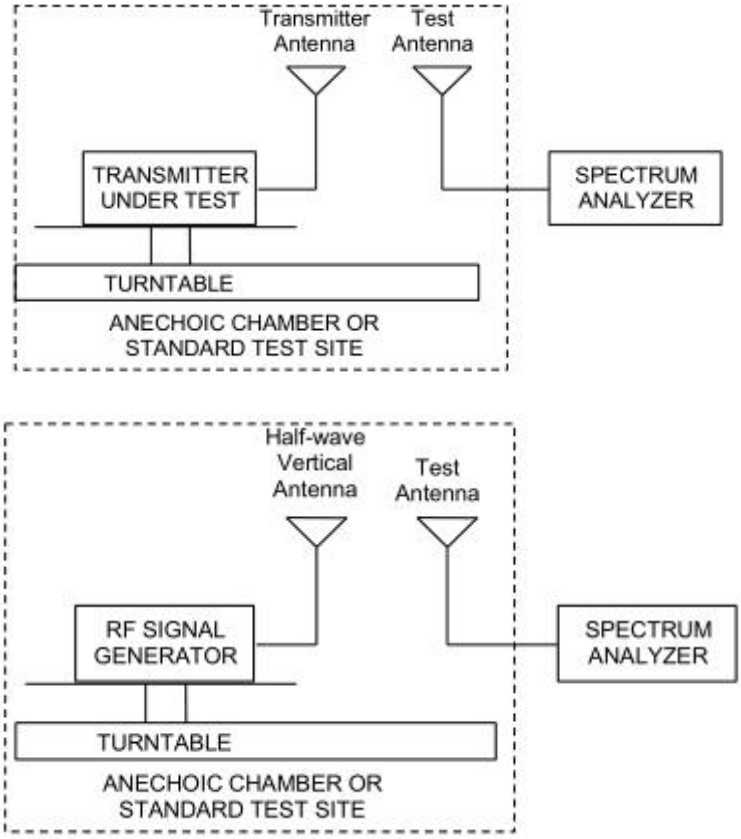
EIRP (dBm) = ERP (dBm) + 2.15 (dB.)

The RB allocation refers to section 5.1, using the maximum output power configuration.

Test Setup



The loss between RF output port of the EUT and the input port of the tester has been taken into consideration.



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

BAND	Bandwidth	Modulation	Channel	RB Configuration	Conducted Power(dBm)	ERP (dBm)
Band5	1.4M	QPSK	20407	1RB#0	21.25	21.88
Band5	1.4M	QPSK	20407	1RB#2	20.43	21.06
Band5	1.4M	QPSK	20407	1RB#5	18.92	19.55
Band5	1.4M	QPSK	20407	3RB#0	21.31	21.94
Band5	1.4M	QPSK	20407	3RB#2	21.16	21.79
Band5	1.4M	QPSK	20407	3RB#3	19.70	20.33
Band5	1.4M	QPSK	20407	6RB#0	20.40	21.03
Band5	1.4M	QPSK	20525	1RB#0	19.63	20.26
Band5	1.4M	QPSK	20525	1RB#2	18.79	19.42
Band5	1.4M	QPSK	20525	1RB#5	21.59	22.22
Band5	1.4M	QPSK	20525	3RB#0	18.83	19.46
Band5	1.4M	QPSK	20525	3RB#2	18.80	19.43
Band5	1.4M	QPSK	20525	3RB#3	19.29	19.92
Band5	1.4M	QPSK	20525	6RB#0	19.38	20.01
Band5	1.4M	QPSK	20643	1RB#0	20.69	21.32
Band5	1.4M	QPSK	20643	1RB#2	20.64	21.27
Band5	1.4M	QPSK	20643	1RB#5	20.31	20.94
Band5	1.4M	QPSK	20643	3RB#0	21.28	21.91
Band5	1.4M	QPSK	20643	3RB#2	21.28	21.91
Band5	1.4M	QPSK	20643	3RB#3	19.63	20.26
Band5	1.4M	QPSK	20643	6RB#0	20.60	21.23
Band5	1.4M	16QAM	20407	1RB#0	21.72	22.35
Band5	1.4M	16QAM	20407	1RB#2	21.04	21.67
Band5	1.4M	16QAM	20407	1RB#5	19.57	20.20
Band5	1.4M	16QAM	20407	3RB#0	21.36	21.99
Band5	1.4M	16QAM	20407	3RB#2	21.31	21.94
Band5	1.4M	16QAM	20407	3RB#3	19.68	20.31
Band5	1.4M	16QAM	20407	6RB#0	20.41	21.04
Band5	1.4M	16QAM	20525	1RB#0	19.70	20.33
Band5	1.4M	16QAM	20525	1RB#2	18.76	19.39
Band5	1.4M	16QAM	20525	1RB#5	21.69	22.32
Band5	1.4M	16QAM	20525	3RB#0	18.77	19.40
Band5	1.4M	16QAM	20525	3RB#2	18.78	19.41
Band5	1.4M	16QAM	20525	3RB#3	20.12	20.75
Band5	1.4M	16QAM	20525	6RB#0	19.48	20.11
Band5	1.4M	16QAM	20643	1RB#0	20.70	21.33
Band5	1.4M	16QAM	20643	1RB#2	20.64	21.27
Band5	1.4M	16QAM	20643	1RB#5	20.28	20.91
Band5	1.4M	16QAM	20643	3RB#0	21.32	21.95

Band5	1.4M	16QAM	20643	3RB#2	21.28	21.91
Band5	1.4M	16QAM	20643	3RB#3	19.73	20.36
Band5	1.4M	16QAM	20643	6RB#0	20.62	21.25
Band5	1.4M	64QAM	20407	1RB#0	20.86	21.49
Band5	1.4M	64QAM	20407	1RB#2	20.97	21.60
Band5	1.4M	64QAM	20407	1RB#5	21.03	21.66
Band5	1.4M	64QAM	20407	3RB#0	20.95	21.58
Band5	1.4M	64QAM	20407	3RB#2	20.94	21.57
Band5	1.4M	64QAM	20407	3RB#3	21.06	21.69
Band5	1.4M	64QAM	20407	6RB#0	20.80	21.43
Band5	1.4M	64QAM	20525	1RB#0	18.34	18.97
Band5	1.4M	64QAM	20525	1RB#2	18.67	19.30
Band5	1.4M	64QAM	20525	1RB#5	18.67	19.30
Band5	1.4M	64QAM	20525	3RB#0	18.28	18.91
Band5	1.4M	64QAM	20525	3RB#2	18.27	18.90
Band5	1.4M	64QAM	20525	3RB#3	18.50	19.13
Band5	1.4M	64QAM	20525	6RB#0	18.33	18.96
Band5	1.4M	64QAM	20643	1RB#0	19.31	19.94
Band5	1.4M	64QAM	20643	1RB#2	19.71	20.34
Band5	1.4M	64QAM	20643	1RB#5	20.05	20.68
Band5	1.4M	64QAM	20643	3RB#0	19.49	20.12
Band5	1.4M	64QAM	20643	3RB#2	19.49	20.12
Band5	1.4M	64QAM	20643	3RB#3	19.98	20.61
Band5	1.4M	64QAM	20643	6RB#0	19.76	20.39
Band5	3M	QPSK	20415	1RB#0	21.27	21.90
Band5	3M	QPSK	20415	1RB#7	20.46	21.09
Band5	3M	QPSK	20415	1RB#14	18.95	19.58
Band5	3M	QPSK	20415	8RB#0	21.39	22.02
Band5	3M	QPSK	20415	8RB#4	21.26	21.89
Band5	3M	QPSK	20415	8RB#7	19.78	20.41
Band5	3M	QPSK	20415	15RB#0	20.43	21.06
Band5	3M	QPSK	20525	1RB#0	19.67	20.30
Band5	3M	QPSK	20525	1RB#7	18.84	19.47
Band5	3M	QPSK	20525	1RB#14	21.64	22.27
Band5	3M	QPSK	20525	8RB#0	18.93	19.56
Band5	3M	QPSK	20525	8RB#4	18.88	19.51
Band5	3M	QPSK	20525	8RB#7	19.38	20.01
Band5	3M	QPSK	20525	15RB#0	19.42	20.05
Band5	3M	QPSK	20635	1RB#0	20.72	21.35
Band5	3M	QPSK	20635	1RB#7	20.68	21.31
Band5	3M	QPSK	20635	1RB#14	20.35	20.98
Band5	3M	QPSK	20635	8RB#0	21.39	22.02
Band5	3M	QPSK	20635	8RB#4	21.38	22.01

Band5	3M	QPSK	20635	8RB#7	19.71	20.34
Band5	3M	QPSK	20635	15RB#0	20.63	21.26
Band5	3M	16QAM	20415	1RB#0	21.75	22.38
Band5	3M	16QAM	20415	1RB#7	21.07	21.70
Band5	3M	16QAM	20415	1RB#14	19.59	20.22
Band5	3M	16QAM	20415	8RB#0	21.45	22.08
Band5	3M	16QAM	20415	8RB#4	21.40	22.03
Band5	3M	16QAM	20415	8RB#7	19.76	20.39
Band5	3M	16QAM	20415	15RB#0	20.44	21.07
Band5	3M	16QAM	20525	1RB#0	19.72	20.35
Band5	3M	16QAM	20525	1RB#7	18.81	19.44
Band5	3M	16QAM	20525	1RB#14	21.73	22.36
Band5	3M	16QAM	20525	8RB#0	18.88	19.51
Band5	3M	16QAM	20525	8RB#4	18.89	19.52
Band5	3M	16QAM	20525	8RB#7	20.22	20.85
Band5	3M	16QAM	20525	15RB#0	19.52	20.15
Band5	3M	16QAM	20635	1RB#0	20.73	21.36
Band5	3M	16QAM	20635	1RB#7	20.68	21.31
Band5	3M	16QAM	20635	1RB#14	20.31	20.94
Band5	3M	16QAM	20635	8RB#0	21.42	22.05
Band5	3M	16QAM	20635	8RB#4	21.38	22.01
Band5	3M	16QAM	20635	8RB#7	19.84	20.47
Band5	3M	16QAM	20635	15RB#0	20.65	21.28
Band5	3M	64QAM	20415	1RB#0	20.55	21.18
Band5	3M	64QAM	20415	1RB#7	21.02	21.65
Band5	3M	64QAM	20415	1RB#14	21.31	21.94
Band5	3M	64QAM	20415	8RB#0	21.19	21.82
Band5	3M	64QAM	20415	8RB#4	21.29	21.92
Band5	3M	64QAM	20415	8RB#7	21.42	22.05
Band5	3M	64QAM	20415	15RB#0	21.17	21.80
Band5	3M	64QAM	20525	1RB#0	18.04	18.67
Band5	3M	64QAM	20525	1RB#7	18.70	19.33
Band5	3M	64QAM	20525	1RB#14	19.08	19.71
Band5	3M	64QAM	20525	8RB#0	18.42	19.05
Band5	3M	64QAM	20525	8RB#4	18.42	19.05
Band5	3M	64QAM	20525	8RB#7	18.52	19.15
Band5	3M	64QAM	20525	15RB#0	18.34	18.97
Band5	3M	64QAM	20635	1RB#0	18.79	19.42
Band5	3M	64QAM	20635	1RB#7	19.23	19.86
Band5	3M	64QAM	20635	1RB#14	20.09	20.72
Band5	3M	64QAM	20635	8RB#0	19.51	20.14
Band5	3M	64QAM	20635	8RB#4	19.52	20.15
Band5	3M	64QAM	20635	8RB#7	19.54	20.17

Band5	3M	64QAM	20635	15RB#0	19.41	20.04
Band5	5M	QPSK	20425	1RB#0	21.31	21.94
Band5	5M	QPSK	20425	1RB#13	20.53	21.16
Band5	5M	QPSK	20425	1RB#24	19.01	19.64
Band5	5M	QPSK	20425	12RB#0	21.46	22.09
Band5	5M	QPSK	20425	12RB#6	21.31	21.94
Band5	5M	QPSK	20425	12RB#13	19.85	20.48
Band5	5M	QPSK	20425	25RB#0	20.51	21.14
Band5	5M	QPSK	20525	1RB#0	19.79	20.42
Band5	5M	QPSK	20525	1RB#13	18.89	19.52
Band5	5M	QPSK	20525	1RB#24	21.71	22.34
Band5	5M	QPSK	20525	12RB#0	18.97	19.60
Band5	5M	QPSK	20525	12RB#6	18.93	19.56
Band5	5M	QPSK	20525	12RB#13	19.48	20.11
Band5	5M	QPSK	20525	25RB#0	19.51	20.14
Band5	5M	QPSK	20625	1RB#0	20.77	21.40
Band5	5M	QPSK	20625	1RB#13	20.75	21.38
Band5	5M	QPSK	20625	1RB#24	20.44	21.07
Band5	5M	QPSK	20625	12RB#0	21.45	22.08
Band5	5M	QPSK	20625	12RB#6	21.42	22.05
Band5	5M	QPSK	20625	12RB#13	19.71	20.34
Band5	5M	QPSK	20625	25RB#0	20.64	21.27
Band5	5M	16QAM	20425	1RB#0	21.77	22.40
Band5	5M	16QAM	20425	1RB#13	21.09	21.72
Band5	5M	16QAM	20425	1RB#24	19.61	20.24
Band5	5M	16QAM	20425	12RB#0	21.49	22.12
Band5	5M	16QAM	20425	12RB#6	21.42	22.05
Band5	5M	16QAM	20425	12RB#13	19.81	20.44
Band5	5M	16QAM	20425	25RB#0	20.47	21.10
Band5	5M	16QAM	20525	1RB#0	19.74	20.37
Band5	5M	16QAM	20525	1RB#13	18.88	19.51
Band5	5M	16QAM	20525	1RB#24	21.80	22.43
Band5	5M	16QAM	20525	12RB#0	18.92	19.55
Band5	5M	16QAM	20525	12RB#6	18.93	19.56
Band5	5M	16QAM	20525	12RB#13	20.22	20.85
Band5	5M	16QAM	20525	25RB#0	19.53	20.16
Band5	5M	16QAM	20625	1RB#0	20.77	21.40
Band5	5M	16QAM	20625	1RB#13	20.72	21.35
Band5	5M	16QAM	20625	1RB#24	20.34	20.97
Band5	5M	16QAM	20625	12RB#0	21.47	22.10
Band5	5M	16QAM	20625	12RB#6	21.43	22.06
Band5	5M	16QAM	20625	12RB#13	19.87	20.50
Band5	5M	16QAM	20625	25RB#0	20.66	21.29

Band5	5M	64QAM	20425	1RB#0	20.35	20.98
Band5	5M	64QAM	20425	1RB#13	21.18	21.81
Band5	5M	64QAM	20425	1RB#24	20.34	20.97
Band5	5M	64QAM	20425	12RB#0	21.26	21.89
Band5	5M	64QAM	20425	12RB#6	21.25	21.88
Band5	5M	64QAM	20425	12RB#13	20.60	21.23
Band5	5M	64QAM	20425	25RB#0	20.51	21.14
Band5	5M	64QAM	20525	1RB#0	17.91	18.54
Band5	5M	64QAM	20525	1RB#13	18.52	19.15
Band5	5M	64QAM	20525	1RB#24	19.43	20.06
Band5	5M	64QAM	20525	12RB#0	18.23	18.86
Band5	5M	64QAM	20525	12RB#6	18.23	18.86
Band5	5M	64QAM	20525	12RB#13	18.47	19.10
Band5	5M	64QAM	20525	25RB#0	18.09	18.72
Band5	5M	64QAM	20625	1RB#0	20.19	20.82
Band5	5M	64QAM	20625	1RB#13	18.89	19.52
Band5	5M	64QAM	20625	1RB#24	19.86	20.49
Band5	5M	64QAM	20625	12RB#0	19.95	20.58
Band5	5M	64QAM	20625	12RB#6	19.96	20.59
Band5	5M	64QAM	20625	12RB#13	19.08	19.71
Band5	5M	64QAM	20625	25RB#0	18.93	19.56
Band5	10M	QPSK	20450	1RB#0	21.22	21.85
Band5	10M	QPSK	20450	1RB#25	20.44	21.07
Band5	10M	QPSK	20450	1RB#49	18.89	19.52
Band5	10M	QPSK	20450	25RB#0	21.34	21.97
Band5	10M	QPSK	20450	25RB#13	21.22	21.85
Band5	10M	QPSK	20450	25RB#25	19.72	20.35
Band5	10M	QPSK	20450	50RB#0	20.44	21.07
Band5	10M	QPSK	20525	1RB#0	19.58	20.21
Band5	10M	QPSK	20525	1RB#25	18.80	19.43
Band5	10M	QPSK	20525	1RB#49	21.57	22.20
Band5	10M	QPSK	20525	25RB#0	18.84	19.47
Band5	10M	QPSK	20525	25RB#13	18.80	19.43
Band5	10M	QPSK	20525	25RB#25	19.32	19.95
Band5	10M	QPSK	20525	50RB#0	19.34	19.97
Band5	10M	QPSK	20600	1RB#0	20.66	21.29
Band5	10M	QPSK	20600	1RB#25	20.64	21.27
Band5	10M	QPSK	20600	1RB#49	20.27	20.90
Band5	10M	QPSK	20600	25RB#0	21.32	21.95
Band5	10M	QPSK	20600	25RB#13	21.30	21.93
Band5	10M	QPSK	20600	25RB#25	19.64	20.27
Band5	10M	QPSK	20600	50RB#0	20.56	21.19
Band5	10M	16QAM	20450	1RB#0	21.67	22.30

Band5	10M	16QAM	20450	1RB#25	21.01	21.64
Band5	10M	16QAM	20450	1RB#49	19.54	20.17
Band5	10M	16QAM	20450	25RB#0	21.40	22.03
Band5	10M	16QAM	20450	25RB#13	21.33	21.96
Band5	10M	16QAM	20450	25RB#25	19.71	20.34
Band5	10M	16QAM	20450	50RB#0	20.40	21.03
Band5	10M	16QAM	20525	1RB#0	19.65	20.28
Band5	10M	16QAM	20525	1RB#25	18.78	19.41
Band5	10M	16QAM	20525	1RB#49	21.66	22.29
Band5	10M	16QAM	20525	25RB#0	18.83	19.46
Band5	10M	16QAM	20525	25RB#13	18.81	19.44
Band5	10M	16QAM	20525	25RB#25	20.13	20.76
Band5	10M	16QAM	20525	50RB#0	19.44	20.07
Band5	10M	16QAM	20600	1RB#0	20.65	21.28
Band5	10M	16QAM	20600	1RB#25	20.62	21.25
Band5	10M	16QAM	20600	1RB#49	20.25	20.88
Band5	10M	16QAM	20600	25RB#0	21.37	22.00
Band5	10M	16QAM	20600	25RB#13	21.30	21.93
Band5	10M	16QAM	20600	25RB#25	19.77	20.40
Band5	10M	16QAM	20600	50RB#0	20.57	21.20
Band5	10M	64QAM	20450	1RB#0	21.10	21.73
Band5	10M	64QAM	20450	1RB#25	20.24	20.87
Band5	10M	64QAM	20450	1RB#49	18.66	19.29
Band5	10M	64QAM	20450	25RB#0	21.23	21.86
Band5	10M	64QAM	20450	25RB#13	21.22	21.85
Band5	10M	64QAM	20450	25RB#25	19.43	20.06
Band5	10M	64QAM	20450	50RB#0	19.88	20.51
Band5	10M	64QAM	20525	1RB#0	19.29	19.92
Band5	10M	64QAM	20525	1RB#25	18.28	18.91
Band5	10M	64QAM	20525	1RB#49	21.17	21.80
Band5	10M	64QAM	20525	25RB#0	18.24	18.87
Band5	10M	64QAM	20525	25RB#13	18.15	18.78
Band5	10M	64QAM	20525	25RB#25	19.49	20.12
Band5	10M	64QAM	20525	50RB#0	18.82	19.45
Band5	10M	64QAM	20600	1RB#0	20.08	20.71
Band5	10M	64QAM	20600	1RB#25	20.39	21.02
Band5	10M	64QAM	20600	1RB#49	19.84	20.47
Band5	10M	64QAM	20600	25RB#0	20.93	21.56
Band5	10M	64QAM	20600	25RB#13	20.94	21.57
Band5	10M	64QAM	20600	25RB#25	19.50	20.13
Band5	10M	64QAM	20600	50RB#0	20.24	20.87

BAND	Bandwidth	Modulation	Channel	RB Configuration	Conducted Power(dBm)	ERP (dBm)
Band26-part22	1.4M	QPSK	26797	1RB#0	22.59	23.22
Band26-part22	1.4M	QPSK	26797	1RB#2	20.76	21.39
Band26-part22	1.4M	QPSK	26797	1RB#5	21.40	22.03
Band26-part22	1.4M	QPSK	26797	3RB#0	22.02	22.65
Band26-part22	1.4M	QPSK	26797	3RB#2	21.94	22.57
Band26-part22	1.4M	QPSK	26797	3RB#3	20.03	20.66
Band26-part22	1.4M	QPSK	26797	6RB#0	20.97	21.60
Band26-part22	1.4M	QPSK	26915	1RB#0	21.96	22.59
Band26-part22	1.4M	QPSK	26915	1RB#2	20.37	21.00
Band26-part22	1.4M	QPSK	26915	1RB#5	22.86	23.49
Band26-part22	1.4M	QPSK	26915	3RB#0	20.26	20.89
Band26-part22	1.4M	QPSK	26915	3RB#2	20.21	20.84
Band26-part22	1.4M	QPSK	26915	3RB#3	21.52	22.15
Band26-part22	1.4M	QPSK	26915	6RB#0	20.98	21.61
Band26-part22	1.4M	QPSK	27033	1RB#0	20.11	20.74
Band26-part22	1.4M	QPSK	27033	1RB#2	22.45	23.08
Band26-part22	1.4M	QPSK	27033	1RB#5	21.53	22.16
Band26-part22	1.4M	QPSK	27033	3RB#0	20.81	21.44
Band26-part22	1.4M	QPSK	27033	3RB#2	20.76	21.39
Band26-part22	1.4M	QPSK	27033	3RB#3	21.46	22.09
Band26-part22	1.4M	QPSK	27033	6RB#0	21.28	21.91
Band26-part22	1.4M	16QAM	26797	1RB#0	22.91	23.54
Band26-part22	1.4M	16QAM	26797	1RB#2	21.38	22.01
Band26-part22	1.4M	16QAM	26797	1RB#5	21.85	22.48
Band26-part22	1.4M	16QAM	26797	3RB#0	21.98	22.61
Band26-part22	1.4M	16QAM	26797	3RB#2	21.95	22.58
Band26-part22	1.4M	16QAM	26797	3RB#3	20.03	20.66
Band26-part22	1.4M	16QAM	26797	6RB#0	21.18	21.81
Band26-part22	1.4M	16QAM	26915	1RB#0	22.13	22.76
Band26-part22	1.4M	16QAM	26915	1RB#2	20.64	21.27
Band26-part22	1.4M	16QAM	26915	1RB#5	22.92	23.55
Band26-part22	1.4M	16QAM	26915	3RB#0	20.18	20.81
Band26-part22	1.4M	16QAM	26915	3RB#2	20.17	20.80
Band26-part22	1.4M	16QAM	26915	3RB#3	21.63	22.26
Band26-part22	1.4M	16QAM	26915	6RB#0	21.02	21.65
Band26-part22	1.4M	16QAM	27033	1RB#0	20.26	20.89
Band26-part22	1.4M	16QAM	27033	1RB#2	22.67	23.30
Band26-part22	1.4M	16QAM	27033	1RB#5	21.69	22.32
Band26-part22	1.4M	16QAM	27033	3RB#0	20.82	21.45
Band26-part22	1.4M	16QAM	27033	3RB#2	20.79	21.42

Band26-part22	1.4M	16QAM	27033	3RB#3	21.43	22.06
Band26-part22	1.4M	16QAM	27033	6RB#0	21.27	21.90
Band26-part22	1.4M	64QAM	26797	1RB#0	18.74	19.37
Band26-part22	1.4M	64QAM	26797	1RB#2	19.09	19.72
Band26-part22	1.4M	64QAM	26797	1RB#5	19.32	19.95
Band26-part22	1.4M	64QAM	26797	3RB#0	19.03	19.66
Band26-part22	1.4M	64QAM	26797	3RB#2	19.01	19.64
Band26-part22	1.4M	64QAM	26797	3RB#3	19.33	19.96
Band26-part22	1.4M	64QAM	26797	6RB#0	19.05	19.68
Band26-part22	1.4M	64QAM	26915	1RB#0	14.74	15.37
Band26-part22	1.4M	64QAM	26915	1RB#2	15.11	15.74
Band26-part22	1.4M	64QAM	26915	1RB#5	15.26	15.89
Band26-part22	1.4M	64QAM	26915	3RB#0	14.70	15.33
Band26-part22	1.4M	64QAM	26915	3RB#2	14.69	15.32
Band26-part22	1.4M	64QAM	26915	3RB#3	15.08	15.71
Band26-part22	1.4M	64QAM	26915	6RB#0	14.77	15.40
Band26-part22	1.4M	64QAM	27033	1RB#0	16.42	17.05
Band26-part22	1.4M	64QAM	27033	1RB#2	17.48	18.11
Band26-part22	1.4M	64QAM	27033	1RB#5	18.33	18.96
Band26-part22	1.4M	64QAM	27033	3RB#0	16.75	17.38
Band26-part22	1.4M	64QAM	27033	3RB#2	16.73	17.36
Band26-part22	1.4M	64QAM	27033	3RB#3	17.86	18.49
Band26-part22	1.4M	64QAM	27033	6RB#0	17.35	17.98
Band26-part22	3M	QPSK	26805	1RB#0	22.61	23.24
Band26-part22	3M	QPSK	26805	1RB#7	20.79	21.42
Band26-part22	3M	QPSK	26805	1RB#14	21.43	22.06
Band26-part22	3M	QPSK	26805	8RB#0	22.10	22.73
Band26-part22	3M	QPSK	26805	8RB#4	22.04	22.67
Band26-part22	3M	QPSK	26805	8RB#7	20.11	20.74
Band26-part22	3M	QPSK	26805	15RB#0	21.00	21.63
Band26-part22	3M	QPSK	26915	1RB#0	22.00	22.63
Band26-part22	3M	QPSK	26915	1RB#7	20.42	21.05
Band26-part22	3M	QPSK	26915	1RB#14	22.91	23.54
Band26-part22	3M	QPSK	26915	8RB#0	20.36	20.99
Band26-part22	3M	QPSK	26915	8RB#4	20.29	20.92
Band26-part22	3M	QPSK	26915	8RB#7	21.61	22.24
Band26-part22	3M	QPSK	26915	15RB#0	21.02	21.65
Band26-part22	3M	QPSK	27025	1RB#0	20.14	20.77
Band26-part22	3M	QPSK	27025	1RB#7	22.49	23.12
Band26-part22	3M	QPSK	27025	1RB#14	21.57	22.20
Band26-part22	3M	QPSK	27025	8RB#0	20.92	21.55
Band26-part22	3M	QPSK	27025	8RB#4	20.86	21.49
Band26-part22	3M	QPSK	27025	8RB#7	21.54	22.17

Band26-part22	3M	QPSK	27025	15RB#0	21.31	21.94
Band26-part22	3M	16QAM	26805	1RB#0	22.94	23.57
Band26-part22	3M	16QAM	26805	1RB#7	21.41	22.04
Band26-part22	3M	16QAM	26805	1RB#14	21.87	22.50
Band26-part22	3M	16QAM	26805	8RB#0	22.07	22.70
Band26-part22	3M	16QAM	26805	8RB#4	22.04	22.67
Band26-part22	3M	16QAM	26805	8RB#7	20.11	20.74
Band26-part22	3M	16QAM	26805	15RB#0	21.21	21.84
Band26-part22	3M	16QAM	26915	1RB#0	22.15	22.78
Band26-part22	3M	16QAM	26915	1RB#7	20.69	21.32
Band26-part22	3M	16QAM	26915	1RB#14	22.96	23.59
Band26-part22	3M	16QAM	26915	8RB#0	20.29	20.92
Band26-part22	3M	16QAM	26915	8RB#4	20.28	20.91
Band26-part22	3M	16QAM	26915	8RB#7	21.73	22.36
Band26-part22	3M	16QAM	26915	15RB#0	21.06	21.69
Band26-part22	3M	16QAM	27025	1RB#0	20.29	20.92
Band26-part22	3M	16QAM	27025	1RB#7	22.71	23.34
Band26-part22	3M	16QAM	27025	1RB#14	21.72	22.35
Band26-part22	3M	16QAM	27025	8RB#0	20.92	21.55
Band26-part22	3M	16QAM	27025	8RB#4	20.89	21.52
Band26-part22	3M	16QAM	27025	8RB#7	21.54	22.17
Band26-part22	3M	16QAM	27025	15RB#0	21.30	21.93
Band26-part22	3M	64QAM	26805	1RB#0	18.96	19.59
Band26-part22	3M	64QAM	26805	1RB#7	19.91	20.54
Band26-part22	3M	64QAM	26805	1RB#14	20.20	20.83
Band26-part22	3M	64QAM	26805	8RB#0	19.51	20.14
Band26-part22	3M	64QAM	26805	8RB#4	19.50	20.13
Band26-part22	3M	64QAM	26805	8RB#7	19.93	20.56
Band26-part22	3M	64QAM	26805	15RB#0	19.62	20.25
Band26-part22	3M	64QAM	26915	1RB#0	14.48	15.11
Band26-part22	3M	64QAM	26915	1RB#7	15.12	15.75
Band26-part22	3M	64QAM	26915	1RB#14	15.88	16.51
Band26-part22	3M	64QAM	26915	8RB#0	14.81	15.44
Band26-part22	3M	64QAM	26915	8RB#4	14.82	15.45
Band26-part22	3M	64QAM	26915	8RB#7	15.18	15.81
Band26-part22	3M	64QAM	26915	15RB#0	14.78	15.41
Band26-part22	3M	64QAM	27025	1RB#0	15.90	16.53
Band26-part22	3M	64QAM	27025	1RB#7	16.16	16.79
Band26-part22	3M	64QAM	27025	1RB#14	18.37	19.00
Band26-part22	3M	64QAM	27025	8RB#0	16.23	16.86
Band26-part22	3M	64QAM	27025	8RB#4	16.24	16.87
Band26-part22	3M	64QAM	27025	8RB#7	16.94	17.57
Band26-part22	3M	64QAM	27025	15RB#0	16.45	17.08

Band26-part22	5M	QPSK	26815	1RB#0	22.65	23.28
Band26-part22	5M	QPSK	26815	1RB#13	20.86	21.49
Band26-part22	5M	QPSK	26815	1RB#24	21.49	22.12
Band26-part22	5M	QPSK	26815	12RB#0	22.17	22.80
Band26-part22	5M	QPSK	26815	12RB#6	22.09	22.72
Band26-part22	5M	QPSK	26815	12RB#13	20.18	20.81
Band26-part22	5M	QPSK	26815	25RB#0	21.08	21.71
Band26-part22	5M	QPSK	26915	1RB#0	22.12	22.75
Band26-part22	5M	QPSK	26915	1RB#13	20.47	21.10
Band26-part22	5M	QPSK	26915	1RB#24	22.98	23.61
Band26-part22	5M	QPSK	26915	12RB#0	20.40	21.03
Band26-part22	5M	QPSK	26915	12RB#6	20.34	20.97
Band26-part22	5M	QPSK	26915	12RB#13	21.71	22.34
Band26-part22	5M	QPSK	26915	25RB#0	21.11	21.74
Band26-part22	5M	QPSK	27015	1RB#0	20.19	20.82
Band26-part22	5M	QPSK	27015	1RB#13	22.56	23.19
Band26-part22	5M	QPSK	27015	1RB#24	21.66	22.29
Band26-part22	5M	QPSK	27015	12RB#0	20.98	21.61
Band26-part22	5M	QPSK	27015	12RB#6	20.90	21.53
Band26-part22	5M	QPSK	27015	12RB#13	21.54	22.17
Band26-part22	5M	QPSK	27015	25RB#0	21.32	21.95
Band26-part22	5M	16QAM	26815	1RB#0	22.96	23.59
Band26-part22	5M	16QAM	26815	1RB#13	21.43	22.06
Band26-part22	5M	16QAM	26815	1RB#24	21.89	22.52
Band26-part22	5M	16QAM	26815	12RB#0	22.11	22.74
Band26-part22	5M	16QAM	26815	12RB#6	22.06	22.69
Band26-part22	5M	16QAM	26815	12RB#13	20.16	20.79
Band26-part22	5M	16QAM	26815	25RB#0	21.24	21.87
Band26-part22	5M	16QAM	26915	1RB#0	22.17	22.80
Band26-part22	5M	16QAM	26915	1RB#13	20.76	21.39
Band26-part22	5M	16QAM	26915	1RB#24	23.03	23.66
Band26-part22	5M	16QAM	26915	12RB#0	20.33	20.96
Band26-part22	5M	16QAM	26915	12RB#6	20.32	20.95
Band26-part22	5M	16QAM	26915	12RB#13	21.73	22.36
Band26-part22	5M	16QAM	26915	25RB#0	21.07	21.70
Band26-part22	5M	16QAM	27015	1RB#0	20.33	20.96
Band26-part22	5M	16QAM	27015	1RB#13	22.75	23.38
Band26-part22	5M	16QAM	27015	1RB#24	21.75	22.38
Band26-part22	5M	16QAM	27015	12RB#0	20.97	21.60
Band26-part22	5M	16QAM	27015	12RB#6	20.94	21.57
Band26-part22	5M	16QAM	27015	12RB#13	21.57	22.20
Band26-part22	5M	16QAM	27015	25RB#0	21.31	21.94
Band26-part22	5M	64QAM	26815	1RB#0	18.75	19.38

Band26-part22	5M	64QAM	26815	1RB#13	20.15	20.78
Band26-part22	5M	64QAM	26815	1RB#24	18.78	19.41
Band26-part22	5M	64QAM	26815	12RB#0	19.68	20.31
Band26-part22	5M	64QAM	26815	12RB#6	19.66	20.29
Band26-part22	5M	64QAM	26815	12RB#13	19.62	20.25
Band26-part22	5M	64QAM	26815	25RB#0	19.52	20.15
Band26-part22	5M	64QAM	26915	1RB#0	14.48	15.11
Band26-part22	5M	64QAM	26915	1RB#13	14.96	15.59
Band26-part22	5M	64QAM	26915	1RB#24	16.55	17.18
Band26-part22	5M	64QAM	26915	12RB#0	14.63	15.26
Band26-part22	5M	64QAM	26915	12RB#6	14.65	15.28
Band26-part22	5M	64QAM	26915	12RB#13	15.29	15.92
Band26-part22	5M	64QAM	26915	25RB#0	14.64	15.27
Band26-part22	5M	64QAM	27015	1RB#0	17.93	18.56
Band26-part22	5M	64QAM	27015	1RB#13	15.56	16.19
Band26-part22	5M	64QAM	27015	1RB#24	17.92	18.55
Band26-part22	5M	64QAM	27015	12RB#0	16.96	17.59
Band26-part22	5M	64QAM	27015	12RB#6	16.99	17.62
Band26-part22	5M	64QAM	27015	12RB#13	16.07	16.70
Band26-part22	5M	64QAM	27015	25RB#0	16.31	16.94
Band26-part22	10M	QPSK	26840	1RB#0	22.60	23.23
Band26-part22	10M	QPSK	26840	1RB#25	20.80	21.43
Band26-part22	10M	QPSK	26840	1RB#49	21.42	22.05
Band26-part22	10M	QPSK	26840	25RB#0	22.10	22.73
Band26-part22	10M	QPSK	26840	25RB#13	22.05	22.68
Band26-part22	10M	QPSK	26840	25RB#25	20.11	20.74
Band26-part22	10M	QPSK	26840	50RB#0	21.06	21.69
Band26-part22	10M	QPSK	26915	1RB#0	21.99	22.62
Band26-part22	10M	QPSK	26915	1RB#25	20.43	21.06
Band26-part22	10M	QPSK	26915	1RB#49	22.90	23.53
Band26-part22	10M	QPSK	26915	25RB#0	20.36	20.99
Band26-part22	10M	QPSK	26915	25RB#13	20.30	20.93
Band26-part22	10M	QPSK	26915	25RB#25	21.63	22.26
Band26-part22	10M	QPSK	26915	50RB#0	21.03	21.66
Band26-part22	10M	QPSK	26990	1RB#0	20.13	20.76
Band26-part22	10M	QPSK	26990	1RB#25	22.50	23.13
Band26-part22	10M	QPSK	26990	1RB#49	21.56	22.19
Band26-part22	10M	QPSK	26990	25RB#0	20.92	21.55
Band26-part22	10M	QPSK	26990	25RB#13	20.85	21.48
Band26-part22	10M	QPSK	26990	25RB#25	21.55	22.18
Band26-part22	10M	QPSK	26990	50RB#0	21.33	21.96
Band26-part22	10M	16QAM	26840	1RB#0	22.93	23.56
Band26-part22	10M	16QAM	26840	1RB#25	21.41	22.04

Band26-part22	10M	16QAM	26840	1RB#49	21.87	22.50
Band26-part22	10M	16QAM	26840	25RB#0	22.08	22.71
Band26-part22	10M	16QAM	26840	25RB#13	22.03	22.66
Band26-part22	10M	16QAM	26840	25RB#25	20.11	20.74
Band26-part22	10M	16QAM	26840	50RB#0	21.22	21.85
Band26-part22	10M	16QAM	26915	1RB#0	22.14	22.77
Band26-part22	10M	16QAM	26915	1RB#25	20.71	21.34
Band26-part22	10M	16QAM	26915	1RB#49	22.96	23.59
Band26-part22	10M	16QAM	26915	25RB#0	20.30	20.93
Band26-part22	10M	16QAM	26915	25RB#13	20.27	20.90
Band26-part22	10M	16QAM	26915	25RB#25	21.73	22.36
Band26-part22	10M	16QAM	26915	50RB#0	21.07	21.70
Band26-part22	10M	16QAM	26990	1RB#0	20.28	20.91
Band26-part22	10M	16QAM	26990	1RB#25	22.71	23.34
Band26-part22	10M	16QAM	26990	1RB#49	21.71	22.34
Band26-part22	10M	16QAM	26990	25RB#0	20.93	21.56
Band26-part22	10M	16QAM	26990	25RB#13	20.88	21.51
Band26-part22	10M	16QAM	26990	25RB#25	21.54	22.17
Band26-part22	10M	16QAM	26990	50RB#0	21.29	21.92
Band26-part22	10M	64QAM	26840	1RB#0	19.27	19.90
Band26-part22	10M	64QAM	26840	1RB#25	18.50	19.13
Band26-part22	10M	64QAM	26840	1RB#49	15.52	16.15
Band26-part22	10M	64QAM	26840	25RB#0	19.75	20.38
Band26-part22	10M	64QAM	26840	25RB#13	19.73	20.36
Band26-part22	10M	64QAM	26840	25RB#25	16.99	17.62
Band26-part22	10M	64QAM	26840	50RB#0	18.29	18.92
Band26-part22	10M	64QAM	26915	1RB#0	16.38	17.01
Band26-part22	10M	64QAM	26915	1RB#25	14.70	15.33
Band26-part22	10M	64QAM	26915	1RB#49	19.89	20.52
Band26-part22	10M	64QAM	26915	25RB#0	14.78	15.41
Band26-part22	10M	64QAM	26915	25RB#13	14.80	15.43
Band26-part22	10M	64QAM	26915	25RB#25	17.07	17.70
Band26-part22	10M	64QAM	26915	50RB#0	15.82	16.45
Band26-part22	10M	64QAM	26990	1RB#0	17.89	18.52
Band26-part22	10M	64QAM	26990	1RB#25	18.15	18.78
Band26-part22	10M	64QAM	26990	1RB#49	17.65	18.28
Band26-part22	10M	64QAM	26990	25RB#0	19.56	20.19
Band26-part22	10M	64QAM	26990	25RB#13	19.55	20.18
Band26-part22	10M	64QAM	26990	25RB#25	16.71	17.34
Band26-part22	10M	64QAM	26990	50RB#0	18.38	19.01
Band26-part22	15M	QPSK	26865	1RB#0	22.56	23.19
Band26-part22	15M	QPSK	26865	1RB#38	20.77	21.40
Band26-part22	15M	QPSK	26865	1RB#74	21.37	22.00

Band26-part22	15M	QPSK	26865	36RB#0	22.05	22.68
Band26-part22	15M	QPSK	26865	36RB#18	22.00	22.63
Band26-part22	15M	QPSK	26865	36RB#39	20.05	20.68
Band26-part22	15M	QPSK	26865	75RB#0	21.01	21.64
Band26-part22	15M	QPSK	26915	1RB#0	21.91	22.54
Band26-part22	15M	QPSK	26915	1RB#38	20.38	21.01
Band26-part22	15M	QPSK	26915	1RB#74	22.84	23.47
Band26-part22	15M	QPSK	26915	36RB#0	20.27	20.90
Band26-part22	15M	QPSK	26915	36RB#18	20.21	20.84
Band26-part22	15M	QPSK	26915	36RB#39	21.55	22.18
Band26-part22	15M	QPSK	26915	75RB#0	20.94	21.57
Band26-part22	15M	QPSK	26965	1RB#0	20.08	20.71
Band26-part22	15M	QPSK	26965	1RB#38	22.45	23.08
Band26-part22	15M	QPSK	26965	1RB#74	21.49	22.12
Band26-part22	15M	QPSK	26965	36RB#0	20.85	21.48
Band26-part22	15M	QPSK	26965	36RB#18	20.78	21.41
Band26-part22	15M	QPSK	26965	36RB#39	21.47	22.10
Band26-part22	15M	QPSK	26965	75RB#0	21.24	21.87
Band26-part22	15M	16QAM	26865	1RB#0	22.86	23.49
Band26-part22	15M	16QAM	26865	1RB#38	21.35	21.98
Band26-part22	15M	16QAM	26865	1RB#74	21.82	22.45
Band26-part22	15M	16QAM	26865	36RB#0	22.02	22.65
Band26-part22	15M	16QAM	26865	36RB#18	21.97	22.60
Band26-part22	15M	16QAM	26865	36RB#39	20.06	20.69
Band26-part22	15M	16QAM	26865	75RB#0	21.17	21.80
Band26-part22	15M	16QAM	26915	1RB#0	22.08	22.71
Band26-part22	15M	16QAM	26915	1RB#38	20.66	21.29
Band26-part22	15M	16QAM	26915	1RB#74	22.89	23.52
Band26-part22	15M	16QAM	26915	36RB#0	20.24	20.87
Band26-part22	15M	16QAM	26915	36RB#18	20.20	20.83
Band26-part22	15M	16QAM	26915	36RB#39	21.64	22.27
Band26-part22	15M	16QAM	26915	75RB#0	20.98	21.61
Band26-part22	15M	16QAM	26965	1RB#0	20.21	20.84
Band26-part22	15M	16QAM	26965	1RB#38	22.65	23.28
Band26-part22	15M	16QAM	26965	1RB#74	21.66	22.29
Band26-part22	15M	16QAM	26965	36RB#0	20.87	21.50
Band26-part22	15M	16QAM	26965	36RB#18	20.81	21.44
Band26-part22	15M	16QAM	26965	36RB#39	21.47	22.10
Band26-part22	15M	16QAM	26965	75RB#0	21.22	21.85
Band26-part22	15M	64QAM	26865	1RB#0	19.50	20.13
Band26-part22	15M	64QAM	26865	1RB#38	16.64	17.27
Band26-part22	15M	64QAM	26865	1RB#74	16.74	17.37
Band26-part22	15M	64QAM	26865	36RB#0	19.18	19.81

Band26-part22	15M	64QAM	26865	36RB#18	19.18	19.81
Band26-part22	15M	64QAM	26865	36RB#39	15.03	15.66
Band26-part22	15M	64QAM	26865	75RB#0	17.11	17.74
Band26-part22	15M	64QAM	26915	1RB#0	18.66	19.29
Band26-part22	15M	64QAM	26915	1RB#38	14.96	15.59
Band26-part22	15M	64QAM	26915	1RB#74	19.86	20.49
Band26-part22	15M	64QAM	26915	36RB#0	15.87	16.50
Band26-part22	15M	64QAM	26915	36RB#18	15.88	16.51
Band26-part22	15M	64QAM	26915	36RB#39	18.22	18.85
Band26-part22	15M	64QAM	26915	75RB#0	16.80	17.43
Band26-part22	15M	64QAM	26965	1RB#0	14.68	15.31
Band26-part22	15M	64QAM	26965	1RB#38	20.02	20.65
Band26-part22	15M	64QAM	26965	1RB#74	17.32	17.95
Band26-part22	15M	64QAM	26965	36RB#0	16.41	17.04
Band26-part22	15M	64QAM	26965	36RB#18	16.30	16.93
Band26-part22	15M	64QAM	26965	36RB#39	18.15	18.78
Band26-part22	15M	64QAM	26965	75RB#0	17.69	18.32

5.2. Occupied Bandwidth

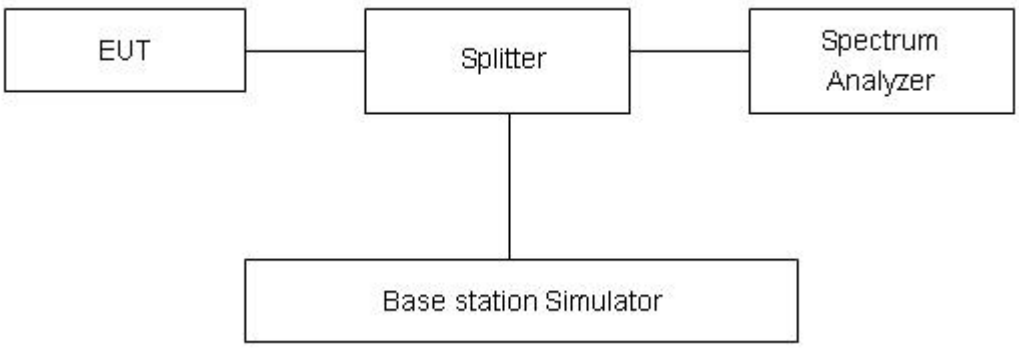
Ambient condition

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 51 kHz, VBW is set to 160 kHz for LTE Band 5/26 (1.4MHz),
RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 5 (3MHz/5MHz),
RBW is set to 300 kHz, VBW is set to 1 MHz for LTE Band 5 (10MHz),
RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 26 (3MHz/5MHz),
RBW is set to 300 kHz, VBW is set to 1 MHz for LTE Band 26 (10MHz/15MHz).
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 Result

LTE Band 5						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	1.4	20407	824.7	1.1905	2.026
			20525	836.5	1.1766	1.616
			20643	848.3	1.1650	1.779
		3	20415	825.5	2.8126	3.808
			20525	836.5	2.7858	3.469
			20635	847.5	2.7950	3.559
		5	20425	826.5	4.5386	5.515
			20525	836.5	4.5434	5.291
			20625	846.5	4.5653	5.427
		10	20450	829	9.0243	10.140
			20525	836.5	9.1076	10.390
			20600	844	9.0544	10.220
	16QAM	1.4	20407	824.7	1.2355	2.308
			20525	836.5	1.1480	1.580
			20643	848.3	1.1820	1.819
		3	20415	825.5	2.9252	5.038
			20525	836.5	2.7919	3.551
			20635	847.5	2.8067	3.652
		5	20425	826.5	4.5892	7.257
			20525	836.5	4.5693	5.408
			20625	846.5	4.5773	5.482
		10	20450	829	9.0642	10.510
			20525	836.5	9.1119	10.280
			20600	844	9.0613	10.590
	64QAM	1.4	20407	824.7	1.1230	1.537
			20525	836.5	1.1080	1.445
			20643	848.3	1.1210	1.445
		3	20415	825.5	2.7120	3.386
			20525	836.5	2.7230	3.348
			20635	847.5	2.7290	3.366

		5	20425	826.5	4.5240	5.265
			20525	836.5	4.5530	5.454
			20625	846.5	4.5580	5.259
		10	20450	829	8.9670	9.847
			20525	836.5	9.0000	10.094
			20600	844	8.9930	10.040

LTE Band 26						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	1.4	26797	824.7	1.2008	2.046
			26915	836.5	1.1573	1.586
			27033	848.3	1.1886	1.803
		3	26805	825.5	2.8178	3.785
			26915	836.5	2.7839	3.505
			27025	847.5	2.8043	3.478
		5	26815	826.5	4.5449	5.642
			26915	836.5	4.5622	5.396
			27015	846.5	4.5462	5.390
		10	26840	829	9.0502	10.330
			26915	836.5	9.0807	10.320
			26990	844	9.0900	10.330
		15	26865	831.5	13.5120	14.830
			26915	836.5	13.4950	14.680
			26965	841.5	13.4750	14.730
	16QAM	1.4	26797	824.7	1.2101	2.139
			26915	836.5	1.1796	1.601
			27033	848.3	1.1785	1.841
		3	26805	825.5	2.8691	5.390
			26915	836.5	2.8058	3.577
			27025	847.5	2.8634	3.558
		5	26815	826.5	4.6113	6.599
			26915	836.5	4.5433	5.285
			27015	846.5	4.5737	5.501
		10	26840	829	9.0628	10.230
			26915	836.5	9.0935	10.270
			26990	844	9.1002	11.040
		15	26865	831.5	13.5080	14.700
			26915	836.5	13.5570	14.790
			26965	841.5	13.4860	14.670
	64QAM	1.4	26797	824.7	1.1270	1.513

			26915	836.5	1.1020	1.446
			27033	848.3	1.1170	1.471
		3	26805	825.5	2.7190	3.472
			26915	836.5	2.7180	3.348
			27025	847.5	2.7300	3.493
		5	26815	826.5	4.5260	5.258
			26915	836.5	4.5490	5.217
			27015	846.5	4.5440	5.442
		10	26840	829	8.9640	9.924
			26915	836.5	9.0070	10.044
			26990	844	8.9840	9.776
		15	26865	831.5	13.4330	14.634
			26915	836.5	13.5390	14.566
			26965	841.5	13.4720	14.472

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 10MHz CH-Low

LTE Band 5 16QAM 5MHz CH-Middle

LTE Band 5 16QAM 10MHz CH-Middle

LTE Band 5 16QAM 5MHz CH-High

LTE Band 5 16QAM 10MHz CH-High

LTE Band 5 64QAM 1.4MHz CH-Low

LTE Band 5 64QAM 3MHz CH-Low

LTE Band 5 64QAM 1.4MHz CH-Middle

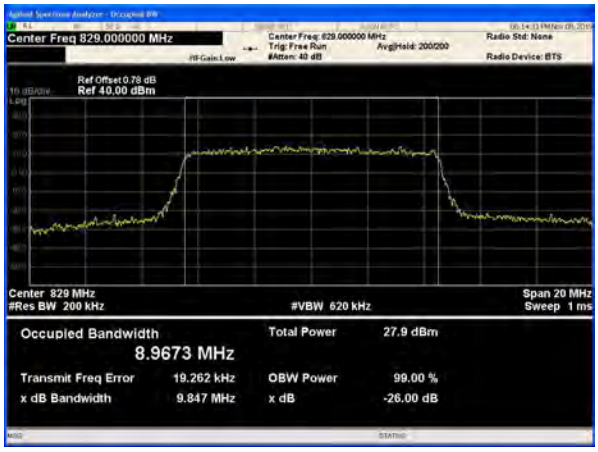
LTE Band 5 64QAM 3MHz CH-Middle

LTE Band 5 64QAM 1.4MHz CH-High

LTE Band 5 64QAM 3MHz CH-High

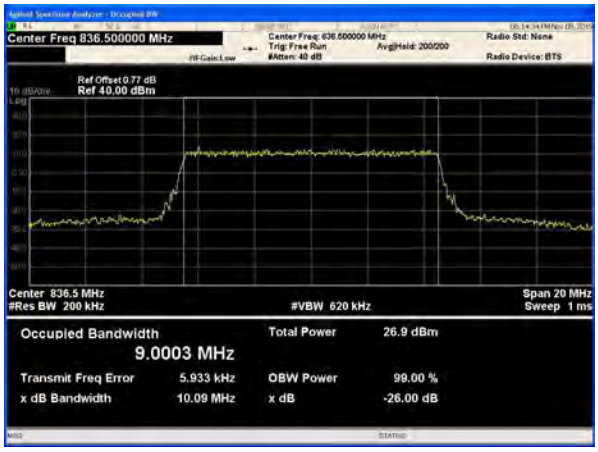
LTE Band 5 64QAM 5MHz CH-Low

LTE Band 5 64QAM 10MHz CH-Low



LTE Band 5 64QAM 5MHz CH-Middle

LTE Band 5 64QAM 10MHz CH-Middle



LTE Band 5 64QAM 5MHz CH-High

LTE Band 5 64QAM 10MHz CH-High

LTE Band 26 QPSK 1.4MHz CH-Low

LTE Band 26 QPSK 3MHz CH-Low

LTE Band 26 QPSK 1.4MHz CH-Middle

LTE Band 26 QPSK 3MHz CH-Middle

LTE Band 26 QPSK 1.4MHz CH-High

LTE Band 26 QPSK 3MHz CH-High

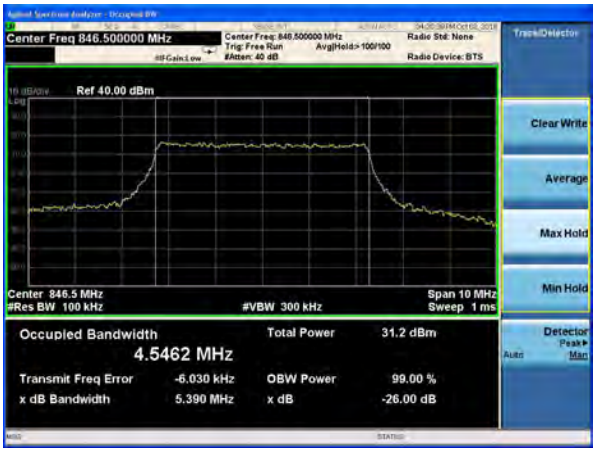
LTE Band 26 QPSK 5MHz CH-Low

LTE Band 26 QPSK 10MHz CH-Low

LTE Band 26 QPSK 5MHz CH-Middle

LTE Band 26 QPSK 10MHz CH-Middle

LTE Band 26 QPSK 5MHz CH-High



LTE Band 26 QPSK 10MHz CH-High

LTE Band 26 QPSK 15MHz CH-Low

LTE Band 26 16QAM 1.4MHz CH-Low

LTE Band 26 QPSK 15MHz CH-Middle

LTE Band 26 16QAM 1.4MHz CH-Middle

LTE Band 26 QPSK 15MHz CH-High

LTE Band 26 16QAM 1.4MHz CH-High

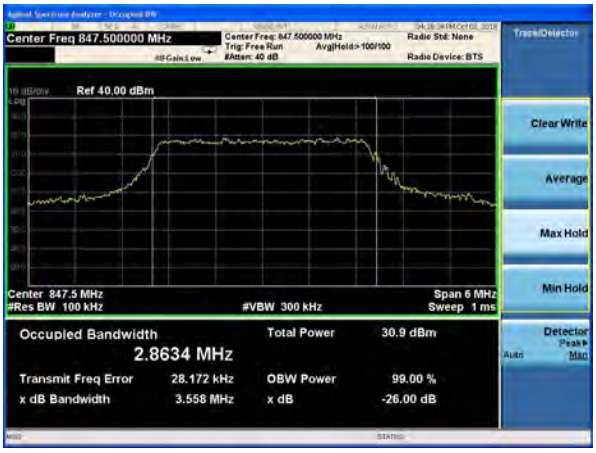
LTE Band 26 16QAM 3MHz CH-Low

LTE Band 26 16QAM 5MHz CH-Low

LTE Band 26 16QAM 3MHz CH-Middle

LTE Band 26 16QAM 5MHz CH-Middle

LTE Band 2616QAM 3MHz CH-High



LTE Band 26 16QAM 5MHz CH-High

LTE Band 26 16QAM 10MHz CH-Low

LTE Band 26 16QAM 15MHz CH-Low

LTE Band 26 16QAM 10MHz CH-Middle

LTE Band 26 16QAM 15MHz CH-Middle

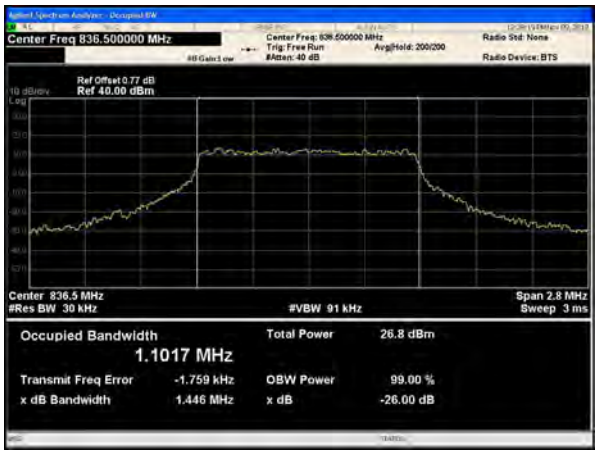
LTE Band 26 16QAM 10MHz CH-High

LTE Band 26 16QAM 15MHz CH-High

LTE Band 26 64QAM 1.4MHz CH-Low

LTE Band 26 64QAM 3MHz CH-Low

LTE Band 26 64QAM 1.4MHz CH-Middle



LTE Band 26 64QAM 3MHz CH-Middle

LTE Band 26 64QAM 1.4MHz CH-High

LTE Band 26 64QAM 3MHz CH-High

LTE Band 26 64QAM 5MHz CH-Low

LTE Band 26 64QAM 10MHz CH-Low

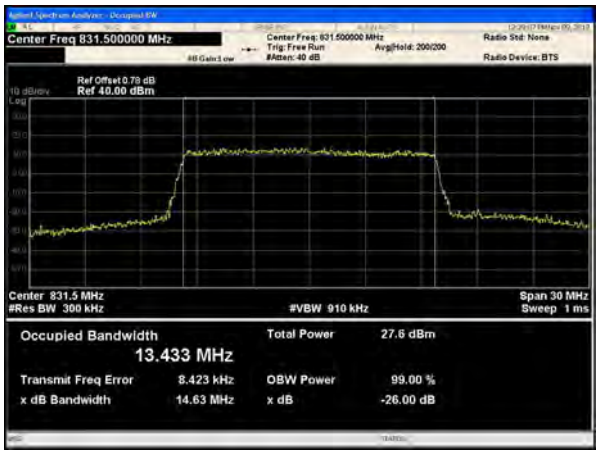
LTE Band 26 64QAM 5MHz CH-Middle

LTE Band 26 64QAM 10MHz CH-Middle

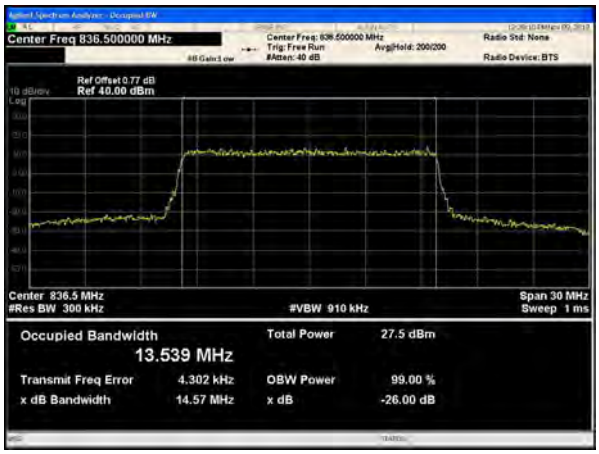
LTE Band 26 64QAM 5MHz CH-High

LTE Band 26 64QAM 10MHz CH-High

LTE Band 26 64QAM 15MHz CH-Low



LTE Band 26 64QAM 15MHz CH-Middle



LTE Band 26 64QAM 15MHz CH-High

5.3. Band Edge Compliance

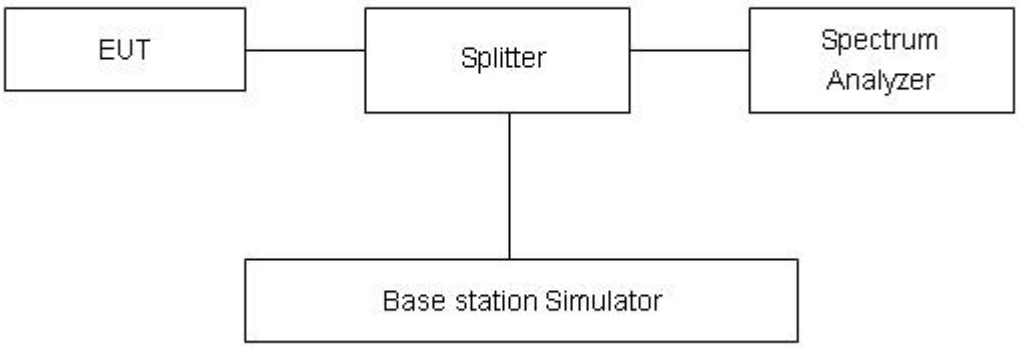
Ambient condition

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 15 kHz, VBW is set to 51 kHz for LTE Band 5/26 (1.4MHz),
RBW is set to 30 kHz, VBW is set to 100 kHz for LTE Band 5/26 (3MHz),
RBW is set to 51 kHz, VBW is set to 160 kHz for LTE Band 5/26 (5MHz),
RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 5/26 (10MHz),
RBW is set to 150 kHz, VBW is set to 510kHz for LTE Band 26 (15MHz).
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

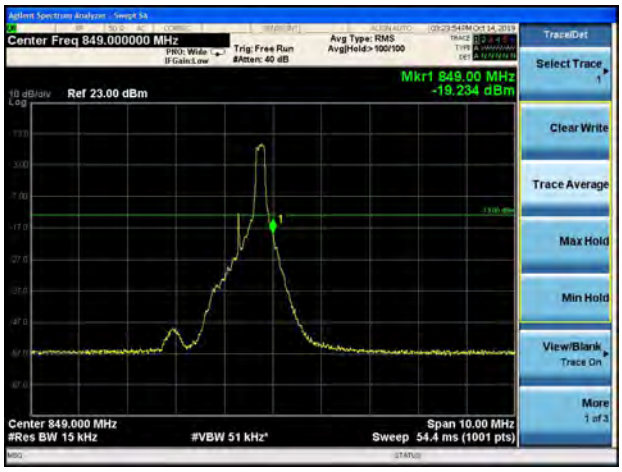
Measurement Uncertainty

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 Result:

LTE Band 5 QPSK 1.4MHz CH-Low 1RB

LTE Band 5 QPSK 1.4MHz CH-High 1RB

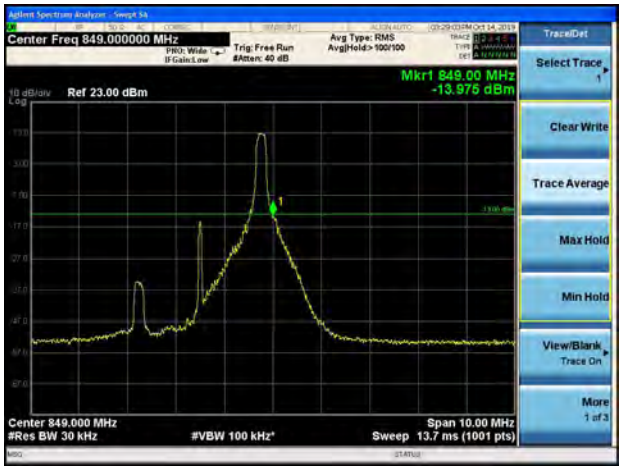


LTE Band 5 QPSK 1.4MHz CH-Low 100%RB

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

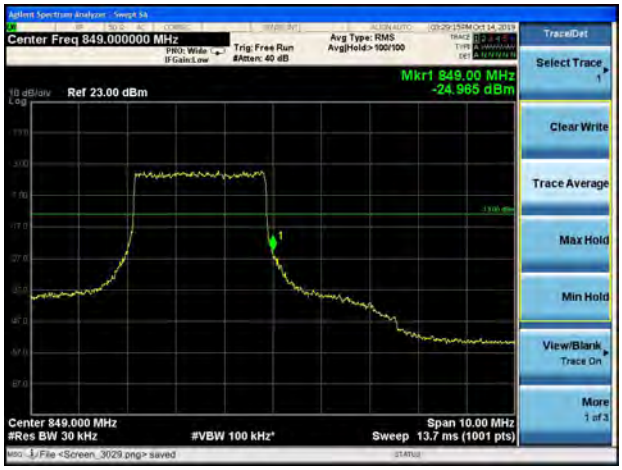
LTE Band 5 QPSK 3MHz CH-Low 1RB

LTE Band 5 QPSK 3MHz CH-High 1RB

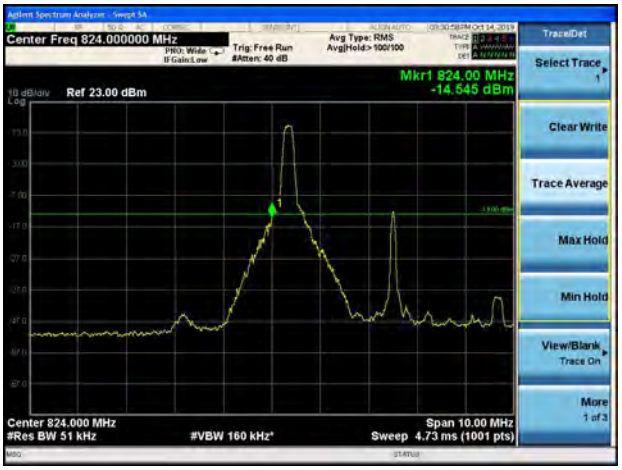


LTE Band 5 QPSK 3MHz CH-Low 100%RB

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



LTE Band 5 QPSK 5MHz CH-Low 1RB



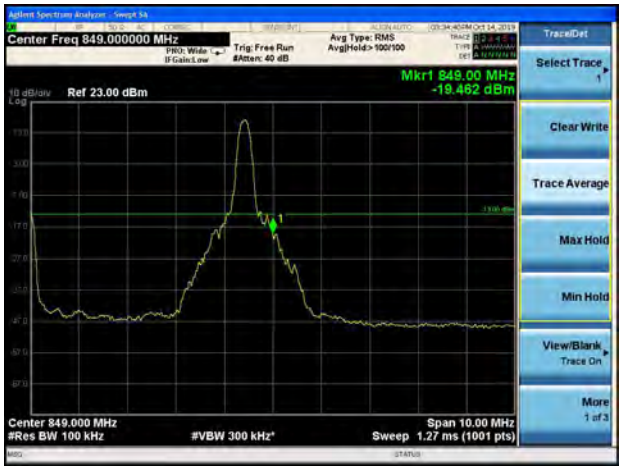
LTE Band 5 QPSK 5MHz CH-High 1RB

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

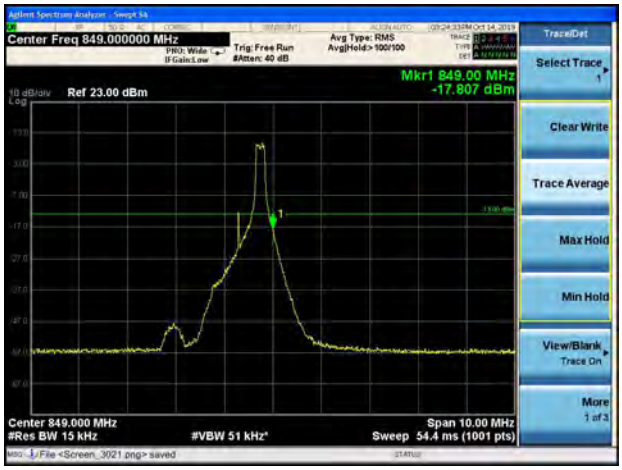


LTE Band 5 QPSK 10MHz CH-Low 100%RB

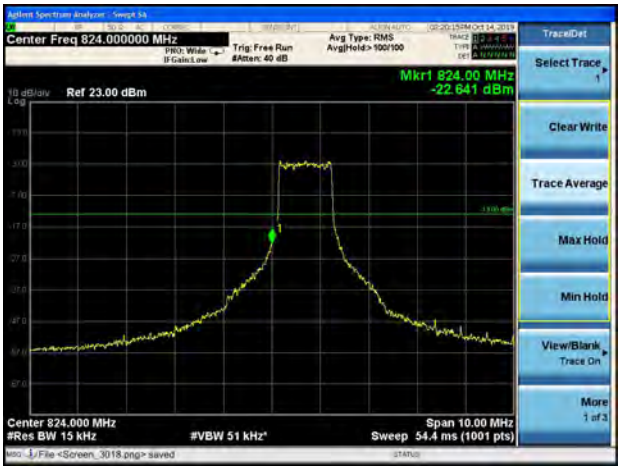
LTE Band 5 QPSK 10MHz CH-High 100%RB

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

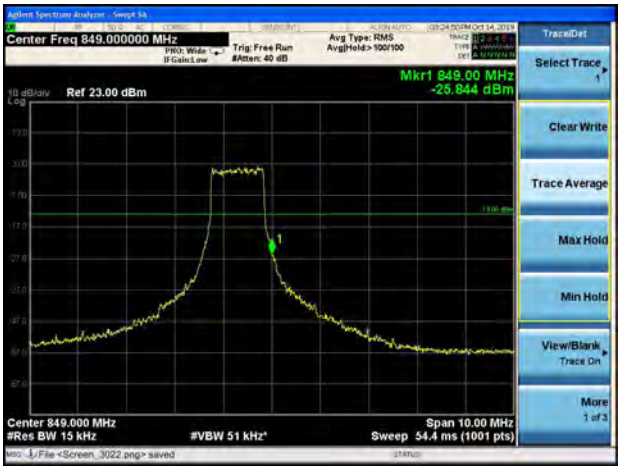
LTE Band 5 16QAM 1.4MHz CH-High 1RB



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

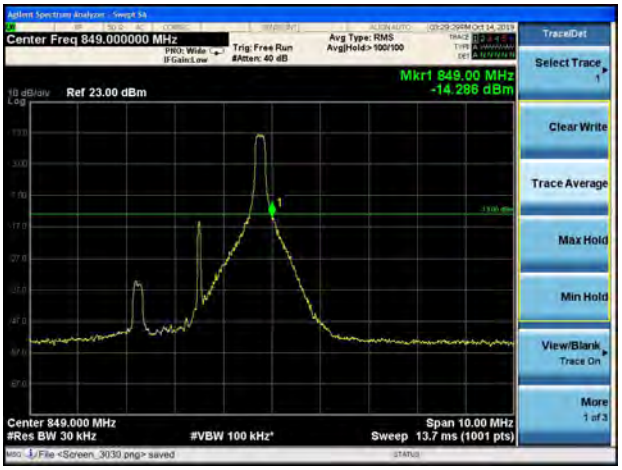


LTE Band 5 16QAM 1.4MHz CH-High 100%RB



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

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

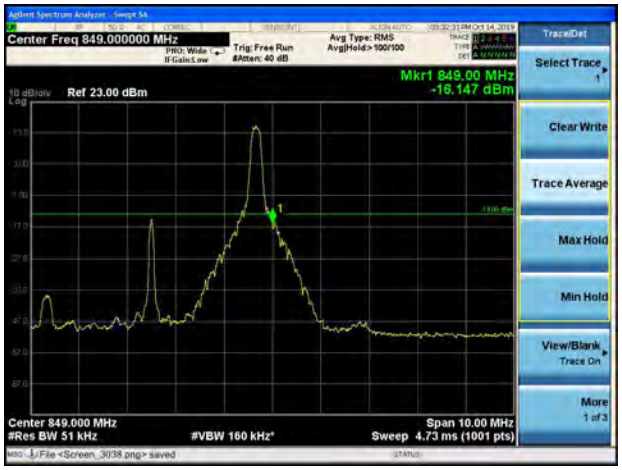


LTE Band 5 16QAM 3MHz CH-Low 100%RB

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

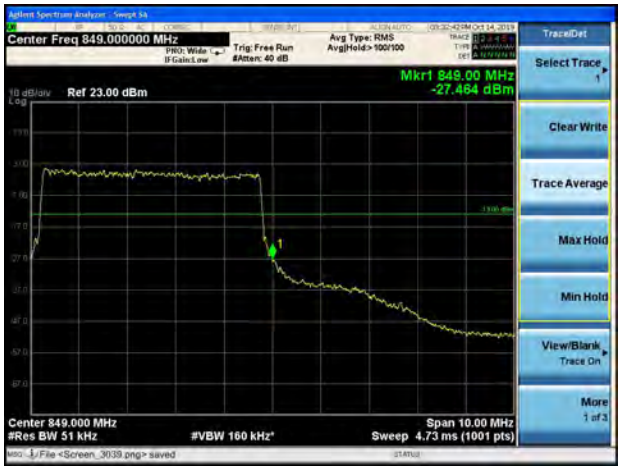
LTE Band 5 16QAM 5MHz CH-Low 1RB

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

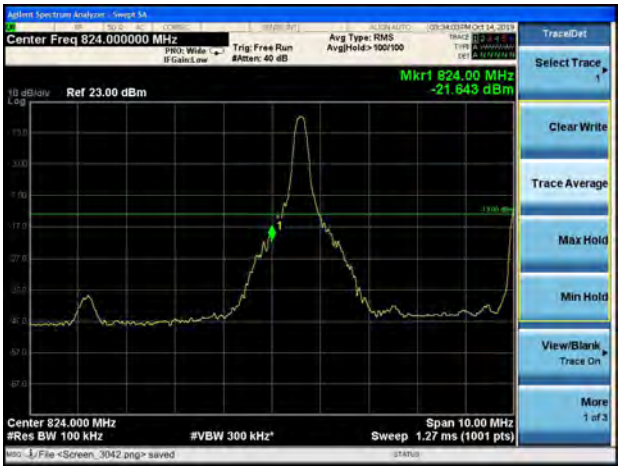


LTE Band 5 16QAM 5MHz CH-Low 100%RB

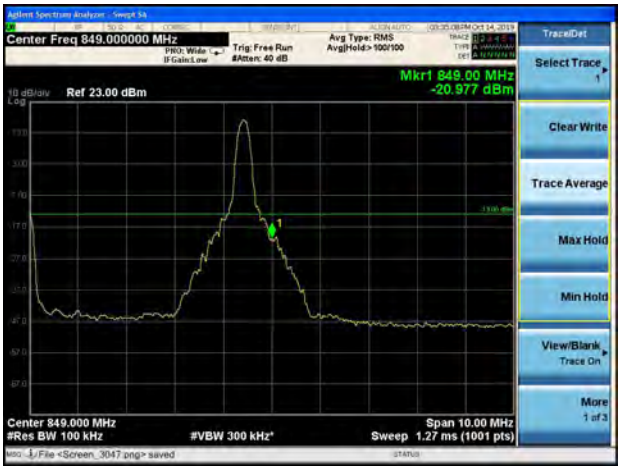
LTE Band 5 16QAM 5MHz CH-High 100%RB



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



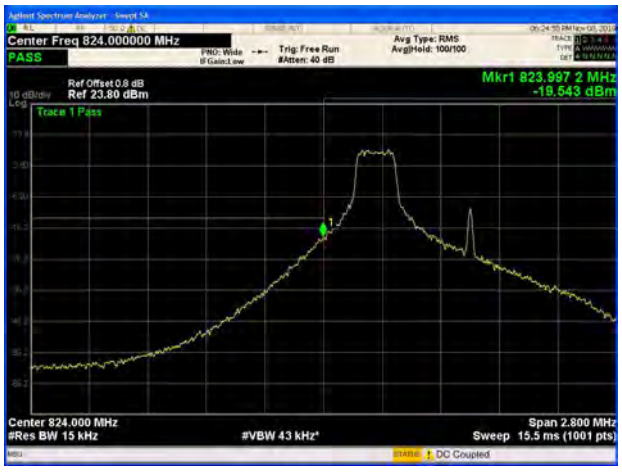
LTE Band 5 16QAM 10MHz CH-High 1RB



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

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

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

LTE Band 26 QPSK 1.4MHz CH-Low 1RB

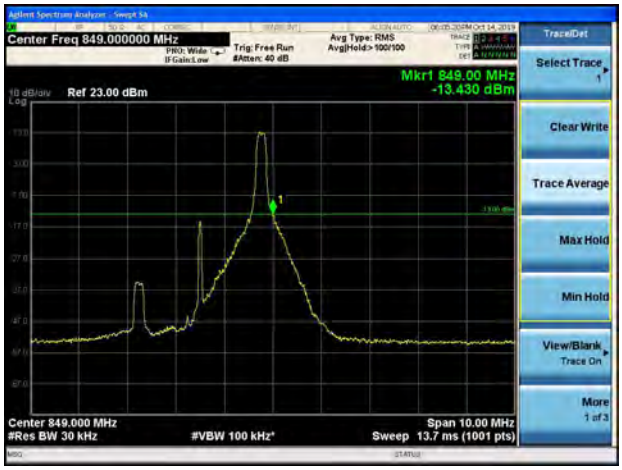
LTE Band 26 QPSK 1.4MHz CH-High 1RB

LTE Band 26 QPSK 1.4MHz CH-Low 100%RB

LTE Band 26 QPSK 1.4MHz CH-High 100%RB

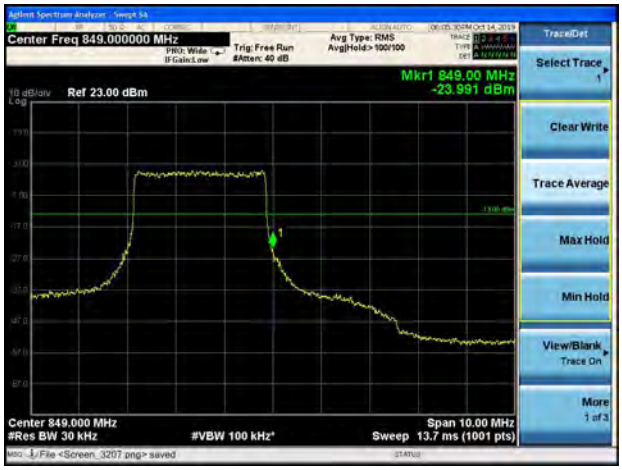
LTE Band 26 QPSK 3MHz CH-Low 1RB

LTE Band 26 QPSK 3MHz CH-High 1RB



LTE Band 26 QPSK 3MHz CH-Low 100%RB

LTE Band 26 QPSK 3MHz CH-High 100%RB

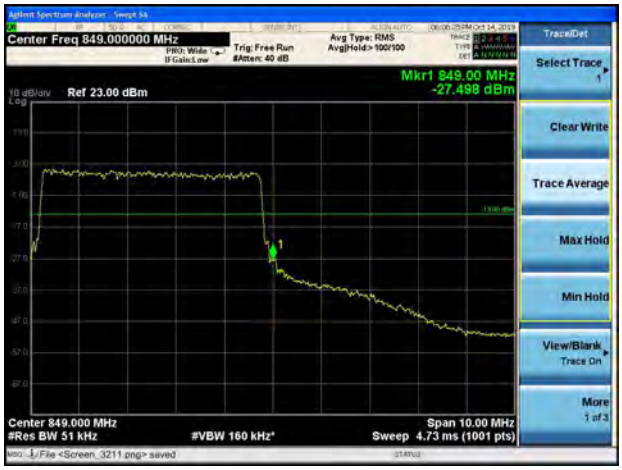


LTE Band 26 QPSK 5MHz CH-Low 1RB

LTE Band 26 QPSK 5MHz CH-High 1RB

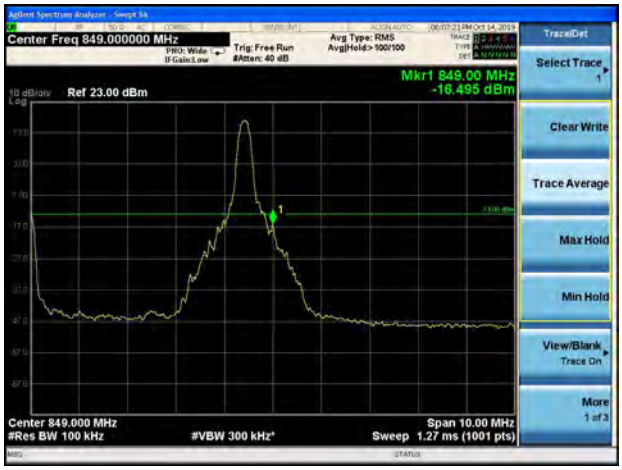
LTE Band 26 QPSK 5MHz CH-Low 100%RB

LTE Band 26 QPSK 5MHz CH-High 100%RB



LTE Band 26 QPSK 10MHz CH-Low 1RB

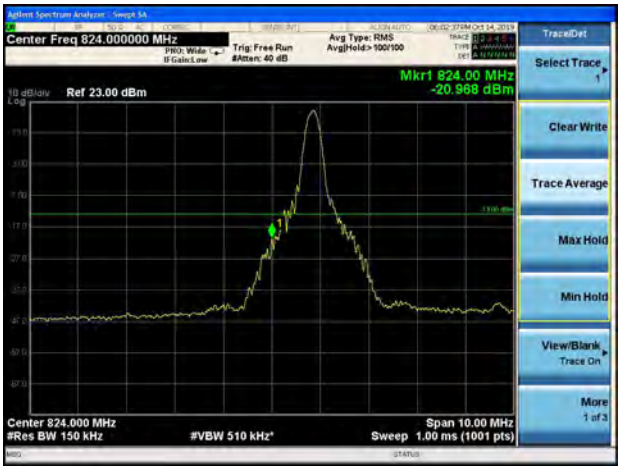
LTE Band 26 QPSK 10MHz CH-High 1RB



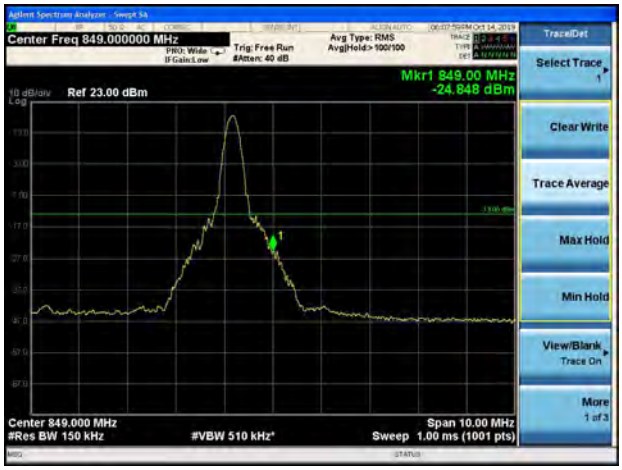
LTE Band 26 QPSK 10MHz CH-Low 100%RB

LTE Band 26 QPSK 10MHz CH-High 100%RB

LTE Band 26 QPSK 15MHz CH-Low 1RB



LTE Band 26 QPSK 15MHz CH-High 1RB

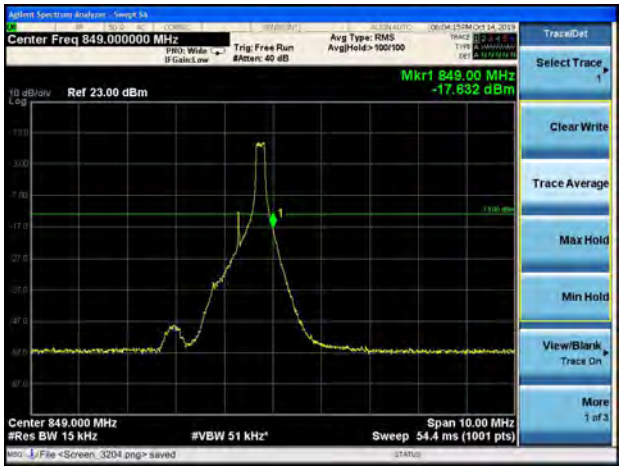


LTE Band 26 QPSK 15MHz CH-Low 100%RB

LTE Band 26 QPSK 15MHz CH-High 100%RB

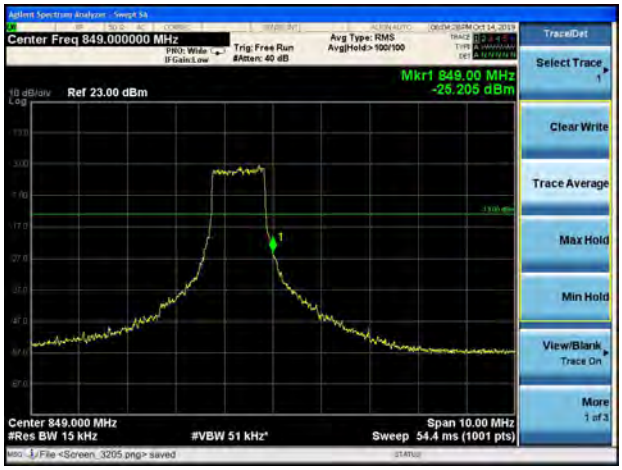
LTE Band 26 16QAM 1.4MHz CH-Low 1RB

LTE Band 26 16QAM 1.4MHz CH-High 1RB



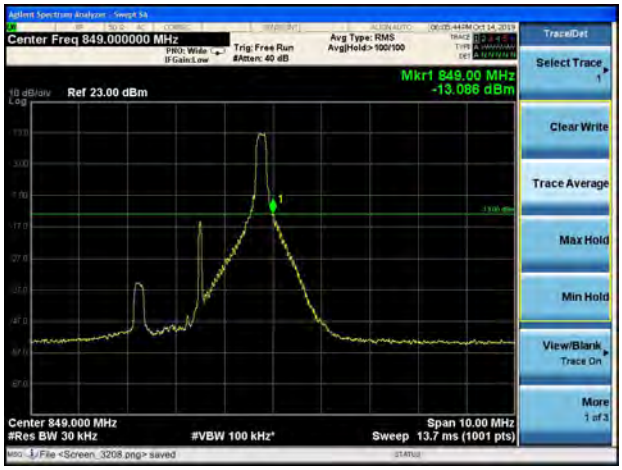
LTE Band 26 16QAM 1.4MHz CH-Low 100%RB

LTE Band 26 16QAM 1.4MHz CH-High 100%RB



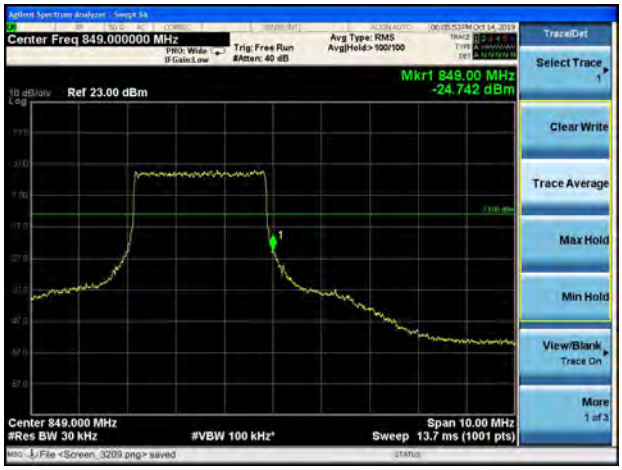
LTE Band 26 16QAM 3MHz CH-Low 1RB

LTE Band 2616QAM 3MHz CH-High 1RB

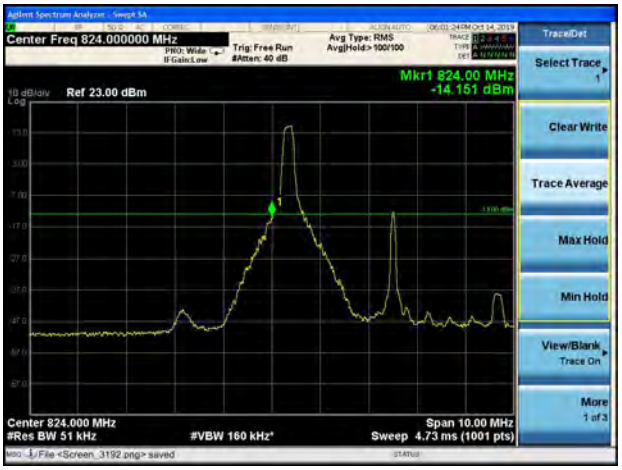


LTE Band 26 16QAM 3MHz CH-Low 100%RB

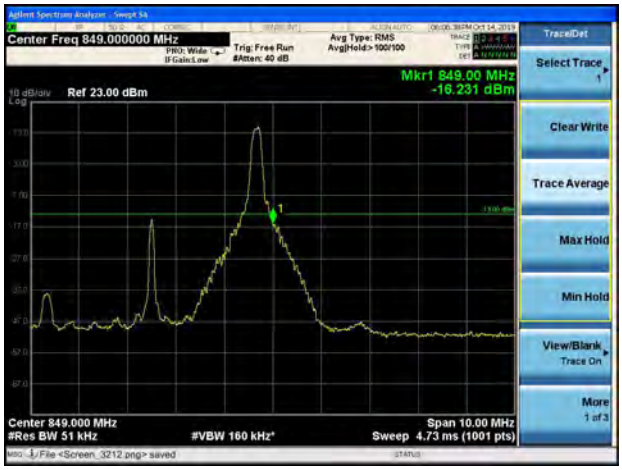
LTE Band 26 16QAM 3MHz CH-High 100%RB



LTE Band 26 16QAM 5MHz CH-Low 1RB



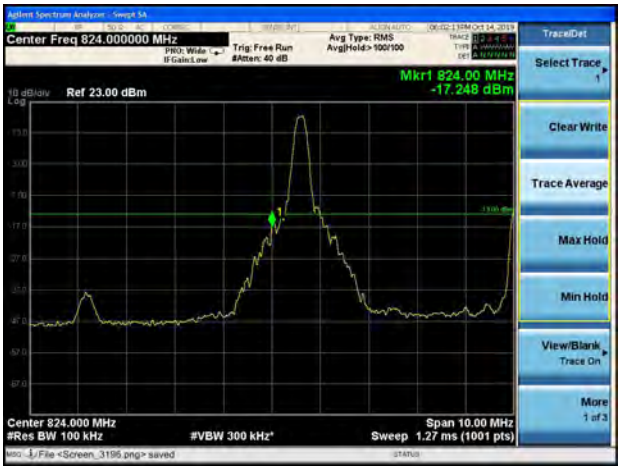
LTE Band 26 16QAM 5MHz CH-High 1RB



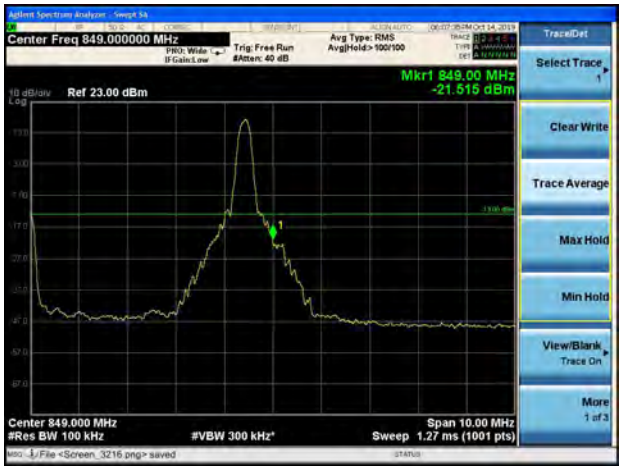
LTE Band 26 16QAM 5MHz CH-Low 100%RB

LTE Band 26 16QAM 5MHz CH-High 100%RB

LTE Band 26 16QAM 10MHz CH-Low 1RB



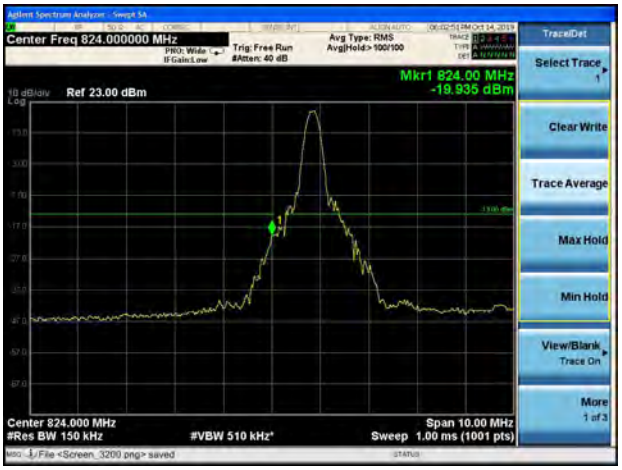
LTE Band 26 16QAM 10MHz CH-High 1RB



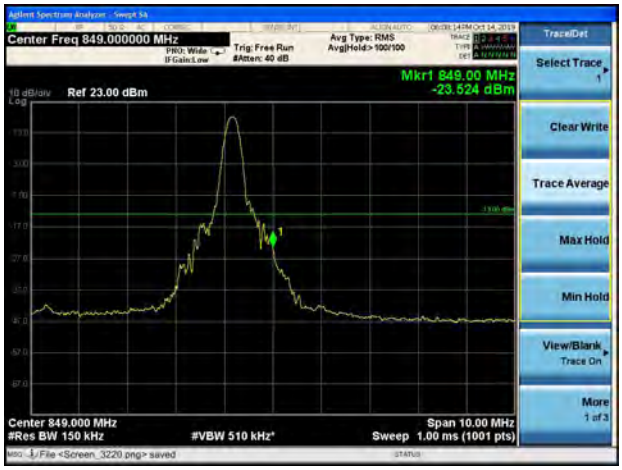
LTE Band 26 16QAM 10MHz CH-Low 100%RB

LTE Band 26 16QAM 10MHz CH-High 100%RB

LTE Band 26 16QAM 15MHz CH-Low 1RB



LTE Band 26 16QAM 15MHz CH-High 1RB



LTE Band 26 16QAM 15MHz CH-Low 100%RB

LTE Band 26 16QAM 15MHz CH-High 100%RB

LTE Band 26 64QAM 1.4MHz CH-Low 1RB

LTE Band 26 64QAM 1.4MHz CH-High 1RB

LTE Band 26 64QAM 1.4MHz CH-Low 100%RB

LTE Band 26 64QAM 1.4MHz CH-High 100%RB

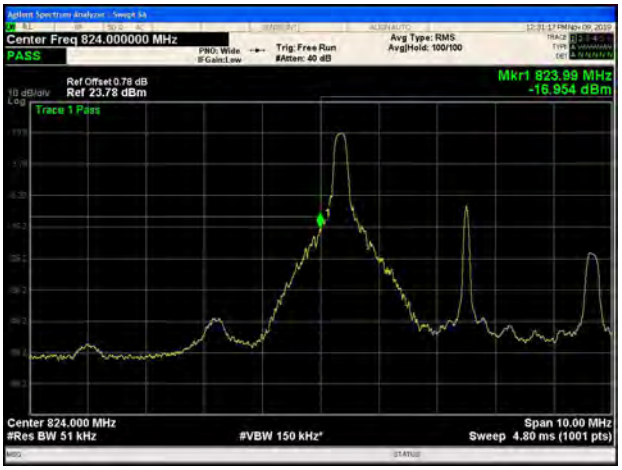
LTE Band 26 64QAM 3MHz CH-Low 1RB

LTE Band 26 64QAM 3MHz CH-High 1RB

LTE Band 26 64QAM 3MHz CH-Low 100%RB

LTE Band 26 64QAM 3MHz CH-High 100%RB

LTE Band 26 64QAM 5MHz CH-Low 1RB



LTE Band 26 64QAM 5MHz CH-High 1RB

LTE Band 26 64QAM 5MHz CH-Low 100%RB

LTE Band 26 64QAM 5MHz CH-High 100%RB

LTE Band 26 64QAM 10MHz CH-Low 1RB

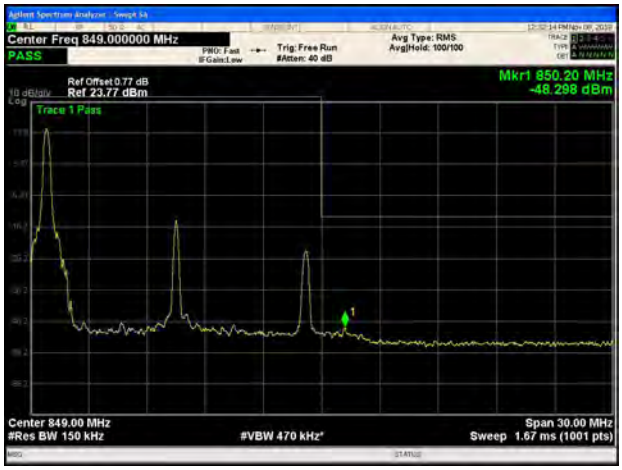
LTE Band 26 64QAM 10MHz CH-High 1RB

LTE Band 26 64QAM 10MHz CH-Low 100%RB

LTE Band 26 64QAM 10MHz CH-High 100%RB

LTE Band 26 64QAM 15MHz CH-Low 1RB

LTE Band 26 64QAM 15MHz CH-High 1RB



LTE Band 26 64QAM 15MHz CH-Low 100%RB	LTE Band 26 64QAM 15MHz CH-High 100%RB
	

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

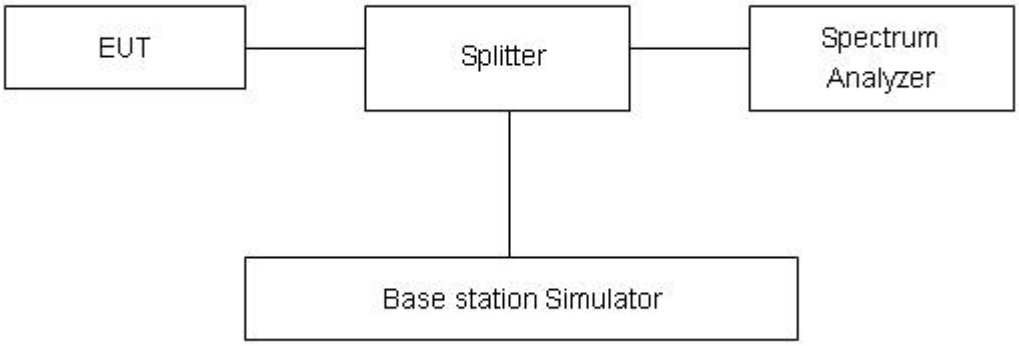
Ambient condition

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

LTE Band 5								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	20407	824.7	27.39	23.87	3.52	≤13	PASS
		20525	836.5	27.31	21.93	5.38	≤13	PASS
		20643	848.3	26.84	22.82	4.02	≤13	PASS
	3	20415	825.5	27.87	24.06	3.81	≤13	PASS
		20525	836.5	27.42	21.94	5.48	≤13	PASS
		20635	847.5	27.28	22.35	4.93	≤13	PASS
	5	20425	826.5	27.71	23.82	3.89	≤13	PASS
		20525	836.5	27.06	21.58	5.48	≤13	PASS
		20625	846.5	27.27	22.10	5.17	≤13	PASS
	10	20450	829	27.84	23.35	4.49	≤13	PASS
		20525	836.5	27.55	22.24	5.31	≤13	PASS
		20600	844	27.80	23.16	4.64	≤13	PASS
16QAM	1.4	20407	824.7	27.43	23.67	3.76	≤13	PASS
		20525	836.5	27.88	21.96	5.92	≤13	PASS
		20643	848.3	26.95	22.66	4.29	≤13	PASS
	3	20415	825.5	27.97	23.86	4.11	≤13	PASS
		20525	836.5	27.95	21.93	6.02	≤13	PASS
		20635	847.5	27.65	22.29	5.36	≤13	PASS
	5	20425	826.5	27.81	23.63	4.18	≤13	PASS
		20525	836.5	27.46	21.55	5.91	≤13	PASS
		20625	846.5	27.63	22.11	5.52	≤13	PASS
	10	20450	829	28.08	23.23	4.85	≤13	PASS
		20525	836.5	28.06	22.37	5.69	≤13	PASS
		20600	844	28.09	23.06	5.03	≤13	PASS
64QAM	1.4	20407	824.7	26.40	21.17	5.23	≤13	PASS
		20525	836.5	25.07	18.64	6.43	≤13	PASS
		20643	848.3	25.92	19.85	6.07	≤13	PASS
	3	20415	825.5	26.22	21.03	5.19	≤13	PASS
		20525	836.5	24.93	18.66	6.27	≤13	PASS
		20635	847.5	25.44	19.30	6.14	≤13	PASS
	5	20425	826.5	26.11	20.80	5.31	≤13	PASS
		20525	836.5	24.68	18.38	6.30	≤13	PASS
		20625	846.5	25.42	19.23	6.19	≤13	PASS
	10	20450	829	25.95	20.19	5.76	≤13	PASS
		20525	836.5	25.18	18.96	6.22	≤13	PASS
		20600	844	26.49	20.52	5.97	≤13	PASS

LTE Band 26								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	26797	824.7	27.43	23.93	3.50	≤13	PASS
		26915	836.5	27.49	22.08	5.41	≤13	PASS
		27033	848.3	26.92	22.89	4.03	≤13	PASS
	3	26805	825.5	27.94	24.11	3.83	≤13	PASS
		26915	836.5	27.33	21.91	5.42	≤13	PASS
		27025	847.5	27.33	22.35	4.98	≤13	PASS
	5	26815	826.5	27.70	23.83	3.87	≤13	PASS
		26915	836.5	27.10	21.64	5.46	≤13	PASS
		27015	846.5	27.31	22.10	5.21	≤13	PASS
	10	26840	829	27.87	23.40	4.47	≤13	PASS
		26915	836.5	27.63	22.34	5.29	≤13	PASS
		26990	844	27.85	23.23	4.62	≤13	PASS
	15	26865	831.5	27.73	23.00	4.73	≤13	PASS
		26915	836.5	27.72	22.80	4.92	≤13	PASS
		26965	841.5	27.88	22.96	4.92	≤13	PASS
16QAM	1.4	26797	824.7	27.48	23.70	3.78	≤13	PASS
		26915	836.5	27.92	22.09	5.83	≤13	PASS
		27033	848.3	27.07	22.80	4.27	≤13	PASS
	3	26805	825.5	28.04	23.95	4.09	≤13	PASS
		26915	836.5	28.07	22.08	5.99	≤13	PASS
		27025	847.5	27.76	22.41	5.35	≤13	PASS
	5	26815	826.5	27.80	23.66	4.14	≤13	PASS
		26915	836.5	27.54	21.64	5.90	≤13	PASS
		27015	846.5	27.64	22.09	5.55	≤13	PASS
	10	26840	829	28.10	23.30	4.80	≤13	PASS
		26915	836.5	28.04	22.30	5.74	≤13	PASS
		26990	844	28.15	23.14	5.01	≤13	PASS
	15	26865	831.5	27.92	22.95	4.97	≤13	PASS
		26915	836.5	27.92	22.76	5.16	≤13	PASS
		26965	841.5	28.08	22.89	5.19	≤13	PASS
64QAM	1.4	26797	824.7	26.22	21.12	5.10	≤13	PASS
		26915	836.5	25.11	18.92	6.19	≤13	PASS
		27033	848.3	25.99	20.06	5.93	≤13	PASS
	3	26805	825.5	26.39	21.32	5.07	≤13	PASS
		26915	836.5	24.90	18.65	6.25	≤13	PASS
		27025	847.5	25.90	19.72	6.18	≤13	PASS

	5	26815	826.5	26.36	21.13	5.23	≤13	PASS
		26915	836.5	24.64	18.42	6.22	≤13	PASS
		27015	846.5	25.80	19.56	6.24	≤13	PASS
	10	26840	829	26.08	20.28	5.80	≤13	PASS
		26915	836.5	25.29	19.12	6.17	≤13	PASS
		26990	844	26.46	20.54	5.92	≤13	PASS
	15	26865	831.5	25.66	19.63	6.03	≤13	PASS
		26915	836.5	25.79	19.56	6.23	≤13	PASS
		26965	841.5	26.35	20.26	6.09	≤13	PASS

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 -40°C to +70°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 -40°C to +70°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements. Frequency Stability (Voltage Variation)

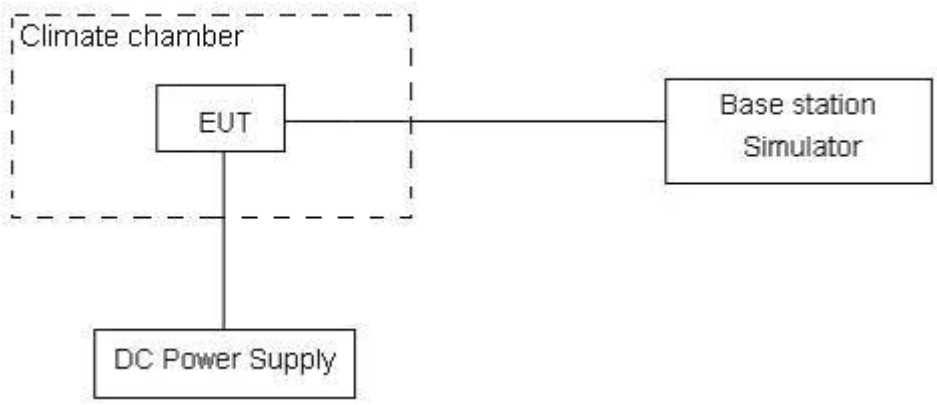
The frequency stability shall be measured with variation of primary supply voltage as follows:

(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

(2) For hand carried, battery powered equipment, reduce primary supply voltage 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 3V and 3.6V, with a nominal voltage of 3.3V.

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 Result

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	16QAM	QPSK	64QAM	16QAM	QPSK	64QAM	
Normal（25℃）	Normal	10.70	12.32	16.03	0.00569	0.00655	0.00853	PASS
Extreme（70℃）		4.12	2.07	14.65	0.00219	0.00110	0.00779	PASS
Extreme（60℃）		10.61	5.85	14.07	0.00564	0.00311	0.00748	PASS
Extreme（50℃）		13.65	7.95	1.61	0.00726	0.00423	0.00086	PASS
Extreme（40℃）		4.78	9.54	6.41	0.00254	0.00507	0.00341	PASS
Extreme（30℃）		13.83	5.72	14.81	0.00735	0.00304	0.00788	PASS
Extreme（20℃）		12.42	16.84	9.00	0.00661	0.00896	0.00479	PASS
Extreme（10℃）		7.30	5.30	13.92	0.00388	0.00282	0.00740	PASS
Extreme（0℃）		5.09	3.02	16.88	0.00271	0.00161	0.00898	PASS
Extreme（-10℃）		5.10	11.88	7.85	0.00271	0.00632	0.00417	PASS
Extreme（-20℃）		6.73	4.65	9.69	0.00358	0.00247	0.00515	PASS
Extreme（-30℃）		5.10	2.22	17.76	0.00271	0.00118	0.00945	PASS
Extreme（-40℃）		16.88	8.91	7.76	0.00898	0.00474	0.00413	PASS
25℃	LV	6.93	14.08	5.83	0.00368	0.00749	0.00310	PASS
	HV	16.27	10.65	5.49	0.00865	0.00567	0.00292	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	16QAM	QPSK	64QAM	16QAM	QPSK	64QAM	
Normal（25℃）	Normal	9.47	12.89	13.26	0.00504	0.00686	0.00706	PASS
Extreme（70℃）		2.80	5.93	6.53	0.00149	0.00315	0.00348	PASS
Extreme（60℃）		1.22	1.05	11.64	0.00065	0.00056	0.00619	PASS
Extreme（50℃）		3.90	15.65	10.86	0.00208	0.00833	0.00578	PASS
Extreme（40℃）		5.62	9.33	4.65	0.00299	0.00496	0.00247	PASS
Extreme（30℃）		10.72	15.72	17.83	0.00570	0.00836	0.00948	PASS
Extreme（20℃）		2.97	5.44	5.07	0.00158	0.00289	0.00270	PASS
Extreme（10℃）		9.17	16.12	13.33	0.00488	0.00857	0.00709	PASS
Extreme（0℃）		16.07	10.29	7.17	0.00855	0.00548	0.00381	PASS
Extreme（-10℃）		3.90	17.55	10.39	0.00208	0.00933	0.00553	PASS
Extreme（-20℃）		17.38	5.65	6.50	0.00924	0.00300	0.00346	PASS
Extreme（-30℃）		1.60	6.79	7.85	0.00085	0.00361	0.00417	PASS
Extreme（-40℃）		10.55	4.58	4.67	0.00561	0.00243	0.00248	PASS
25℃	LV	6.00	11.76	13.68	0.00319	0.00625	0.00728	PASS
	HV	4.52	14.44	6.68	0.00240	0.00768	0.00355	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	16QAM	QPSK	64QAM	16QAM	QPSK	64QAM	
Normal（25℃）	Normal	14.65	14.61	3.12	0.00779	0.00777	0.00166	PASS
Extreme（70℃）		16.95	17.14	9.54	0.00902	0.00912	0.00507	PASS
Extreme（60℃）		15.01	16.70	2.60	0.00798	0.00889	0.00138	PASS
Extreme（50℃）		13.57	14.67	11.31	0.00722	0.00780	0.00601	PASS
Extreme（40℃）		5.96	12.54	13.34	0.00317	0.00667	0.00710	PASS
Extreme（30℃）		11.43	4.74	2.56	0.00608	0.00252	0.00136	PASS
Extreme（20℃）		14.55	15.44	4.04	0.00774	0.00821	0.00215	PASS
Extreme（10℃）		4.56	3.87	1.86	0.00242	0.00206	0.00099	PASS
Extreme（0℃）		8.32	16.50	8.56	0.00443	0.00878	0.00455	PASS
Extreme（-10℃）		12.23	2.76	12.05	0.00651	0.00147	0.00641	PASS
Extreme（-20℃）		16.42	14.89	14.11	0.00873	0.00792	0.00750	PASS
Extreme（-30℃）		17.69	5.49	15.30	0.00941	0.00292	0.00814	PASS
Extreme（-40℃）		12.46	14.91	12.91	0.00663	0.00793	0.00686	PASS
25℃	LV	7.57	15.82	16.53	0.00403	0.00842	0.00879	PASS
	HV	16.12	4.65	9.78	0.00858	0.00247	0.00520	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	16QAM	QPSK	64QAM	16QAM	QPSK	64QAM	
Normal（25℃）	Normal	4.23	4.74	16.11	0.00225	0.00252	0.00857	PASS
Extreme（70℃）		5.87	14.91	16.91	0.00312	0.00793	0.00900	PASS
Extreme（60℃）		3.03	13.44	11.45	0.00161	0.00715	0.00609	PASS
Extreme（50℃）		1.00	4.13	10.24	0.00053	0.00220	0.00545	PASS
Extreme（40℃）		2.74	8.87	14.83	0.00146	0.00472	0.00789	PASS
Extreme（30℃）		10.68	13.94	16.56	0.00568	0.00741	0.00881	PASS
Extreme（20℃）		8.65	3.40	6.53	0.00460	0.00181	0.00347	PASS
Extreme（10℃）		17.95	6.92	1.40	0.00955	0.00368	0.00074	PASS
Extreme（0℃）		11.15	16.62	3.38	0.00593	0.00884	0.00180	PASS
Extreme（-10℃）		5.95	6.74	16.95	0.00317	0.00358	0.00902	PASS
Extreme（-20℃）		4.67	14.55	4.87	0.00249	0.00774	0.00259	PASS
Extreme（-30℃）		17.99	16.43	17.99	0.00957	0.00874	0.00957	PASS
Extreme（-40℃）		6.30	5.07	17.77	0.00335	0.00270	0.00945	PASS
25℃	LV	12.58	13.05	10.68	0.00669	0.00694	0.00568	PASS
	HV	4.77	1.03	3.81	0.00254	0.00055	0.00203	PASS

LTE Band 26								
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	16QAM	QPSK	64QAM	16QAM	QPSK	64QAM	
Normal（25℃）	Normal	12.32	16.22	5.01	0.00656	0.00863	0.00267	PASS
Extreme（70℃）		12.38	8.56	12.16	0.00658	0.00455	0.00647	PASS
Extreme（60℃）		2.35	15.26	14.53	0.00125	0.00812	0.00773	PASS
Extreme（50℃）		17.79	9.04	4.91	0.00946	0.00481	0.00261	PASS
Extreme（40℃）		10.40	14.24	3.85	0.00553	0.00758	0.00205	PASS
Extreme（30℃）		9.70	14.92	8.62	0.00516	0.00794	0.00459	PASS
Extreme（20℃）		3.77	15.82	11.48	0.00201	0.00841	0.00611	PASS
Extreme（10℃）		9.89	15.95	3.53	0.00526	0.00848	0.00188	PASS
Extreme（0℃）		1.46	15.92	9.27	0.00077	0.00847	0.00493	PASS
Extreme（-10℃）		6.62	12.93	6.45	0.00352	0.00688	0.00343	PASS
Extreme（-20℃）		5.66	12.63	12.21	0.00301	0.00672	0.00650	PASS
Extreme（-30℃）		10.01	7.32	2.90	0.00533	0.00389	0.00154	PASS
Extreme（-40℃）		1.31	17.31	6.19	0.00070	0.00921	0.00329	PASS
25℃	LV	11.35	6.85	10.11	0.00603	0.00364	0.00538	PASS
	HV	10.63	11.75	5.46	0.00566	0.00625	0.00291	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	16QAM	QPSK	64QAM	16QAM	QPSK	64QAM	
Normal（25℃）	Normal	15.45	9.63	5.12	0.00822	0.00512	0.00272	PASS
Extreme（70℃）		4.52	15.08	11.20	0.00240	0.00802	0.00596	PASS
Extreme（60℃）		12.88	16.59	7.62	0.00685	0.00882	0.00405	PASS
Extreme（50℃）		17.26	8.83	1.12	0.00918	0.00470	0.00059	PASS
Extreme（40℃）		5.52	10.14	2.10	0.00294	0.00540	0.00112	PASS
Extreme（30℃）		17.52	11.13	7.78	0.00932	0.00592	0.00414	PASS
Extreme（20℃）		2.17	14.37	11.42	0.00116	0.00764	0.00607	PASS
Extreme（10℃）		14.62	16.39	8.52	0.00778	0.00872	0.00453	PASS
Extreme（0℃）		15.92	5.18	13.20	0.00847	0.00276	0.00702	PASS
Extreme（-10℃）		11.71	10.99	4.44	0.00623	0.00585	0.00236	PASS
Extreme（-20℃）		16.90	4.41	17.87	0.00899	0.00234	0.00950	PASS
Extreme（-30℃）		3.59	5.82	17.27	0.00191	0.00310	0.00918	PASS
Extreme（-40℃）		10.77	11.44	5.81	0.00573	0.00609	0.00309	PASS
25℃	LV	5.17	6.64	3.90	0.00275	0.00353	0.00207	PASS
	HV	13.84	14.72	14.23	0.00736	0.00783	0.00757	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	16QAM	QPSK	64QAM	16QAM	QPSK	64QAM	
Normal（25℃）	Normal	3.31	9.22	13.48	0.00176	0.00490	0.00717	PASS
Extreme（70℃）		15.40	8.64	17.63	0.00819	0.00460	0.00938	PASS
Extreme（60℃）		13.10	5.57	6.28	0.00697	0.00296	0.00334	PASS
Extreme（50℃）		2.97	10.24	12.32	0.00158	0.00545	0.00656	PASS
Extreme（40℃）		13.06	3.48	4.49	0.00694	0.00185	0.00239	PASS
Extreme（30℃）		17.57	1.03	11.33	0.00935	0.00055	0.00603	PASS
Extreme（20℃）		10.04	3.48	5.07	0.00534	0.00185	0.00270	PASS
Extreme（10℃）		7.96	13.79	15.41	0.00423	0.00734	0.00820	PASS
Extreme（0℃）		9.38	10.48	12.65	0.00499	0.00557	0.00673	PASS
Extreme（-10℃）		5.14	14.44	15.69	0.00274	0.00768	0.00835	PASS
Extreme（-20℃）		5.87	7.72	7.36	0.00312	0.00411	0.00392	PASS
Extreme（-30℃）		13.64	9.58	17.84	0.00726	0.00509	0.00949	PASS
Extreme（-40℃）		9.21	11.15	6.94	0.00490	0.00593	0.00369	PASS
25℃	LV	6.02	2.67	14.81	0.00320	0.00142	0.00788	PASS
	HV	16.49	6.11	11.94	0.00877	0.00325	0.00635	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	16QAM	QPSK	64QAM	16QAM	QPSK	64QAM	
Normal（25℃）	Normal	3.65	1.47	15.00	0.00194	0.00078	0.00798	PASS
Extreme（70℃）		4.42	6.20	1.33	0.00235	0.00330	0.00071	PASS
Extreme（60℃）		9.73	7.37	1.97	0.00517	0.00392	0.00105	PASS
Extreme（50℃）		9.91	9.58	2.87	0.00527	0.00510	0.00153	PASS
Extreme（40℃）		17.70	9.37	16.86	0.00941	0.00498	0.00897	PASS
Extreme（30℃）		6.50	13.47	7.38	0.00346	0.00717	0.00392	PASS
Extreme（20℃）		9.28	14.12	7.13	0.00493	0.00751	0.00379	PASS
Extreme（10℃）		15.64	9.37	13.41	0.00832	0.00498	0.00713	PASS
Extreme（0℃）		15.26	10.58	1.04	0.00812	0.00563	0.00055	PASS
Extreme（-10℃）		4.45	4.88	7.49	0.00237	0.00259	0.00398	PASS
Extreme（-20℃）		13.60	1.82	1.11	0.00723	0.00097	0.00059	PASS
Extreme（-30℃）		13.82	2.80	11.07	0.00735	0.00149	0.00589	PASS
Extreme（-40℃）		9.59	6.83	14.65	0.00510	0.00364	0.00779	PASS
25℃	LV	3.90	12.09	7.15	0.00207	0.00643	0.00380	PASS
	HV	17.01	3.16	1.42	0.00905	0.00168	0.00075	PASS

Condition		Freq. Error (Hz)	Freq. Error (Hz)	Freq. Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	15MHz							
Temperature	Voltage	16QAM	QPSK	64QAM	16QAM	QPSK	64QAM	
Normal（25℃）	Normal	15.51	15.41	7.30	0.00825	0.00820	0.00388	PASS
Extreme（70℃）		8.17	10.40	11.12	0.00435	0.00553	0.00591	PASS
Extreme（60℃）		8.84	2.29	14.64	0.00470	0.00122	0.00779	PASS
Extreme（50℃）		16.29	7.93	2.25	0.00867	0.00422	0.00120	PASS
Extreme（40℃）		9.56	2.90	14.58	0.00509	0.00154	0.00775	PASS
Extreme（30℃）		13.80	15.44	11.86	0.00734	0.00821	0.00631	PASS
Extreme（20℃）		3.49	14.48	10.98	0.00185	0.00770	0.00584	PASS
Extreme（10℃）		8.92	3.66	5.24	0.00475	0.00195	0.00279	PASS
Extreme（0℃）		10.01	12.84	17.19	0.00533	0.00683	0.00914	PASS
Extreme（-10℃）		3.80	13.70	13.87	0.00202	0.00729	0.00738	PASS
Extreme（-20℃）		15.68	4.51	11.12	0.00834	0.00240	0.00592	PASS
Extreme（-30℃）		10.36	16.58	1.85	0.00551	0.00882	0.00098	PASS
Extreme（-40℃）		15.09	4.33	1.33	0.00803	0.00230	0.00071	PASS
25℃	LV	11.14	12.51	5.12	0.00593	0.00665	0.00272	PASS
	HV	12.91	3.40	12.23	0.00687	0.00181	0.00650	PASS

5.6. Spurious Emissions at Antenna Terminals

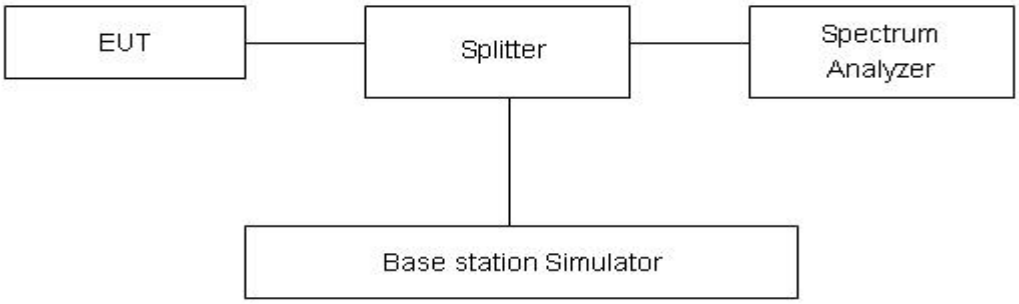
Ambient condition

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.
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.

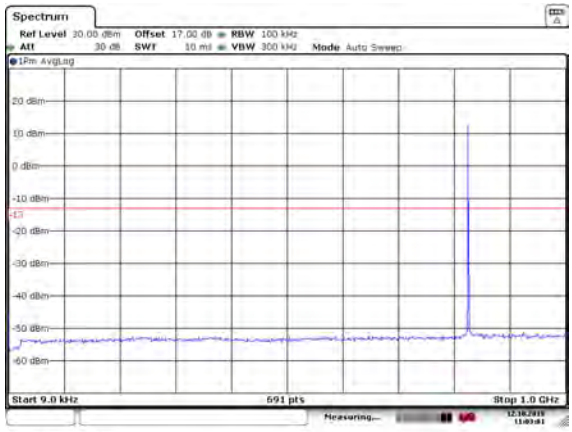
Frequency	Uncertainty
9kHz-1GHz	0.684 dB
1GHz-18GHz	1.407 dB

Test Result

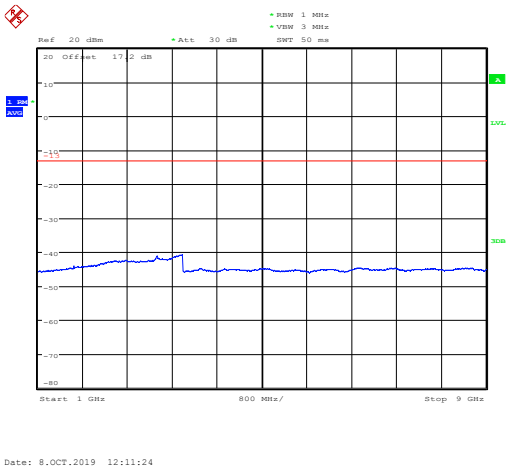
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported.

The signal beyond the limit is carrier.

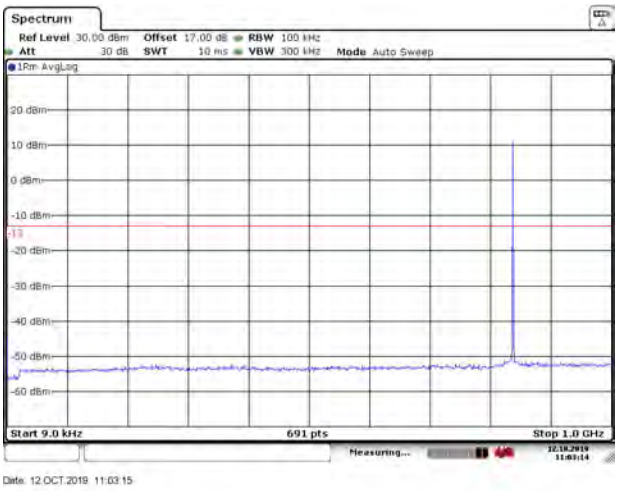
LTE Band 5 1.4MHz CH-Low 9kHz~1GHz



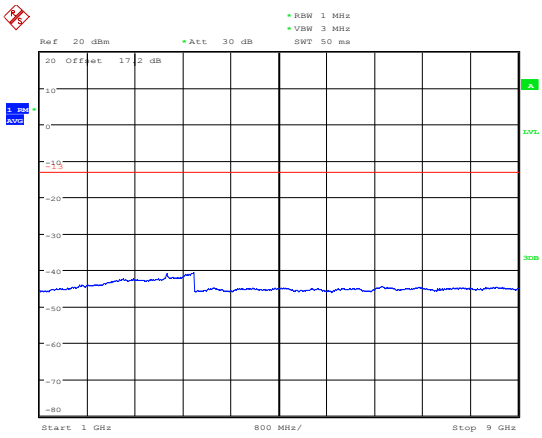
LTE Band 5 1.4MHz CH-Low 1GHz~9GHz



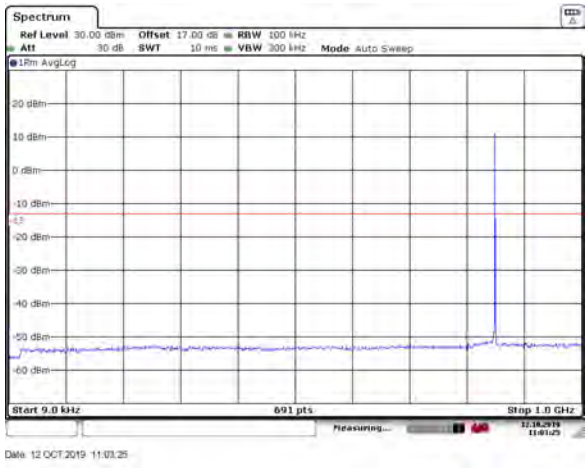
LTE Band 5 1.4MHz CH-Middle 9kHz~1GHz



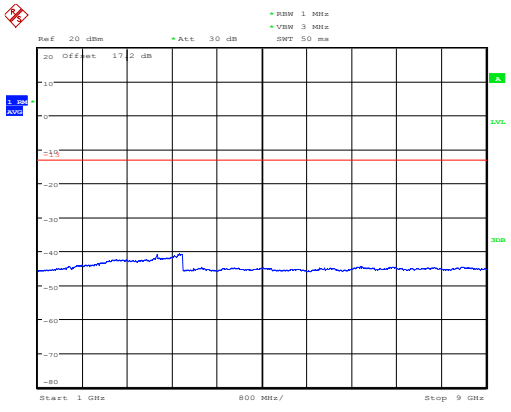
LTE Band 5 1.4MHz CH-Middle 1GHz~9GHz



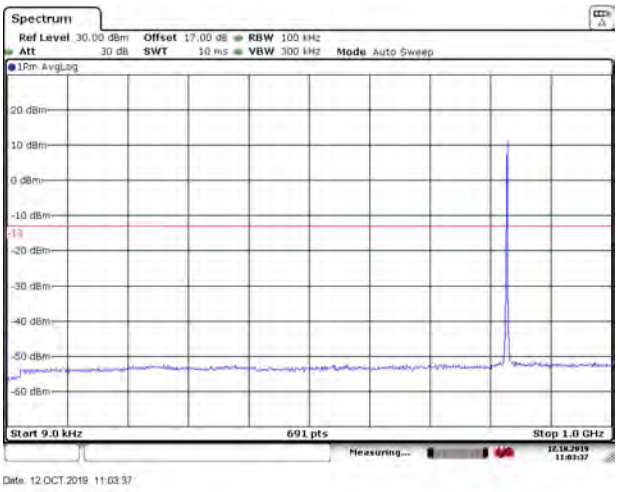
LTE Band 5 1.4MHz CH-High 9kHz~1GHz



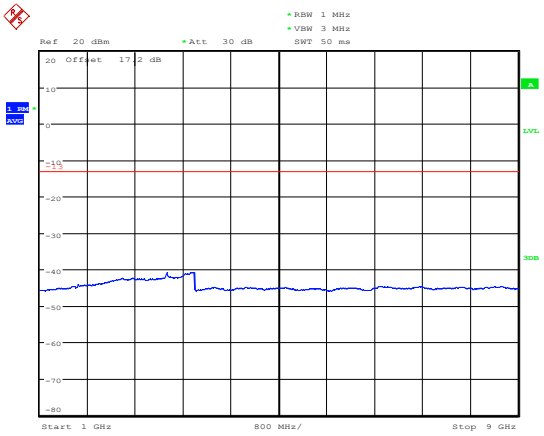
LTE Band 5 1.4MHz CH-High 1GHz~9GHz



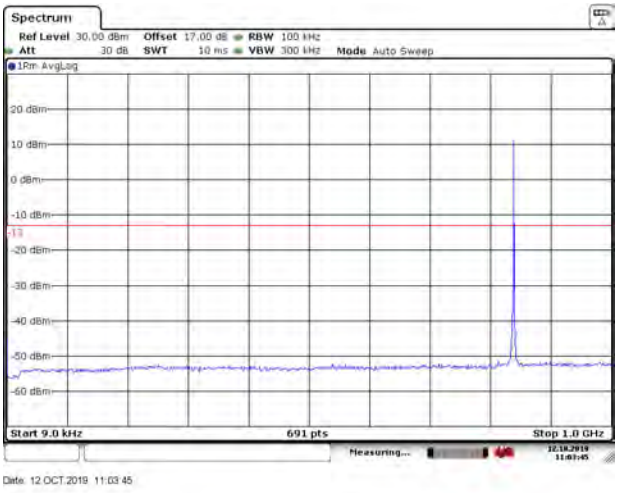
LTE Band 5 3MHz CH-Low 9kHz~1GHz



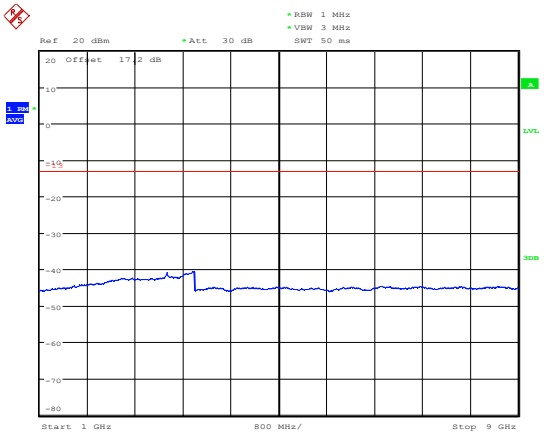
LTE Band 5 3MHz CH-Low 1GHz~9GHz



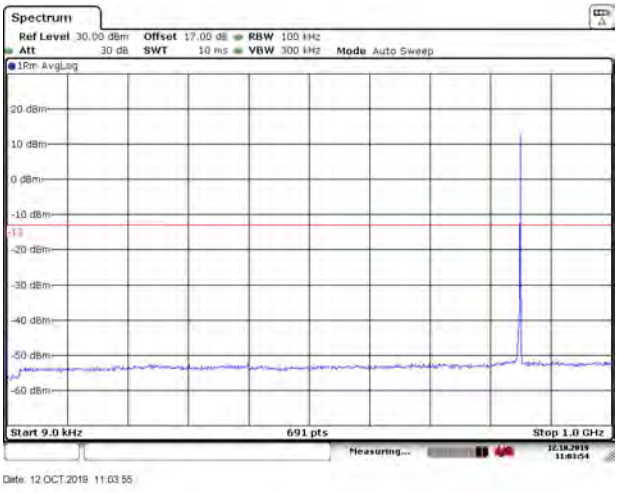
LTE Band 5 3MHz CH-Middle 9kHz~1GHz



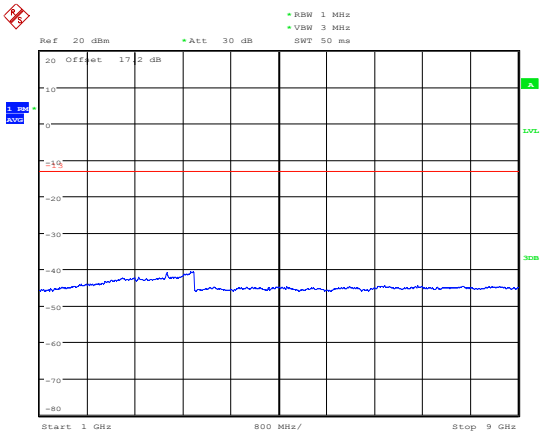
LTE Band 5 3MHz CH-Middle 1GHz~9GHz



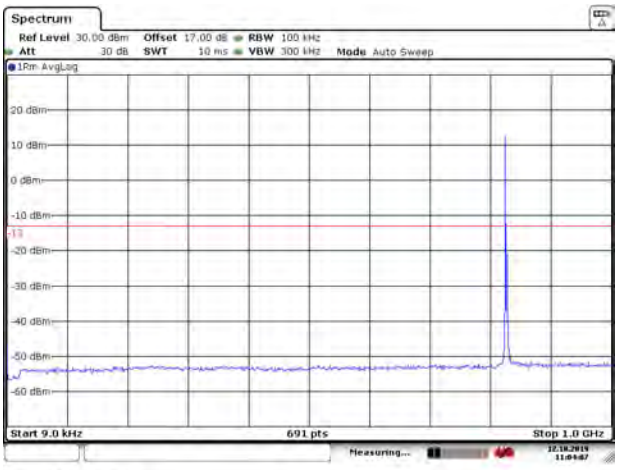
LTE Band 5 3MHz CH-High 9kHz~1GHz



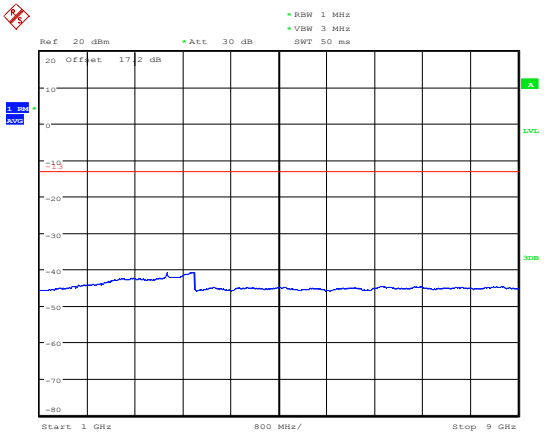
LTE Band 5 3MHz CH-High 1GHz~9GHz



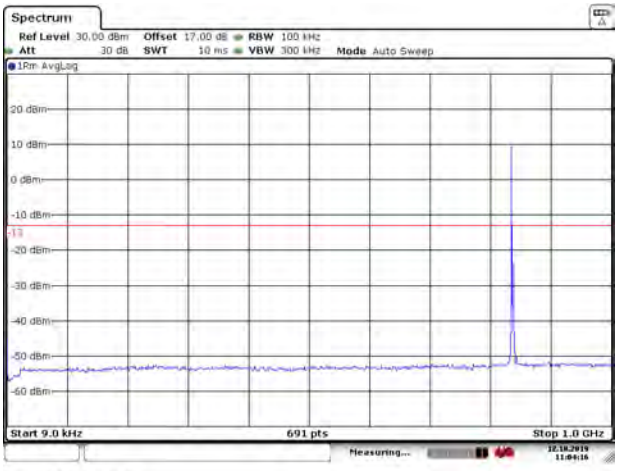
LTE Band 5 5MHz CH-Low 9kHz~1GHz



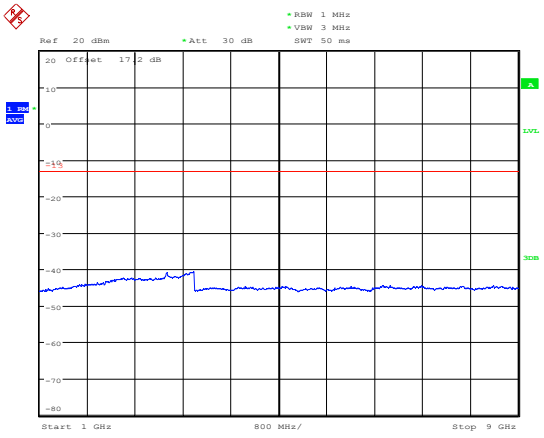
LTE Band 5 5MHz CH-Low 1GHz~9GHz



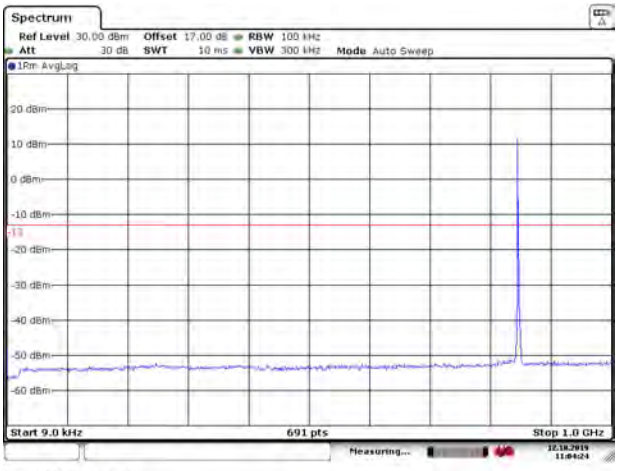
LTE Band 5 5MHz CH-Middle 9kHz~1GHz



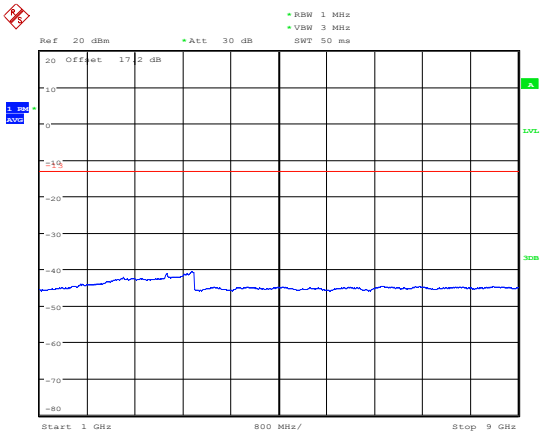
LTE Band 5 5MHz CH-Middle 1GHz~9GHz



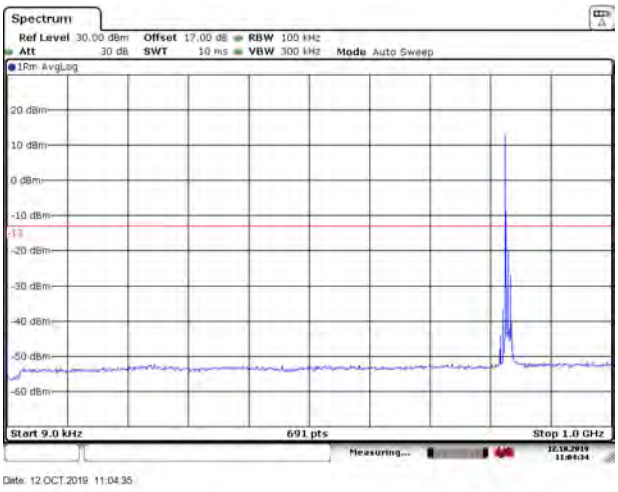
LTE Band 5 5MHz CH-High 9kHz~1GHz



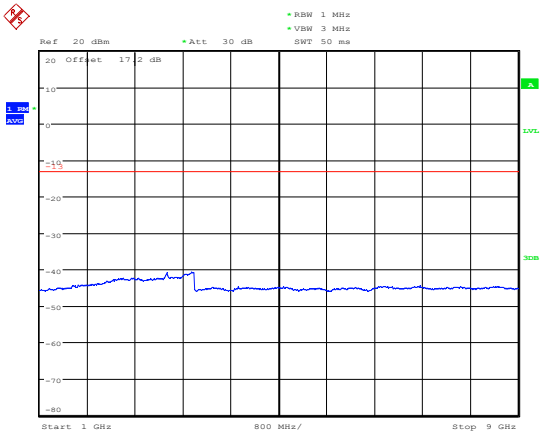
LTE Band 5 5MHz CH-High 1GHz~9GHz



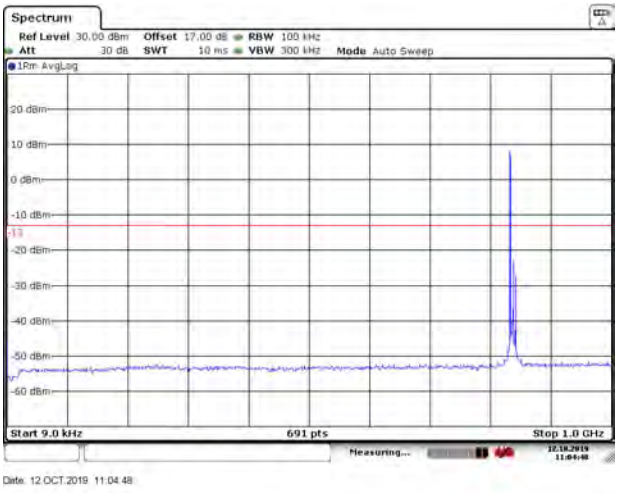
LTE Band 5 10MHz CH-Low 9kHz~1GHz



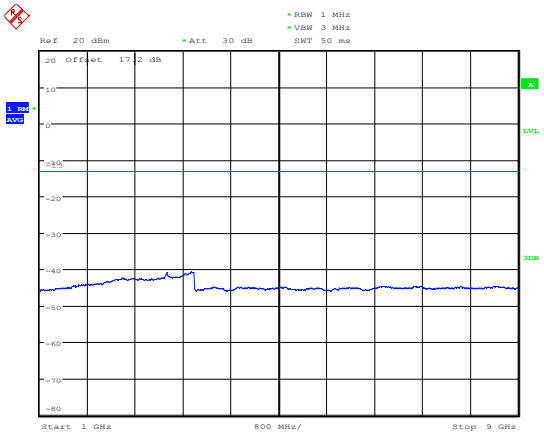
LTE Band 5 10MHz CH-Low 1GHz~9GHz



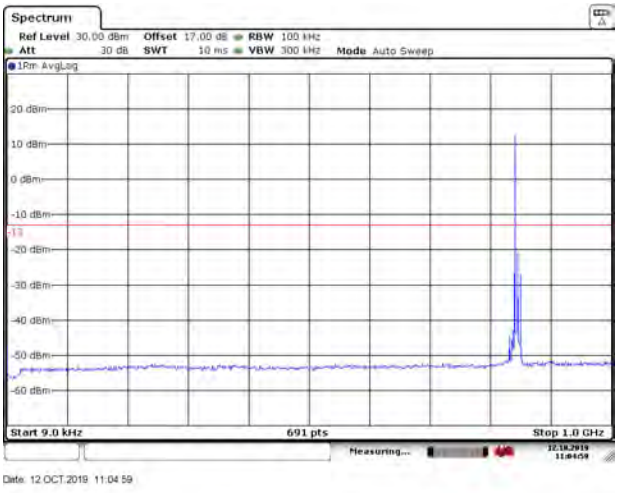
LTE Band 5 10MHz CH-Middle 9kHz~1GHz



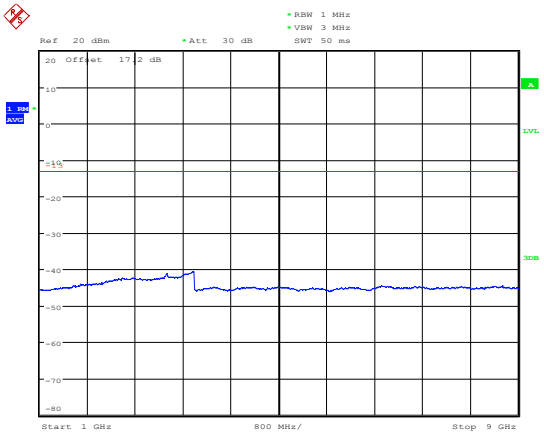
LTE Band 5 10MHz CH-Middle 1GHz~9GHz



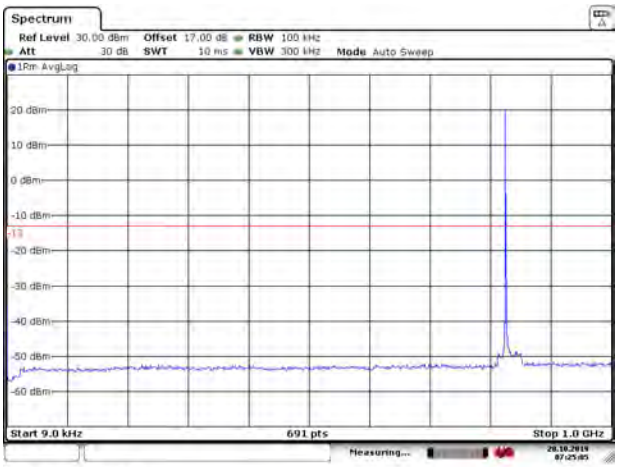
LTE Band 5 10MHz CH-High 9kHz~1GHz



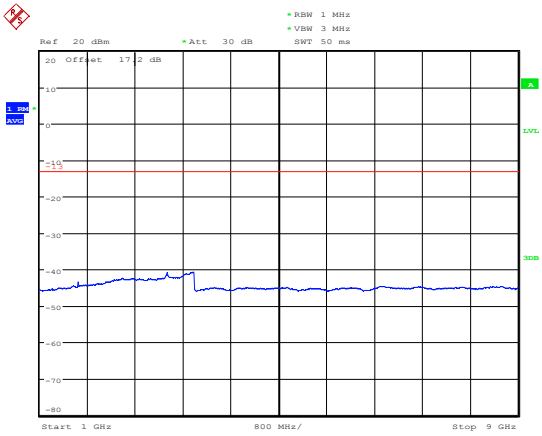
LTE Band 5 10MHz CH-High 1GHz~9GHz



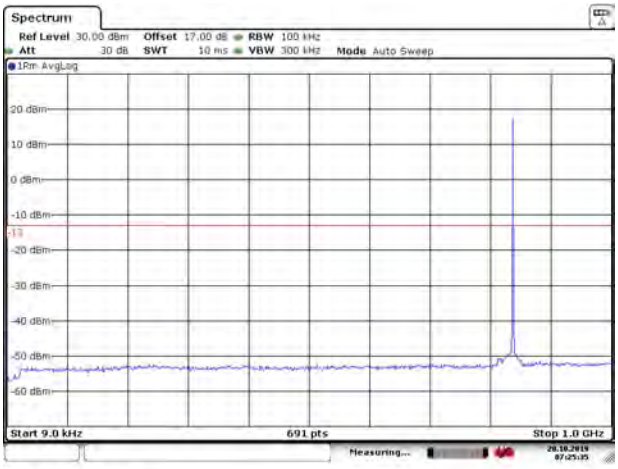
LTE Band 26 1.4MHz CH-Low 9kHz~1GHz



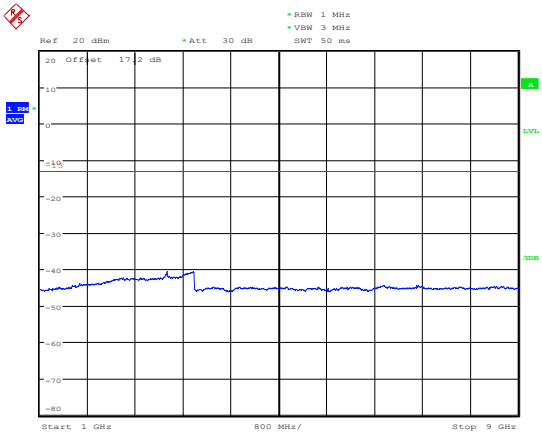
LTE Band 26 1.4MHz CH-Low 1GHz~9GHz



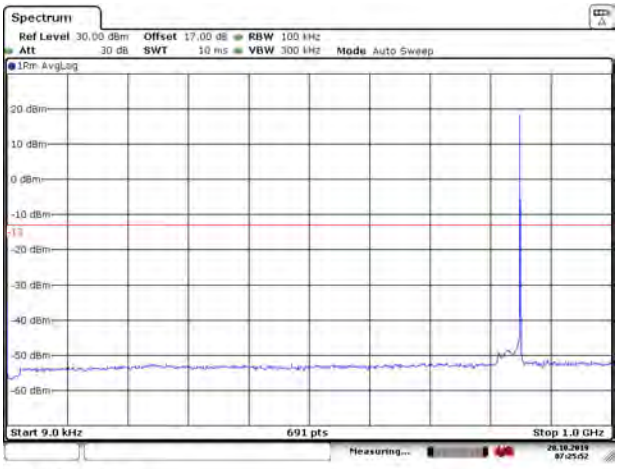
LTE Band 26 1.4MHz CH-Middle 9kHz~1GHz



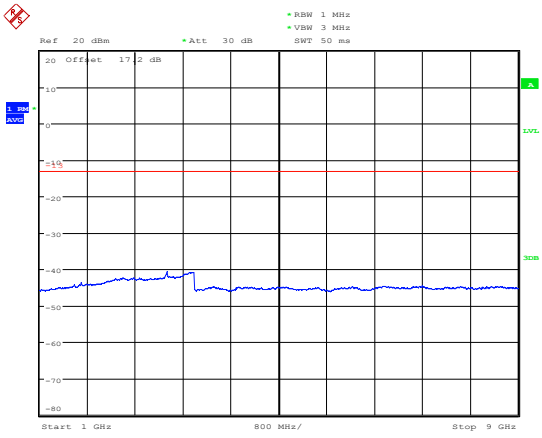
LTE Band 26 1.4MHz CH-Middle 1GHz~9GHz



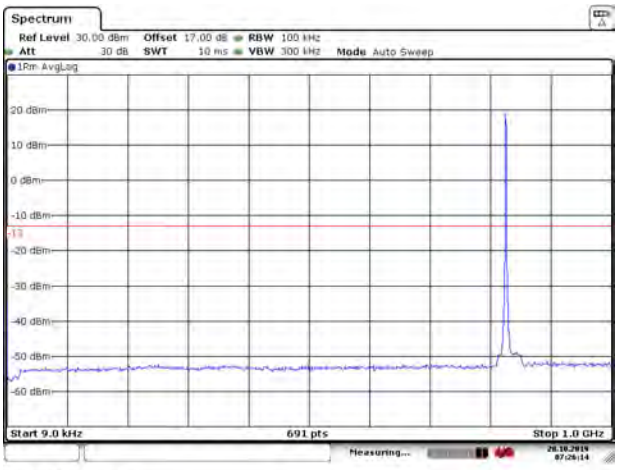
LTE Band 26 1.4MHz CH-High 9kHz~1GHz



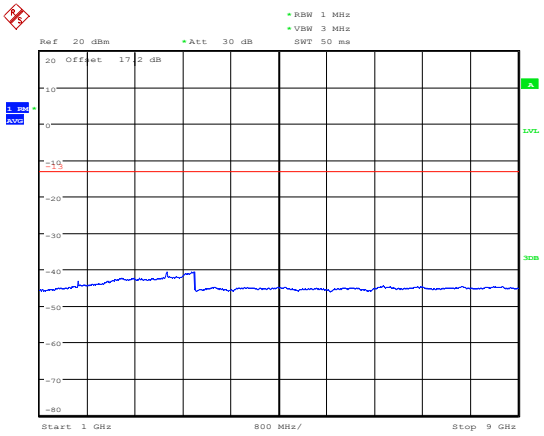
LTE Band 26 1.4MHz CH-High 1GHz~9GHz



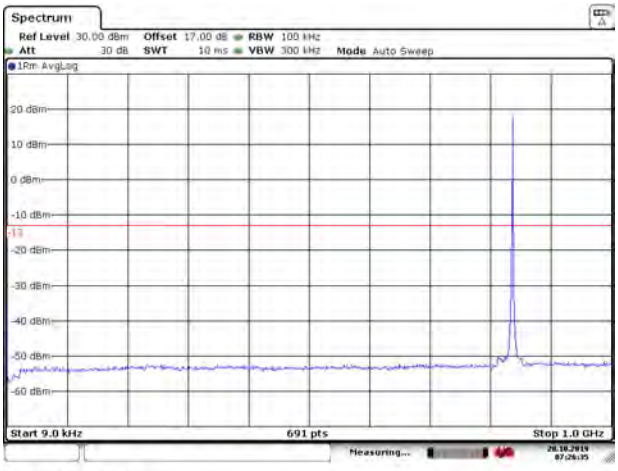
LTE Band 26 3MHz CH-Low 9kHz~1GHz



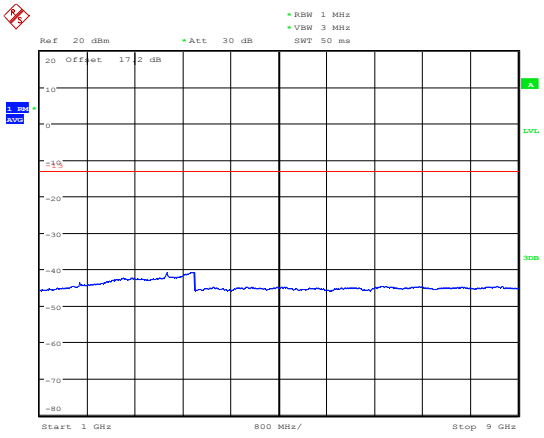
LTE Band 26 3MHz CH-Low 1GHz~9GHz



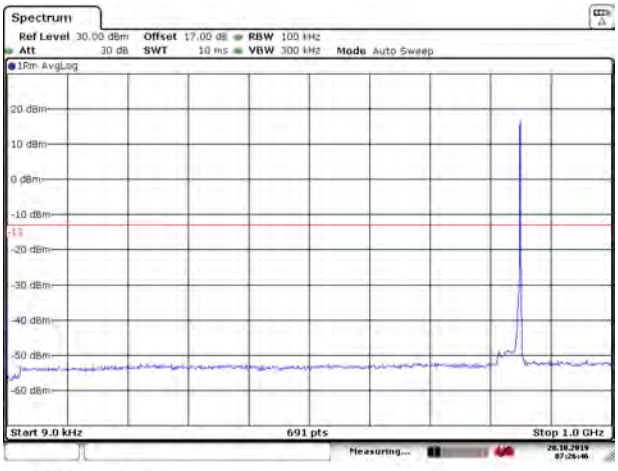
LTE Band 26 3MHz CH-Middle 9kHz~1GHz



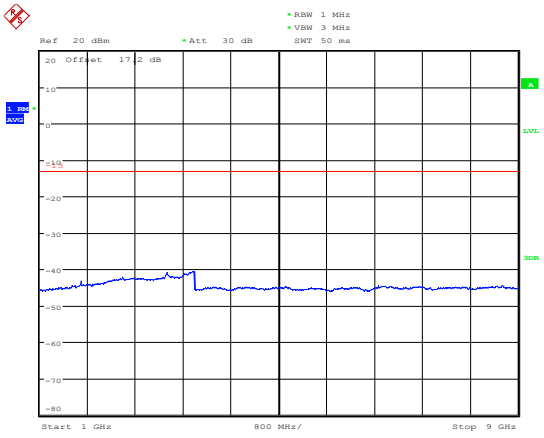
LTE Band 26 3MHz CH-Middle 1GHz~9GHz



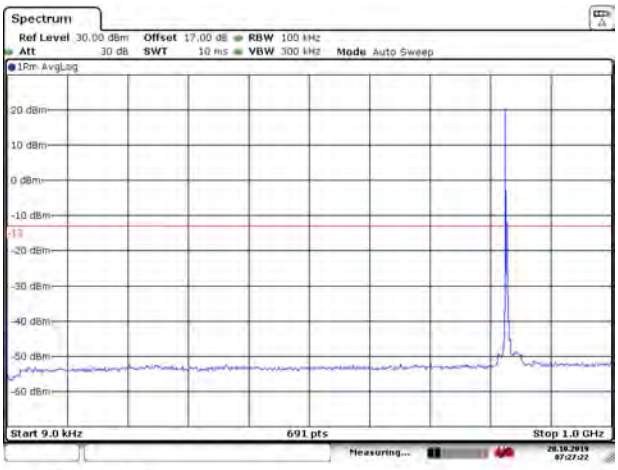
LTE Band 26 3MHz CH-High 9kHz~1GHz



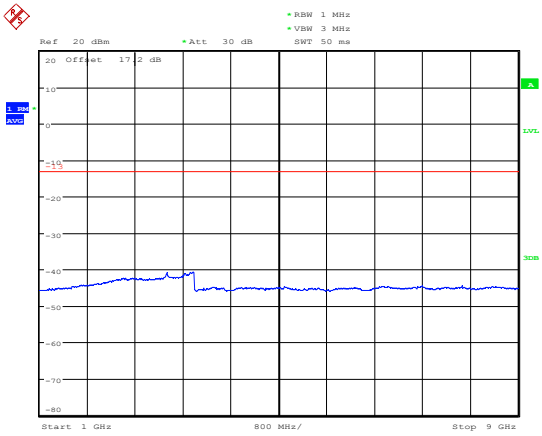
LTE Band 26 3MHz CH-High 1GHz~9GHz



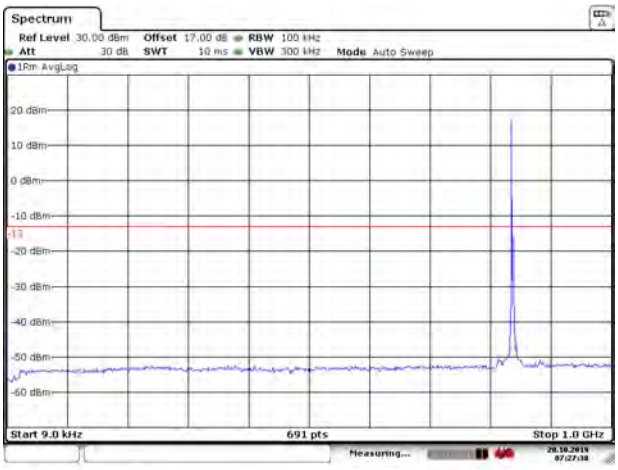
LTE Band 26 5MHz CH-Low 9kHz~1GHz



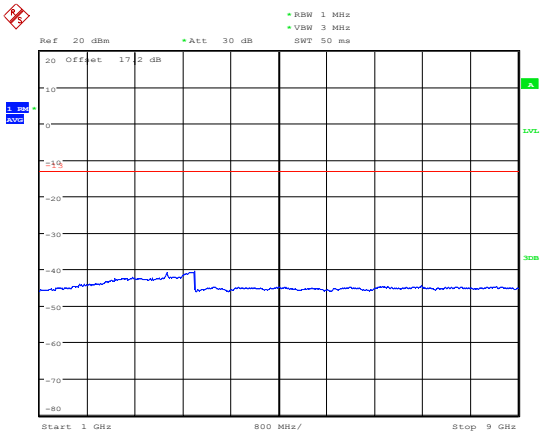
LTE Band 26 5MHz CH-Low 1GHz~9GHz



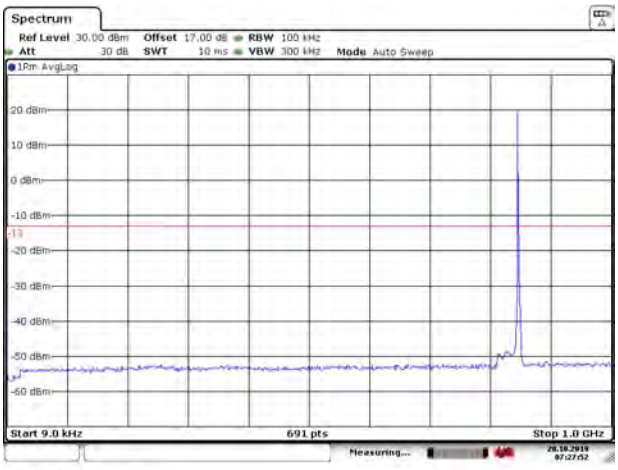
LTE Band 26 5MHz CH-Middle 9kHz~1GHz



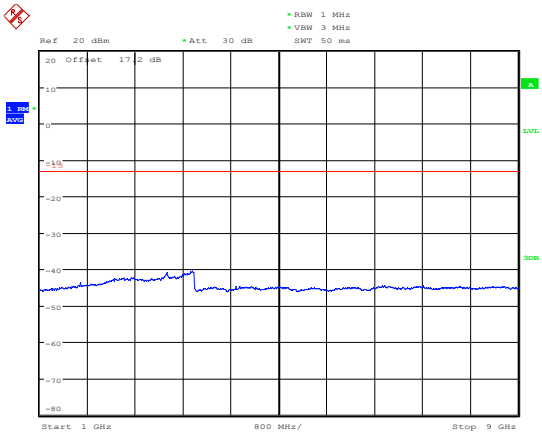
LTE Band 26 5MHz CH-Middle 1GHz~9GHz



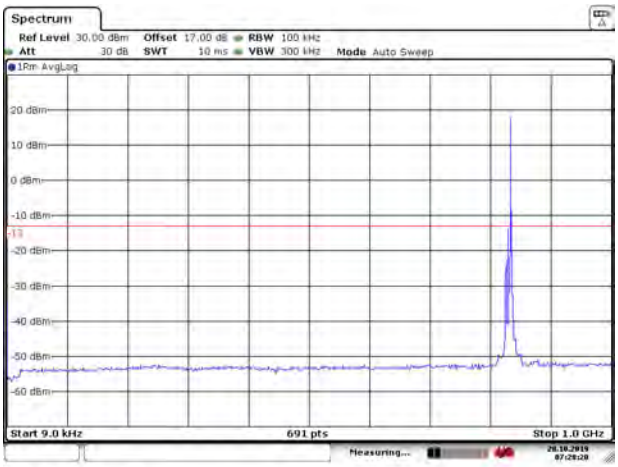
LTE Band 26 5MHz CH-High 9kHz~1GHz



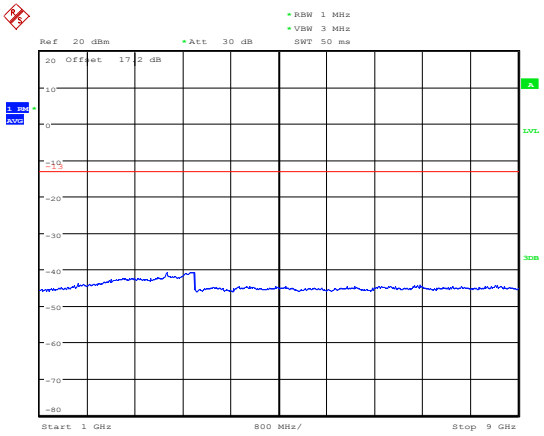
LTE Band 26 5MHz CH-High 1GHz~9GHz



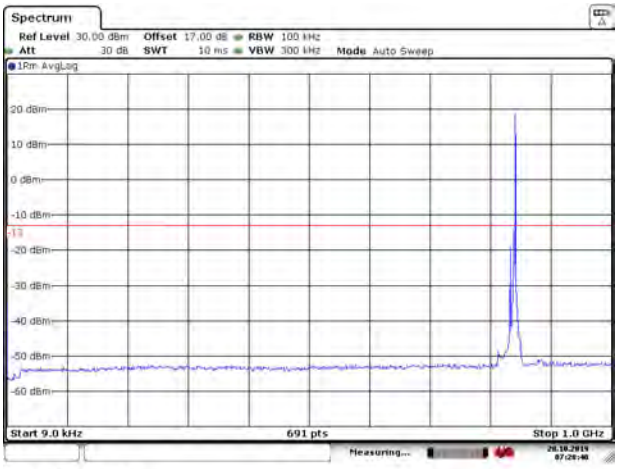
LTE Band 26 10MHz CH-Low 9kHz~1GHz



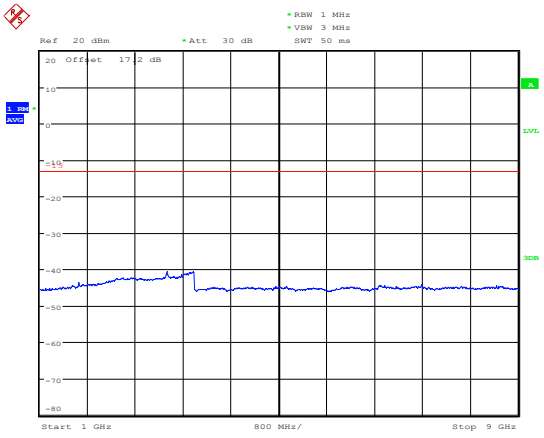
LTE Band 26 10MHz CH-Low 1GHz~9GHz



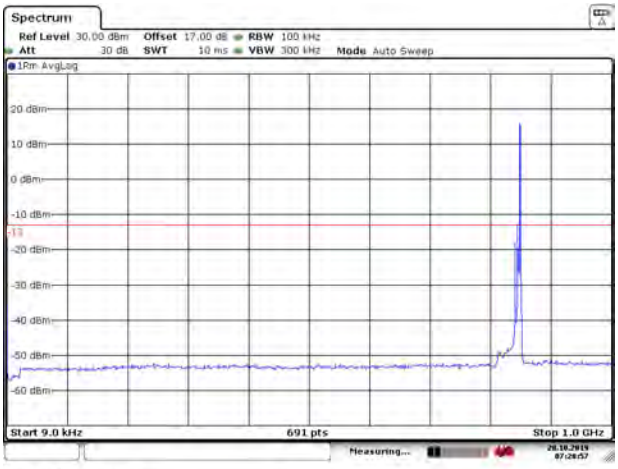
LTE Band 26 10MHz CH-Middle 9kHz~1GHz



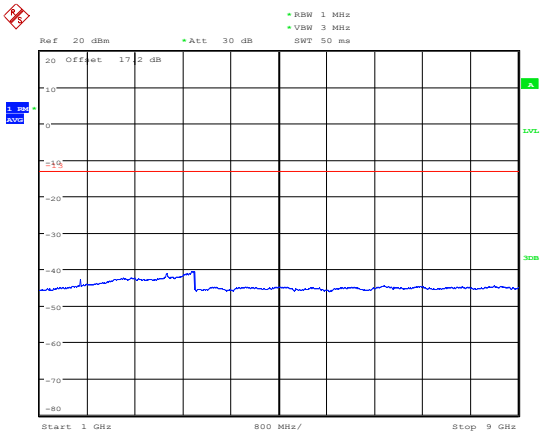
LTE Band 26 10MHz CH-Middle 1GHz~9GHz



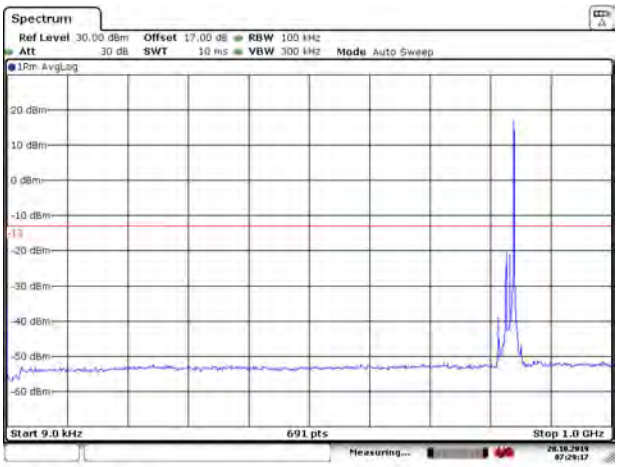
LTE Band 26 10MHz CH-High 9kHz~1GHz



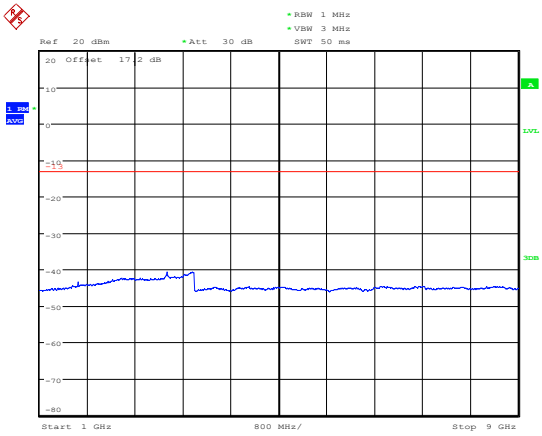
LTE Band 26 10MHz CH-High 1GHz~9GHz



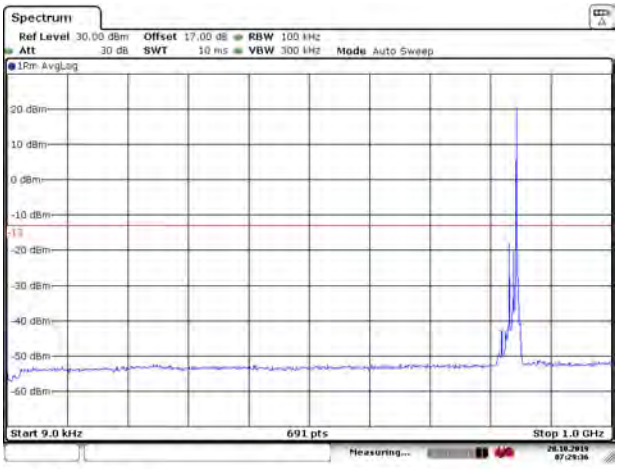
LTE Band 26 15MHz CH-Low 9kHz~1GHz



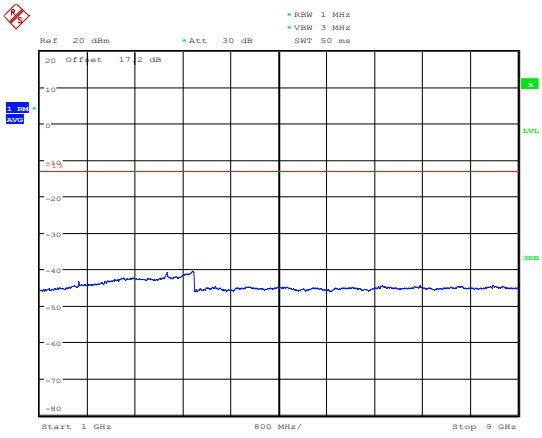
LTE Band 26 15MHz CH-Low 1GHz~9GHz



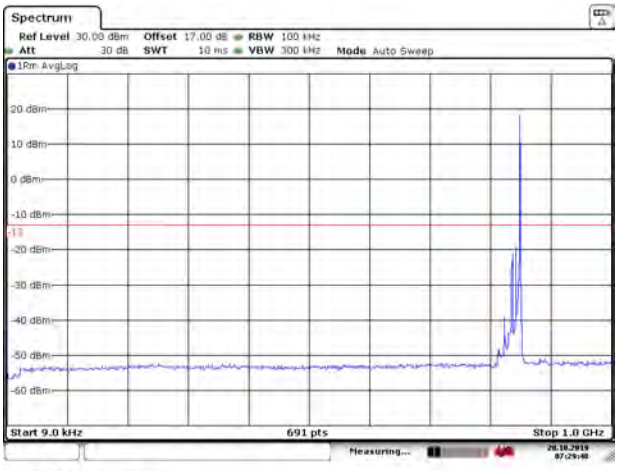
LTE Band 26 15MHz CH-Middle 9kHz~1GHz



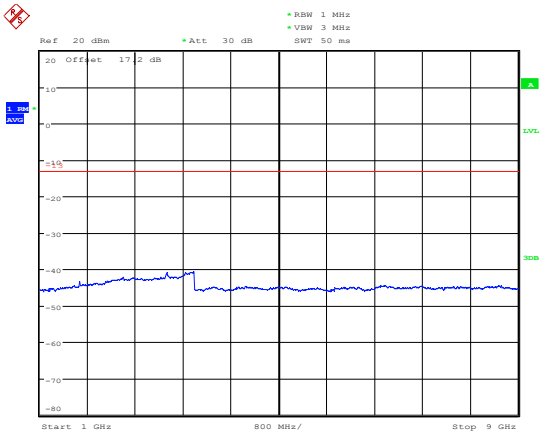
LTE Band 26 15MHz CH-Middle 1GHz~9GHz



LTE Band 26 15MHz CH-High 9kHz~1GHz



LTE Band 26 15MHz CH-High 1GHz~9GHz



5.7. Radiates Spurious Emission

Ambient condition

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

Method of Measurement

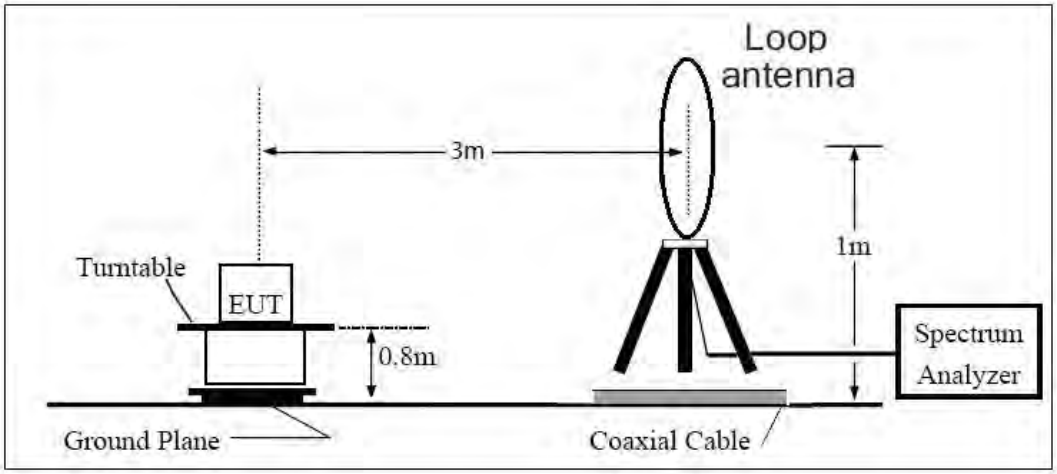
1. The testing follows FCC KDB 971168 v03r01 Section 5.8 and ANSI C63.26 (2015).
2. Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable 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=200Hz,VBW=600Hz for 9kHz150kHz , RBW=10kHz, VBW=30kHz 150kHz-30MHz , RBW=100kHz,VBW=300kHz for 30MHz to 1GHz and RBW=1MHz, VBW=3MHz for above 1GHz, 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 dBi)

and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

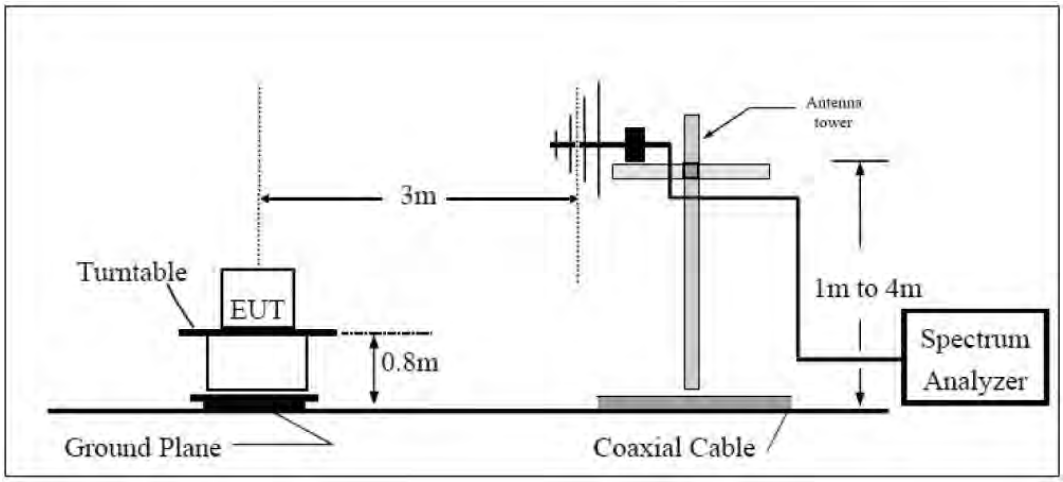
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

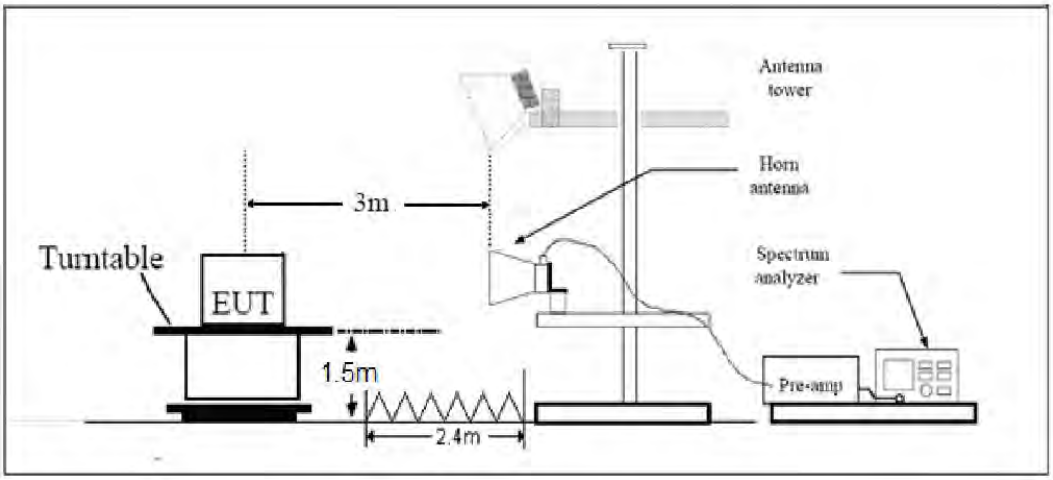
9KHz ~ 30MHz



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 Result

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.

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	1673.0	-58.06	2.00	10.75	Horizontal	-51.46	-13.00	38.46	315
3	2509.5	-60.67	2.51	11.05	Horizontal	-54.28	-13.00	41.28	45
4	3346.0	-54.60	4.20	11.15	Horizontal	-49.80	-13.00	36.80	45
5	4182.5	-53.00	5.20	11.15	Horizontal	-49.20	-13.00	36.20	135
6	5019.0	-56.90	5.50	11.95	Horizontal	-52.60	-13.00	39.60	0
7	5855.5	-59.60	5.70	13.55	Horizontal	-53.90	-13.00	40.90	90
8	6692.0	-55.80	6.30	13.75	Horizontal	-50.50	-13.00	37.50	45
9	7528.5	-55.40	6.80	13.85	Horizontal	-50.50	-13.00	37.50	270
10	8365.0	-54.50	6.90	14.25	Horizontal	-49.30	-13.00	36.30	315
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 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	1668.6	-59.40	2.00	10.75	Horizontal	-52.80	-13.00	39.80	0
3	2502.8	-64.47	2.51	11.05	Horizontal	-58.08	-13.00	45.08	18
4	3337.1	-54.60	4.20	11.15	Horizontal	-49.80	-13.00	36.80	45
5	4171.4	-53.00	5.20	11.15	Horizontal	-49.20	-13.00	36.20	135
6	5005.7	-56.90	5.50	11.95	Horizontal	-52.60	-13.00	39.60	0
7	5839.9	-59.60	5.70	13.55	Horizontal	-53.90	-13.00	40.90	90
8	6674.2	-55.80	6.30	13.75	Horizontal	-50.50	-13.00	37.50	45
9	7508.5	-55.40	6.80	13.85	Horizontal	-50.50	-13.00	37.50	270
10	8342.8	-54.50	6.90	14.25	Horizontal	-49.30	-13.00	36.30	315
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 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	1673.0	-59.40	2.00	10.75	Horizontal	-52.80	-13.00	39.80	0
3	2509.5	-64.47	2.51	11.05	Horizontal	-58.08	-13.00	45.08	18
4	3346.0	-58.90	4.20	11.15	Horizontal	-54.10	-13.00	41.10	90
5	4182.5	-54.20	5.20	11.15	Horizontal	-50.40	-13.00	37.40	45
6	5019.0	-57.50	5.50	11.95	Horizontal	-53.20	-13.00	40.20	0
7	5855.5	-59.50	5.70	13.55	Horizontal	-53.80	-13.00	40.80	0
8	6692.0	-56.70	6.30	13.75	Horizontal	-51.40	-13.00	38.40	90
9	7528.5	-55.00	6.80	13.85	Horizontal	-50.10	-13.00	37.10	45
10	8365.0	-54.90	6.90	14.25	Horizontal	-49.70	-13.00	36.70	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.									

LTE Band 26 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	1673.00	-57.62	2.00	10.75	Horizontal	-51.02	-13.00	38.02	315
3	2509.50	-62.33	2.51	11.05	Horizontal	-55.94	-13.00	42.94	90
4	3346.00	-55.84	4.20	11.15	Horizontal	-51.04	-13.00	38.04	45
5	4182.50	-55.66	5.20	11.15	Horizontal	-51.86	-13.00	38.86	0
6	5019.00	-59.38	5.50	11.95	Horizontal	-55.08	-13.00	42.08	315
7	5855.50	-60.34	5.70	13.55	Horizontal	-54.64	-13.00	41.64	90
8	6692.00	-57.58	6.30	13.75	Horizontal	-52.28	-13.00	39.28	225
9	7528.50	-55.58	6.80	13.85	Horizontal	-50.68	-13.00	37.68	135
10	8365.00	-55.13	6.90	14.25	Horizontal	-49.93	-13.00	36.93	90
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 26 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	1668.56	-56.38	2.00	10.75	Horizontal	-49.78	-13.00	36.78	225
3	2502.94	-62.70	2.51	11.05	Horizontal	-56.31	-13.00	43.31	180
4	3346.00	-57.31	4.20	11.15	Horizontal	-52.51	-13.00	39.51	225
5	4182.50	-57.03	5.20	11.15	Horizontal	-53.23	-13.00	40.23	45
6	5019.00	-58.72	5.50	11.95	Horizontal	-54.42	-13.00	41.42	90
7	5855.50	-61.52	5.70	13.55	Horizontal	-55.82	-13.00	42.82	135
8	6692.00	-57.12	6.30	13.75	Horizontal	-51.82	-13.00	38.82	0
9	7528.50	-56.35	6.80	13.85	Horizontal	-51.45	-13.00	38.45	315
10	8365.00	-54.01	6.90	14.25	Horizontal	-48.81	-13.00	35.81	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 26 15MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1660.13	-59.10	2.00	10.75	Horizontal	-52.50	-13.00	39.50	45
3	2490.00	-61.50	2.51	11.05	Horizontal	-55.11	-13.00	42.11	135
4	3346.00	-56.40	4.20	11.15	Horizontal	-51.60	-13.00	38.60	45
5	4182.50	-57.92	5.20	11.15	Horizontal	-54.12	-13.00	41.12	315
6	5019.00	-57.66	5.50	11.95	Horizontal	-53.36	-13.00	40.36	225
7	5855.50	-59.35	5.70	13.55	Horizontal	-53.65	-13.00	40.65	135
8	6692.00	-58.56	6.30	13.75	Horizontal	-53.26	-13.00	40.26	90
9	7528.50	-57.23	6.80	13.85	Horizontal	-52.33	-13.00	39.33	0
10	8365.00	-56.13	6.90	14.25	Horizontal	-50.93	-13.00	37.93	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.									

6. Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Base Station Simulator	R&S	CMW500	113824	2019-05-19	2020-05-18
Power Splitter	Hua Xiang	SHX-GF2-2-13	10120101	/	/
Spectrum Analyzer	Key sight	N9010A	MY50210259	2019-05-19	2020-05-18
Universal Radio Communication Tester	Key sight	E5515C	MY48367192	2019-05-19	2020-05-18
Signal Analyzer	R&S	FSV30	100815	2019-12-16	2020-12-15
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2017-09-26	2020-09-25
Trilog Antenna	SCHWARZBECK	VUBL 9163	01111	2019-09-12	2021-09-11
Horn Antenna	R&S	HF907	100126	2018-07-07	2020-07-06
Signal generator	R&S	SMB 100A	102594	2019-05-19	2020-05-18
Climatic Chamber	ESPEC	SU-242	93000506	2017-12-17	2020-12-16
Preampflier	R&S	SCU18	102327	2019-05-19	2020-05-18
MOB COMMS DC SUPPLY	Keysight	66319D	MY43004105	2019-05-20	2020-05-21
RF Cable	Agilent	SMA 15cm	0001	2019-12-13	2020-3-14
Software	R&S	EMC32	9.26.0	/	/

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