RF TEST REPORT

Applicant	BTI Wireless
FCC ID	WBKCP860
Product	LTE Indoor CPE
Model	CP860
Report No.	R2012A0895-R1
Issue Date	February 7, 2021

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2019)/ FCC CFR47 Part 27C (2019)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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Approved by: Kai Xu

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Summary of Measurement Results

Number	Test Case	Clause in FCC rules	Verdict
1	RF Power Output and Effective Isotropic Radiated Power	2.1046 27.50(h)(2)	PASS
2	Occupied Bandwidth	2.1049	PASS
3	Band Edge Compliance	27.53(m)	PASS
4	Peak-to-Average Power Ratio	27.50(d)/KDB971168 D01(5.7)	PASS
5	Frequency Stability	2.1055 27.54	PASS
6	Spurious Emissions at Antenna Terminals	2.1051 27.53(m)	PASS
7	Radiates Spurious Emission	2.1053 27.53(m)	PASS
Date of Testing: January 6, 2021~January 15, 2021 Date of Sample Received: December 29, 2020			
Note: PASS: The EUT complies with the essential requirements in the standard. FAIL: The EUT does not comply with the essential requirements in the standard. All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			

1 Test Laboratory

1.1 Notes of the Test Report

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

1.2. Test facility

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

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

A2LA (Certificate Number: 3857.01)

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

1.3 Testing Location

Company:	TA Technology (Shanghai) Co., Ltd.
Address:	No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China
City:	Shanghai
Post code:	201201
Country:	P. R. China
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2 General Description of Equipment under Test

2.1 Applicant and Manufacturer Information

Applicant	BTI Wireless
Applicant address	6185 Phyllis Drive #D, Cypress, California 90630, United States
Manufacturer	BTI Wireless
Manufacturer address	6185 Phyllis Drive #D, Cypress, California 90630, United States

2.2 General information

EUT Description			
Model	CP860		
IMEI	862165040846329		
Hardware Version	V1.0		
Software Version	ST_V2.0.7		
Power Supply	AC adapter		
Antenna Type	PCB Antenna		
Antenna Gain	LTE Band7:	5.74 dBi	
	LTE Band38:	5.54 dBi	
	LTE Band41:	5.74 dBi	
Test Mode(s)	LTE Band 7/38/41;		
Test Modulation	(LTE)QPSK 16QAM 64QAM;		
LTE Category	12		
Maximum E.I.R.P.	LTE Band 7:	29.95dBm	
	LTE Band 38:	32.90dBm	
	LTE Band 41:	30.75dBm	
Rated Power Supply Voltage:	12V		
Extreme Voltage	Minimum: 10.2V Maximum: 13.8V		
Extreme Temperature	Lowest: -30°C Highest: +50°C		
Operating Voltage	Minimum: 9V Maximum: 15V		
Operating Temperature	Lowest: -30°C Highest: +50°C		
Operating Frequency Range(s)	Mode	Tx (MHz)	Rx (MHz)
	LTE Band 7	2500 ~ 2570	2620 ~ 2690
	LTE Band 38	2570 ~ 2620	2570 ~ 2620
	LTE Band 41	2496 ~ 2690	2496 ~ 2690
EUT Accessory			
Adapter	Manufacturer: SHENZHEN AQUILSTAR TECHNOLOGY CO.,LTD		

	Model: ASSA67A-120200
Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.	

3 Applied Standards

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

Test standards:

FCC CFR47 Part 27C (2019)

ANSI C63.26 (2015)

Reference standard:

FCC CFR47 Part 2 (2019)

KDB 971168 D01 Power Meas License Digital Systems v03r01

4 Test Configuration

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

All mode and data rates and positions and modulations were investigated.
Subsequently, only the worst case emissions are reported.
The following testing in LTE is set based on the maximum RF Output Power.
The following testing in different Bandwidth is set to detailin the following table:
Test modes are chosen to be reported as the worst case configuration below for LTE Band 7/38/41:

Test items	Modes	Bandwidth (MHz)				Modulation			RB			Test Channel		
		5	10	15	20	QPSK	16QAM	64QAM	1	50%	100%	L	M	H
RF Power Output and Effective Isotropic Radiated Power	LTE 7	O	O	O	O	O	O		O	O	O	O	O	O
	LTE 38	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 41	O	O	O	O	O	O	O	O	O	O	O	O	O
Occupied Bandwidth	LTE 7	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 38	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 41	O	O	O	O	O	O	O	-	-	O	O	O	O
Band Edge Compliance	LTE 7	O	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 38	O	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 41	O	O	O	O	O	O	O	O	-	O	O	-	O
Peak-to-Average Power Ratio	LTE 7	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 38	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 41	O	O	O	O	O	O	O	-	-	O	O	O	O
Frequency Stability	LTE 7	O	O	O	O	O	O	O	O	-	-	-	O	-
	LTE 38	O	O	O	O	O	O	O	O	-	-	-	O	-
	LTE 41	O	O	O	O	O	O	O	O	-	-	-	O	-
Spurious Emissions at Antenna Terminals	LTE 7	O	O	O	O	O	-	-	O	-	-	O	O	O
	LTE 38	O	O	O	O	O	-	-	O	-	-	O	O	O
	LTE 41	O	O	O	O	O	-	-	O	-	-	O	O	O
Radiates Spurious	LTE 7	O	-	-	O	O	-	-	O	-	-	-	O	-
	LTE 38	O	-	-	O	O	-	-	O	-	-	-	O	-

Emission	LTE 41	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 Isotropic Radiated Power

Ambient condition

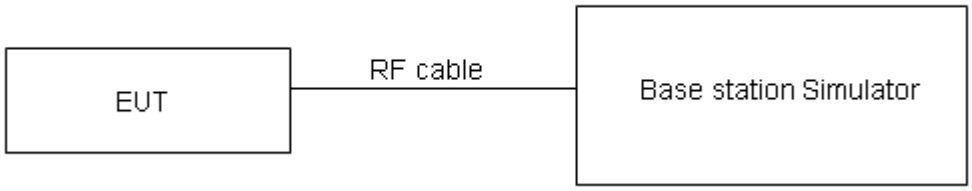
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

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

ERP can then be calculated as follows:
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.)

Test Setup



Limits

No specific RF power output requirements in part 2.1046.

Rule Part 27.50(h) (2) specifies that “Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.”

Part 27.50(h)(2) Limit	≤ 2 W (33 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/EIRP.

Test Results

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	EIRP (dBm)
LTE Band7	5	20775	1	#0	QPSK	23.84	29.58
LTE Band7	5	20775	1	#Mid	QPSK	23.25	28.99
LTE Band7	5	20775	1	#Max	QPSK	22.83	28.57
LTE Band7	5	20775	12	#0	QPSK	22.88	28.62
LTE Band7	5	20775	12	#Mid	QPSK	22.87	28.61
LTE Band7	5	20775	12	#Max	QPSK	22.16	27.90
LTE Band7	5	20775	25	#0	QPSK	22.24	27.98
LTE Band7	5	20775	1	#0	QAM16	22.53	28.27
LTE Band7	5	20775	1	#Mid	QAM16	22.53	28.27
LTE Band7	5	20775	1	#Max	QAM16	21.95	27.69
LTE Band7	5	20775	12	#0	QAM16	21.90	27.64
LTE Band7	5	20775	12	#Mid	QAM16	21.90	27.64
LTE Band7	5	20775	12	#Max	QAM16	20.88	26.62
LTE Band7	5	20775	25	#0	QAM16	21.07	26.81
LTE Band7	5	21100	1	#0	QPSK	21.61	27.35
LTE Band7	5	21100	1	#Mid	QPSK	21.47	27.21
LTE Band7	5	21100	1	#Max	QPSK	21.54	27.28
LTE Band7	5	21100	12	#0	QPSK	20.95	26.69
LTE Band7	5	21100	12	#Mid	QPSK	20.94	26.68
LTE Band7	5	21100	12	#Max	QPSK	20.62	26.36
LTE Band7	5	21100	25	#0	QPSK	20.71	26.45
LTE Band7	5	21100	1	#0	QAM16	20.69	26.43
LTE Band7	5	21100	1	#Mid	QAM16	20.79	26.53
LTE Band7	5	21100	1	#Max	QAM16	20.92	26.66
LTE Band7	5	21100	12	#0	QAM16	20.08	25.82
LTE Band7	5	21100	12	#Mid	QAM16	20.09	25.83
LTE Band7	5	21100	12	#Max	QAM16	19.75	25.49
LTE Band7	5	21100	25	#0	QAM16	19.68	25.42
LTE Band7	5	21425	1	#0	QPSK	21.81	27.55
LTE Band7	5	21425	1	#Mid	QPSK	21.85	27.59
LTE Band7	5	21425	1	#Max	QPSK	21.25	26.99
LTE Band7	5	21425	12	#0	QPSK	21.24	26.98
LTE Band7	5	21425	12	#Mid	QPSK	21.23	26.97
LTE Band7	5	21425	12	#Max	QPSK	20.75	26.49
LTE Band7	5	21425	25	#0	QPSK	20.85	26.59
LTE Band7	5	21425	1	#0	QAM16	21.17	26.91
LTE Band7	5	21425	1	#Mid	QAM16	21.26	27.00
LTE Band7	5	21425	1	#Max	QAM16	20.67	26.41
LTE Band7	5	21425	12	#0	QAM16	20.24	25.98

LTE Band7	5	21425	12	#Mid	QAM16	20.23	25.97
LTE Band7	5	21425	12	#Max	QAM16	19.75	25.49
LTE Band7	5	21425	25	#0	QAM16	19.85	25.59
LTE Band7	10	20800	1	#0	QPSK	24.21	29.95
LTE Band7	10	20800	1	#Mid	QPSK	22.96	28.70
LTE Band7	10	20800	1	#Max	QPSK	22.93	28.67
LTE Band7	10	20800	25	#0	QPSK	22.39	28.13
LTE Band7	10	20800	25	#Mid	QPSK	22.39	28.13
LTE Band7	10	20800	25	#Max	QPSK	22.19	27.93
LTE Band7	10	20800	50	#0	QPSK	22.23	27.97
LTE Band7	10	20800	1	#0	QAM16	23.43	29.17
LTE Band7	10	20800	1	#Mid	QAM16	22.11	27.85
LTE Band7	10	20800	1	#Max	QAM16	22.30	28.04
LTE Band7	10	20800	25	#0	QAM16	21.54	27.28
LTE Band7	10	20800	25	#Mid	QAM16	21.54	27.28
LTE Band7	10	20800	25	#Max	QAM16	20.97	26.71
LTE Band7	10	20800	50	#0	QAM16	21.32	27.06
LTE Band7	10	21100	1	#0	QPSK	22.42	28.16
LTE Band7	10	21100	1	#Mid	QPSK	21.32	27.06
LTE Band7	10	21100	1	#Max	QPSK	22.44	28.18
LTE Band7	10	21100	25	#0	QPSK	21.11	26.85
LTE Band7	10	21100	25	#Mid	QPSK	21.12	26.86
LTE Band7	10	21100	25	#Max	QPSK	20.92	26.66
LTE Band7	10	21100	50	#0	QPSK	20.85	26.59
LTE Band7	10	21100	1	#0	QAM16	21.53	27.27
LTE Band7	10	21100	1	#Mid	QAM16	20.54	26.28
LTE Band7	10	21100	1	#Max	QAM16	21.67	27.41
LTE Band7	10	21100	25	#0	QAM16	19.99	25.73
LTE Band7	10	21100	25	#Mid	QAM16	19.98	25.72
LTE Band7	10	21100	25	#Max	QAM16	19.94	25.68
LTE Band7	10	21100	50	#0	QAM16	20.10	25.84
LTE Band7	10	21400	1	#0	QPSK	22.99	28.73
LTE Band7	10	21400	1	#Mid	QPSK	22.04	27.78
LTE Band7	10	21400	1	#Max	QPSK	21.91	27.65
LTE Band7	10	21400	25	#0	QPSK	21.40	27.14
LTE Band7	10	21400	25	#Mid	QPSK	21.40	27.14
LTE Band7	10	21400	25	#Max	QPSK	20.84	26.58
LTE Band7	10	21400	50	#0	QPSK	21.11	26.85
LTE Band7	10	21400	1	#0	QAM16	21.81	27.55
LTE Band7	10	21400	1	#Mid	QAM16	20.85	26.59
LTE Band7	10	21400	1	#Max	QAM16	20.70	26.44
LTE Band7	10	21400	25	#0	QAM16	20.55	26.29
LTE Band7	10	21400	25	#Mid	QAM16	20.53	26.27

LTE Band7	10	21400	25	#Max	QAM16	19.86	25.60
LTE Band7	10	21400	50	#0	QAM16	20.17	25.91
LTE Band7	15	20825	1	#0	QPSK	24.05	29.79
LTE Band7	15	20825	1	#Mid	QPSK	22.69	28.43
LTE Band7	15	20825	1	#Max	QPSK	22.86	28.60
LTE Band7	15	20825	36	#0	QPSK	22.01	27.75
LTE Band7	15	20825	36	#Mid	QPSK	22.02	27.76
LTE Band7	15	20825	36	#Max	QPSK	22.00	27.74
LTE Band7	15	20825	75	#0	QPSK	22.11	27.85
LTE Band7	15	20825	1	#0	QAM16	22.81	28.55
LTE Band7	15	20825	1	#Mid	QAM16	22.08	27.82
LTE Band7	15	20825	1	#Max	QAM16	22.17	27.91
LTE Band7	15	20825	36	#0	QAM16	21.12	26.86
LTE Band7	15	20825	36	#Mid	QAM16	21.13	26.87
LTE Band7	15	20825	36	#Max	QAM16	21.03	26.77
LTE Band7	15	20825	75	#0	QAM16	21.13	26.87
LTE Band7	15	21100	1	#0	QPSK	22.04	27.78
LTE Band7	15	21100	1	#Mid	QPSK	21.39	27.13
LTE Band7	15	21100	1	#Max	QPSK	22.57	28.31
LTE Band7	15	21100	36	#0	QPSK	21.06	26.80
LTE Band7	15	21100	36	#Mid	QPSK	21.04	26.78
LTE Band7	15	21100	36	#Max	QPSK	21.10	26.84
LTE Band7	15	21100	75	#0	QPSK	21.07	26.81
LTE Band7	15	21100	1	#0	QAM16	21.31	27.05
LTE Band7	15	21100	1	#Mid	QAM16	20.62	26.36
LTE Band7	15	21100	1	#Max	QAM16	21.73	27.47
LTE Band7	15	21100	36	#0	QAM16	19.92	25.66
LTE Band7	15	21100	36	#Mid	QAM16	19.92	25.66
LTE Band7	15	21100	36	#Max	QAM16	20.11	25.85
LTE Band7	15	21100	75	#0	QAM16	20.18	25.92
LTE Band7	15	21375	1	#0	QPSK	23.83	29.57
LTE Band7	15	21375	1	#Mid	QPSK	22.43	28.17
LTE Band7	15	21375	1	#Max	QPSK	21.77	27.51
LTE Band7	15	21375	36	#0	QPSK	21.88	27.62
LTE Band7	15	21375	36	#Mid	QPSK	21.86	27.60
LTE Band7	15	21375	36	#Max	QPSK	20.95	26.69
LTE Band7	15	21375	75	#0	QPSK	21.44	27.18
LTE Band7	15	21375	1	#0	QAM16	22.69	28.43
LTE Band7	15	21375	1	#Mid	QAM16	21.30	27.04
LTE Band7	15	21375	1	#Max	QAM16	20.72	26.46
LTE Band7	15	21375	36	#0	QAM16	20.95	26.69
LTE Band7	15	21375	36	#Mid	QAM16	20.93	26.67
LTE Band7	15	21375	36	#Max	QAM16	19.98	25.72

LTE Band7	15	21375	75	#0	QAM16	20.54	26.28
LTE Band7	20	20850	1	#0	QPSK	23.91	29.65
LTE Band7	20	20850	1	#Mid	QPSK	22.52	28.26
LTE Band7	20	20850	1	#Max	QPSK	22.90	28.64
LTE Band7	20	20850	50	#0	QPSK	21.77	27.51
LTE Band7	20	20850	50	#Mid	QPSK	21.81	27.55
LTE Band7	20	20850	50	#Max	QPSK	22.00	27.74
LTE Band7	20	20850	100	#0	QPSK	22.02	27.76
LTE Band7	20	20850	1	#0	QAM16	23.16	28.90
LTE Band7	20	20850	1	#Mid	QAM16	21.81	27.55
LTE Band7	20	20850	1	#Max	QAM16	22.21	27.95
LTE Band7	20	20850	50	#0	QAM16	20.79	26.53
LTE Band7	20	20850	50	#Mid	QAM16	20.82	26.56
LTE Band7	20	20850	50	#Max	QAM16	21.03	26.77
LTE Band7	20	20850	100	#0	QAM16	21.04	26.78
LTE Band7	20	21100	1	#0	QPSK	22.06	27.80
LTE Band7	20	21100	1	#Mid	QPSK	21.09	26.83
LTE Band7	20	21100	1	#Max	QPSK	23.60	29.34
LTE Band7	20	21100	50	#0	QPSK	20.95	26.69
LTE Band7	20	21100	50	#Mid	QPSK	21.02	26.76
LTE Band7	20	21100	50	#Max	QPSK	21.05	26.79
LTE Band7	20	21100	100	#0	QPSK	21.36	27.10
LTE Band7	20	21100	1	#0	QAM16	20.78	26.52
LTE Band7	20	21100	1	#Mid	QAM16	20.05	25.79
LTE Band7	20	21100	1	#Max	QAM16	22.16	27.90
LTE Band7	20	21100	50	#0	QAM16	20.03	25.77
LTE Band7	20	21100	50	#Mid	QAM16	20.04	25.78
LTE Band7	20	21100	50	#Max	QAM16	20.14	25.88
LTE Band7	20	21100	100	#0	QAM16	20.16	25.90
LTE Band7	20	21350	1	#0	QPSK	23.91	29.65
LTE Band7	20	21350	1	#Mid	QPSK	22.63	28.37
LTE Band7	20	21350	1	#Max	QPSK	21.71	27.45
LTE Band7	20	21350	50	#0	QPSK	22.29	28.03
LTE Band7	20	21350	50	#Mid	QPSK	22.34	28.08
LTE Band7	20	21350	50	#Max	QPSK	20.96	26.70
LTE Band7	20	21350	100	#0	QPSK	21.64	27.38
LTE Band7	20	21350	1	#0	QAM16	22.77	28.51
LTE Band7	20	21350	1	#Mid	QAM16	21.30	27.04
LTE Band7	20	21350	1	#Max	QAM16	20.64	26.38
LTE Band7	20	21350	50	#0	QAM16	21.52	27.26
LTE Band7	20	21350	50	#Mid	QAM16	21.51	27.25
LTE Band7	20	21350	50	#Max	QAM16	19.88	25.62
LTE Band7	20	21350	100	#0	QAM16	20.73	26.47

LTE Band7	5	20775	1	#0	QAM64	21.85	27.59
LTE Band7	5	20775	1	#Mid	QAM64	21.86	27.60
LTE Band7	5	20775	1	#Max	QAM64	21.38	27.12
LTE Band7	5	20775	12	#0	QAM64	21.36	27.10
LTE Band7	5	20775	12	#Mid	QAM64	21.35	27.09
LTE Band7	5	20775	12	#Max	QAM64	20.36	26.10
LTE Band7	5	20775	25	#0	QAM64	20.69	26.43
LTE Band7	5	21100	1	#0	QAM64	20.05	25.79
LTE Band7	5	21100	1	#Mid	QAM64	20.17	25.91
LTE Band7	5	21100	1	#Max	QAM64	20.28	26.02
LTE Band7	5	21100	12	#0	QAM64	19.22	24.96
LTE Band7	5	21100	12	#Mid	QAM64	19.22	24.96
LTE Band7	5	21100	12	#Max	QAM64	19.01	24.75
LTE Band7	5	21100	25	#0	QAM64	19.00	24.74
LTE Band7	5	21425	1	#0	QAM64	20.47	26.21
LTE Band7	5	21425	1	#Mid	QAM64	20.60	26.34
LTE Band7	5	21425	1	#Max	QAM64	19.98	25.72
LTE Band7	5	21425	12	#0	QAM64	19.69	25.43
LTE Band7	5	21425	12	#Mid	QAM64	19.69	25.43
LTE Band7	5	21425	12	#Max	QAM64	19.17	24.91
LTE Band7	5	21425	25	#0	QAM64	19.25	24.99
LTE Band7	10	20800	1	#0	QAM64	22.79	28.53
LTE Band7	10	20800	1	#Mid	QAM64	21.80	27.54
LTE Band7	10	20800	1	#Max	QAM64	21.80	27.54
LTE Band7	10	20800	25	#0	QAM64	21.03	26.77
LTE Band7	10	20800	25	#Mid	QAM64	21.03	26.77
LTE Band7	10	20800	25	#Max	QAM64	20.46	26.20
LTE Band7	10	20800	50	#0	QAM64	20.67	26.41
LTE Band7	10	21100	1	#0	QAM64	20.93	26.67
LTE Band7	10	21100	1	#Mid	QAM64	19.95	25.69
LTE Band7	10	21100	1	#Max	QAM64	20.97	26.71
LTE Band7	10	21100	25	#0	QAM64	19.28	25.02
LTE Band7	10	21100	25	#Mid	QAM64	19.27	25.01
LTE Band7	10	21100	25	#Max	QAM64	19.36	25.10
LTE Band7	10	21100	50	#0	QAM64	19.37	25.11
LTE Band7	10	21400	1	#0	QAM64	21.43	27.17
LTE Band7	10	21400	1	#Mid	QAM64	20.43	26.17
LTE Band7	10	21400	1	#Max	QAM64	20.11	25.85
LTE Band7	10	21400	25	#0	QAM64	20.05	25.79
LTE Band7	10	21400	25	#Mid	QAM64	20.04	25.78
LTE Band7	10	21400	25	#Max	QAM64	19.38	25.12
LTE Band7	10	21400	50	#0	QAM64	19.73	25.47
LTE Band7	15	20825	1	#0	QAM64	22.23	27.97

LTE Band7	15	20825	1	#Mid	QAM64	21.68	27.42
LTE Band7	15	20825	1	#Max	QAM64	21.84	27.58
LTE Band7	15	20825	36	#0	QAM64	20.57	26.31
LTE Band7	15	20825	36	#Mid	QAM64	20.58	26.32
LTE Band7	15	20825	36	#Max	QAM64	20.64	26.38
LTE Band7	15	20825	75	#0	QAM64	20.71	26.45
LTE Band7	15	21100	1	#0	QAM64	20.80	26.54
LTE Band7	15	21100	1	#Mid	QAM64	19.95	25.69
LTE Band7	15	21100	1	#Max	QAM64	21.29	27.03
LTE Band7	15	21100	36	#0	QAM64	19.30	25.04
LTE Band7	15	21100	36	#Mid	QAM64	19.29	25.03
LTE Band7	15	21100	36	#Max	QAM64	19.47	25.21
LTE Band7	15	21100	75	#0	QAM64	19.52	25.26
LTE Band7	15	21375	1	#0	QAM64	22.37	28.11
LTE Band7	15	21375	1	#Mid	QAM64	20.90	26.64
LTE Band7	15	21375	1	#Max	QAM64	20.20	25.94
LTE Band7	15	21375	36	#0	QAM64	20.54	26.28
LTE Band7	15	21375	36	#Mid	QAM64	20.52	26.26
LTE Band7	15	21375	36	#Max	QAM64	19.48	25.22
LTE Band7	15	21375	75	#0	QAM64	20.06	25.80
LTE Band7	20	20850	1	#0	QAM64	22.62	28.36
LTE Band7	20	20850	1	#Mid	QAM64	21.41	27.15
LTE Band7	20	20850	1	#Max	QAM64	21.83	27.57
LTE Band7	20	20850	50	#0	QAM64	20.29	26.03
LTE Band7	20	20850	50	#Mid	QAM64	20.32	26.06
LTE Band7	20	20850	50	#Max	QAM64	20.61	26.35
LTE Band7	20	20850	100	#0	QAM64	20.55	26.29
LTE Band7	20	21100	1	#0	QAM64	20.27	26.01
LTE Band7	20	21100	1	#Mid	QAM64	19.40	25.14
LTE Band7	20	21100	1	#Max	QAM64	21.66	27.40
LTE Band7	20	21100	50	#0	QAM64	19.44	25.18
LTE Band7	20	21100	50	#Mid	QAM64	19.43	25.17
LTE Band7	20	21100	50	#Max	QAM64	19.55	25.29
LTE Band7	20	21100	100	#0	QAM64	19.55	25.29
LTE Band7	20	21350	1	#0	QAM64	22.43	28.17
LTE Band7	20	21350	1	#Mid	QAM64	20.99	26.73
LTE Band7	20	21350	1	#Max	QAM64	20.15	25.89
LTE Band7	20	21350	50	#0	QAM64	21.03	26.77
LTE Band7	20	21350	50	#Mid	QAM64	21.02	26.76
LTE Band7	20	21350	50	#Max	QAM64	19.46	25.20
LTE Band7	20	21350	100	#0	QAM64	20.29	26.03

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	EIRP (dBm)
LTE Band38	5	37775	1	#0	QPSK	26.39	31.93
LTE Band38	5	37775	1	#Mid	QPSK	26.26	31.80
LTE Band38	5	37775	1	#Max	QPSK	25.57	31.11
LTE Band38	5	37775	12	#0	QPSK	25.63	31.17
LTE Band38	5	37775	12	#Mid	QPSK	25.66	31.20
LTE Band38	5	37775	12	#Max	QPSK	25.00	30.54
LTE Band38	5	37775	25	#0	QPSK	25.13	30.67
LTE Band38	5	37775	1	#0	QAM16	25.71	31.25
LTE Band38	5	37775	1	#Mid	QAM16	25.53	31.07
LTE Band38	5	37775	1	#Max	QAM16	24.82	30.36
LTE Band38	5	37775	12	#0	QAM16	24.73	30.27
LTE Band38	5	37775	12	#Mid	QAM16	24.74	30.28
LTE Band38	5	37775	12	#Max	QAM16	24.04	29.58
LTE Band38	5	37775	25	#0	QAM16	24.08	29.62
LTE Band38	5	38000	1	#0	QPSK	21.33	26.87
LTE Band38	5	38000	1	#Mid	QPSK	21.27	26.81
LTE Band38	5	38000	1	#Max	QPSK	20.66	26.20
LTE Band38	5	38000	12	#0	QPSK	20.78	26.32
LTE Band38	5	38000	12	#Mid	QPSK	20.82	26.36
LTE Band38	5	38000	12	#Max	QPSK	20.02	25.56
LTE Band38	5	38000	25	#0	QPSK	20.14	25.68
LTE Band38	5	38000	1	#0	QAM16	20.53	26.07
LTE Band38	5	38000	1	#Mid	QAM16	20.50	26.04
LTE Band38	5	38000	1	#Max	QAM16	19.90	25.44
LTE Band38	5	38000	12	#0	QAM16	19.53	25.07
LTE Band38	5	38000	12	#Mid	QAM16	19.54	25.08
LTE Band38	5	38000	12	#Max	QAM16	18.67	24.21
LTE Band38	5	38000	25	#0	QAM16	18.87	24.41
LTE Band38	5	38225	1	#0	QPSK	23.33	28.87
LTE Band38	5	38225	1	#Mid	QPSK	24.54	30.08
LTE Band38	5	38225	1	#Max	QPSK	24.53	30.07
LTE Band38	5	38225	12	#0	QPSK	23.44	28.98
LTE Band38	5	38225	12	#Mid	QPSK	23.45	28.99
LTE Band38	5	38225	12	#Max	QPSK	23.78	29.32
LTE Band38	5	38225	25	#0	QPSK	23.42	28.96
LTE Band38	5	38225	1	#0	QAM16	22.53	28.07
LTE Band38	5	38225	1	#Mid	QAM16	23.75	29.29
LTE Band38	5	38225	1	#Max	QAM16	23.73	29.27
LTE Band38	5	38225	12	#0	QAM16	22.42	27.96
LTE Band38	5	38225	12	#Mid	QAM16	22.43	27.97
LTE Band38	5	38225	12	#Max	QAM16	22.91	28.45

LTE Band38	5	38225	25	#0	QAM16	22.50	28.04
LTE Band38	10	37800	1	#0	QPSK	26.73	32.27
LTE Band38	10	37800	1	#Mid	QPSK	25.85	31.39
LTE Band38	10	37800	1	#Max	QPSK	24.96	30.50
LTE Band38	10	37800	25	#0	QPSK	25.40	30.94
LTE Band38	10	37800	25	#Mid	QPSK	25.42	30.96
LTE Band38	10	37800	25	#Max	QPSK	24.53	30.07
LTE Band38	10	37800	50	#0	QPSK	25.11	30.65
LTE Band38	10	37800	1	#0	QAM16	26.11	31.65
LTE Band38	10	37800	1	#Mid	QAM16	25.32	30.86
LTE Band38	10	37800	1	#Max	QAM16	24.45	29.99
LTE Band38	10	37800	25	#0	QAM16	24.72	30.26
LTE Band38	10	37800	25	#Mid	QAM16	24.78	30.32
LTE Band38	10	37800	25	#Max	QAM16	23.89	29.43
LTE Band38	10	37800	50	#0	QAM16	24.42	29.96
LTE Band38	10	38000	1	#0	QPSK	22.22	27.76
LTE Band38	10	38000	1	#Mid	QPSK	21.43	26.97
LTE Band38	10	38000	1	#Max	QPSK	21.20	26.74
LTE Band38	10	38000	25	#0	QPSK	20.78	26.32
LTE Band38	10	38000	25	#Mid	QPSK	20.79	26.33
LTE Band38	10	38000	25	#Max	QPSK	20.23	25.77
LTE Band38	10	38000	50	#0	QPSK	20.53	26.07
LTE Band38	10	38000	1	#0	QAM16	21.26	26.80
LTE Band38	10	38000	1	#Mid	QAM16	20.50	26.04
LTE Band38	10	38000	1	#Max	QAM16	20.29	25.83
LTE Band38	10	38000	25	#0	QAM16	19.67	25.21
LTE Band38	10	38000	25	#Mid	QAM16	19.69	25.23
LTE Band38	10	38000	25	#Max	QAM16	19.16	24.70
LTE Band38	10	38000	50	#0	QAM16	19.26	24.80
LTE Band38	10	38200	1	#0	QPSK	22.24	27.78
LTE Band38	10	38200	1	#Mid	QPSK	23.61	29.15
LTE Band38	10	38200	1	#Max	QPSK	25.45	30.99
LTE Band38	10	38200	25	#0	QPSK	22.09	27.63
LTE Band38	10	38200	25	#Mid	QPSK	22.10	27.64
LTE Band38	10	38200	25	#Max	QPSK	23.73	29.27
LTE Band38	10	38200	50	#0	QPSK	22.91	28.45
LTE Band38	10	38200	1	#0	QAM16	21.33	26.87
LTE Band38	10	38200	1	#Mid	QAM16	22.47	28.01
LTE Band38	10	38200	1	#Max	QAM16	24.54	30.08
LTE Band38	10	38200	25	#0	QAM16	21.00	26.54
LTE Band38	10	38200	25	#Mid	QAM16	21.01	26.55
LTE Band38	10	38200	25	#Max	QAM16	22.53	28.07
LTE Band38	10	38200	50	#0	QAM16	21.70	27.24

LTE Band38	15	37825	1	#0	QPSK	26.80	32.34
LTE Band38	15	37825	1	#Mid	QPSK	25.23	30.77
LTE Band38	15	37825	1	#Max	QPSK	23.57	29.11
LTE Band38	15	37825	36	#0	QPSK	25.10	30.64
LTE Band38	15	37825	36	#Mid	QPSK	25.16	30.70
LTE Band38	15	37825	36	#Max	QPSK	24.10	29.64
LTE Band38	15	37825	75	#0	QPSK	25.11	30.65
LTE Band38	15	37825	1	#0	QAM16	26.28	31.82
LTE Band38	15	37825	1	#Mid	QAM16	25.28	30.82
LTE Band38	15	37825	1	#Max	QAM16	23.29	28.83
LTE Band38	15	37825	36	#0	QAM16	24.82	30.36
LTE Band38	15	37825	36	#Mid	QAM16	24.79	30.33
LTE Band38	15	37825	36	#Max	QAM16	23.07	28.61
LTE Band38	15	37825	75	#0	QAM16	24.23	29.77
LTE Band38	15	38000	1	#0	QPSK	22.60	28.14
LTE Band38	15	38000	1	#Mid	QPSK	21.42	26.96
LTE Band38	15	38000	1	#Max	QPSK	20.99	26.53
LTE Band38	15	38000	36	#0	QPSK	20.85	26.39
LTE Band38	15	38000	36	#Mid	QPSK	20.85	26.39
LTE Band38	15	38000	36	#Max	QPSK	20.14	25.68
LTE Band38	15	38000	75	#0	QPSK	20.66	26.20
LTE Band38	15	38000	1	#0	QAM16	21.70	27.24
LTE Band38	15	38000	1	#Mid	QAM16	20.55	26.09
LTE Band38	15	38000	1	#Max	QAM16	20.17	25.71
LTE Band38	15	38000	36	#0	QAM16	19.60	25.14
LTE Band38	15	38000	36	#Mid	QAM16	19.61	25.15
LTE Band38	15	38000	36	#Max	QAM16	19.04	24.58
LTE Band38	15	38000	75	#0	QAM16	19.40	24.94
LTE Band38	15	38175	1	#0	QPSK	21.21	26.75
LTE Band38	15	38175	1	#Mid	QPSK	22.88	28.42
LTE Band38	15	38175	1	#Max	QPSK	25.35	30.89
LTE Band38	15	38175	36	#0	QPSK	20.66	26.20
LTE Band38	15	38175	36	#Mid	QPSK	20.67	26.21
LTE Band38	15	38175	36	#Max	QPSK	23.00	28.54
LTE Band38	15	38175	75	#0	QPSK	22.08	27.62
LTE Band38	15	38175	1	#0	QAM16	20.22	25.76
LTE Band38	15	38175	1	#Mid	QAM16	21.83	27.37
LTE Band38	15	38175	1	#Max	QAM16	24.53	30.07
LTE Band38	15	38175	36	#0	QAM16	19.77	25.31
LTE Band38	15	38175	36	#Mid	QAM16	19.78	25.32
LTE Band38	15	38175	36	#Max	QAM16	22.13	27.67
LTE Band38	15	38175	75	#0	QAM16	21.26	26.80
LTE Band38	20	37850	1	#0	QPSK	27.36	32.90

LTE Band38	20	37850	1	#Mid	QPSK	25.06	30.60
LTE Band38	20	37850	1	#Max	QPSK	22.44	27.98
LTE Band38	20	37850	50	#0	QPSK	25.27	30.81
LTE Band38	20	37850	50	#Mid	QPSK	25.43	30.97
LTE Band38	20	37850	50	#Max	QPSK	22.90	28.44
LTE Band38	20	37850	100	#0	QPSK	24.38	29.92
LTE Band38	20	37850	1	#0	QAM16	26.07	31.61
LTE Band38	20	37850	1	#Mid	QAM16	24.06	29.60
LTE Band38	20	37850	1	#Max	QAM16	21.77	27.31
LTE Band38	20	37850	50	#0	QAM16	24.15	29.69
LTE Band38	20	37850	50	#Mid	QAM16	24.14	29.68
LTE Band38	20	37850	50	#Max	QAM16	21.73	27.27
LTE Band38	20	37850	100	#0	QAM16	23.15	28.69
LTE Band38	20	38000	1	#0	QPSK	23.21	28.75
LTE Band38	20	38000	1	#Mid	QPSK	21.38	26.92
LTE Band38	20	38000	1	#Max	QPSK	21.16	26.70
LTE Band38	20	38000	50	#0	QPSK	21.13	26.67
LTE Band38	20	38000	50	#Mid	QPSK	21.14	26.68
LTE Band38	20	38000	50	#Max	QPSK	20.19	25.73
LTE Band38	20	38000	100	#0	QPSK	20.77	26.31
LTE Band38	20	38000	1	#0	QAM16	22.38	27.92
LTE Band38	20	38000	1	#Mid	QAM16	20.32	25.86
LTE Band38	20	38000	1	#Max	QAM16	20.26	25.80
LTE Band38	20	38000	50	#0	QAM16	20.13	25.67
LTE Band38	20	38000	50	#Mid	QAM16	20.13	25.67
LTE Band38	20	38000	50	#Max	QAM16	19.06	24.60
LTE Band38	20	38000	100	#0	QAM16	19.66	25.20
LTE Band38	20	38150	1	#0	QPSK	21.10	26.64
LTE Band38	20	38150	1	#Mid	QPSK	22.09	27.63
LTE Band38	20	38150	1	#Max	QPSK	25.32	30.86
LTE Band38	20	38150	50	#0	QPSK	20.39	25.93
LTE Band38	20	38150	50	#Mid	QPSK	20.40	25.94
LTE Band38	20	38150	50	#Max	QPSK	22.61	28.15
LTE Band38	20	38150	100	#0	QPSK	21.65	27.19
LTE Band38	20	38150	1	#0	QAM16	19.83	25.37
LTE Band38	20	38150	1	#Mid	QAM16	20.71	26.25
LTE Band38	20	38150	1	#Max	QAM16	24.16	29.70
LTE Band38	20	38150	50	#0	QAM16	19.36	24.90
LTE Band38	20	38150	50	#Mid	QAM16	19.37	24.91
LTE Band38	20	38150	50	#Max	QAM16	21.55	27.09
LTE Band38	20	38150	100	#0	QAM16	20.53	26.07
LTE Band38	5	38225	1	#Max	QAM64	20.93	26.47
LTE Band38	5	38225	12	#0	QAM64	20.91	26.45

LTE Band38	5	38225	12	#Mid	QAM64	20.91	26.45
LTE Band38	5	38225	12	#Max	QAM64	20.53	26.07
LTE Band38	5	38225	25	#0	QAM64	20.53	26.07
LTE Band38	10	37800	1	#0	QAM64	23.21	28.75
LTE Band38	10	37800	1	#Mid	QAM64	23.21	28.75
LTE Band38	10	37800	1	#Max	QAM64	23.42	28.96
LTE Band38	10	37800	25	#0	QAM64	21.86	27.40
LTE Band38	10	37800	25	#Mid	QAM64	21.87	27.41
LTE Band38	10	37800	25	#Max	QAM64	21.93	27.47
LTE Band38	10	37800	50	#0	QAM64	21.90	27.44
LTE Band38	10	38000	1	#0	QAM64	22.69	28.23
LTE Band38	10	38000	1	#Mid	QAM64	22.28	27.82
LTE Band38	10	38000	1	#Max	QAM64	22.33	27.87
LTE Band38	10	38000	25	#0	QAM64	21.52	27.06
LTE Band38	10	38000	25	#Mid	QAM64	21.54	27.08
LTE Band38	10	38000	25	#Max	QAM64	21.17	26.71
LTE Band38	10	38000	50	#0	QAM64	21.26	26.80
LTE Band38	10	38200	1	#0	QAM64	21.50	27.04
LTE Band38	10	38200	1	#Mid	QAM64	21.34	26.88
LTE Band38	10	38200	1	#Max	QAM64	21.73	27.27
LTE Band38	10	38200	25	#0	QAM64	20.65	26.19
LTE Band38	10	38200	25	#Mid	QAM64	20.66	26.20
LTE Band38	10	38200	25	#Max	QAM64	20.78	26.32
LTE Band38	10	38200	50	#0	QAM64	20.65	26.19
LTE Band38	15	37825	1	#0	QAM64	23.45	28.99
LTE Band38	15	37825	1	#Mid	QAM64	23.35	28.89
LTE Band38	15	37825	1	#Max	QAM64	23.33	28.87
LTE Band38	15	37825	36	#0	QAM64	21.90	27.44
LTE Band38	15	37825	36	#Mid	QAM64	21.91	27.45
LTE Band38	15	37825	36	#Max	QAM64	21.94	27.48
LTE Band38	15	37825	75	#0	QAM64	22.02	27.56
LTE Band38	15	38000	1	#0	QAM64	22.79	28.33
LTE Band38	15	38000	1	#Mid	QAM64	22.43	27.97
LTE Band38	15	38000	1	#Max	QAM64	21.97	27.51
LTE Band38	15	38000	36	#0	QAM64	21.21	26.75
LTE Band38	15	38000	36	#Mid	QAM64	21.22	26.76
LTE Band38	15	38000	36	#Max	QAM64	20.97	26.51
LTE Band38	15	38000	75	#0	QAM64	21.25	26.79
LTE Band38	15	38175	1	#0	QAM64	21.69	27.23
LTE Band38	15	38175	1	#Mid	QAM64	21.63	27.17
LTE Band38	15	38175	1	#Max	QAM64	21.89	27.43
LTE Band38	15	38175	36	#0	QAM64	20.45	25.99
LTE Band38	15	38175	36	#Mid	QAM64	20.46	26.00

LTE Band38	15	38175	36	#Max	QAM64	20.73	26.27
LTE Band38	15	38175	75	#0	QAM64	20.75	26.29
LTE Band38	20	37850	1	#0	QAM64	23.21	28.75
LTE Band38	20	37850	1	#Mid	QAM64	23.10	28.64
LTE Band38	20	37850	1	#Max	QAM64	22.86	28.40
LTE Band38	20	37850	50	#0	QAM64	21.85	27.39
LTE Band38	20	37850	50	#Mid	QAM64	21.86	27.40
LTE Band38	20	37850	50	#Max	QAM64	21.75	27.29
LTE Band38	20	37850	100	#0	QAM64	21.79	27.33
LTE Band38	20	38000	1	#0	QAM64	22.77	28.31
LTE Band38	20	38000	1	#Mid	QAM64	22.15	27.69
LTE Band38	20	38000	1	#Max	QAM64	21.91	27.45
LTE Band38	20	38000	50	#0	QAM64	21.41	26.95
LTE Band38	20	38000	50	#Mid	QAM64	21.42	26.96
LTE Band38	20	38000	50	#Max	QAM64	20.93	26.47
LTE Band38	20	38000	100	#0	QAM64	21.22	26.76
LTE Band38	20	38150	1	#0	QAM64	21.83	27.37
LTE Band38	20	38150	1	#Mid	QAM64	21.18	26.72
LTE Band38	20	38150	1	#Max	QAM64	21.74	27.28
LTE Band38	20	38150	50	#0	QAM64	20.71	26.25
LTE Band38	20	38150	50	#Mid	QAM64	20.72	26.26
LTE Band38	20	38150	50	#Max	QAM64	20.74	26.28
LTE Band38	20	38150	100	#0	QAM64	20.68	26.22

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	EIRP (dBm)
LTE Band41	5	39675	1	#0	QPSK	24.15	29.89
LTE Band41	5	39675	1	#Mid	QPSK	24.51	30.25
LTE Band41	5	39675	1	#Max	QPSK	24.26	30.00
LTE Band41	5	39675	12	#0	QPSK	23.71	29.45
LTE Band41	5	39675	12	#Mid	QPSK	23.71	29.45
LTE Band41	5	39675	12	#Max	QPSK	23.56	29.30
LTE Band41	5	39675	25	#0	QPSK	23.59	29.33
LTE Band41	5	39675	1	#0	QAM16	23.61	29.35
LTE Band41	5	39675	1	#Mid	QAM16	23.97	29.71
LTE Band41	5	39675	1	#Max	QAM16	23.71	29.45
LTE Band41	5	39675	12	#0	QAM16	22.79	28.53
LTE Band41	5	39675	12	#Mid	QAM16	22.80	28.54
LTE Band41	5	39675	12	#Max	QAM16	22.51	28.25
LTE Band41	5	39675	25	#0	QAM16	22.58	28.32
LTE Band41	5	40620	1	#0	QPSK	24.05	29.79
LTE Band41	5	40620	1	#Mid	QPSK	24.16	29.90
LTE Band41	5	40620	1	#Max	QPSK	23.78	29.52

LTE Band41	5	40620	12	#0	QPSK	23.47	29.21
LTE Band41	5	40620	12	#Mid	QPSK	23.47	29.21
LTE Band41	5	40620	12	#Max	QPSK	22.96	28.70
LTE Band41	5	40620	25	#0	QPSK	22.97	28.71
LTE Band41	5	40620	1	#0	QAM16	23.07	28.81
LTE Band41	5	40620	1	#Mid	QAM16	23.19	28.93
LTE Band41	5	40620	1	#Max	QAM16	22.83	28.57
LTE Band41	5	40620	12	#0	QAM16	22.30	28.04
LTE Band41	5	40620	12	#Mid	QAM16	22.30	28.04
LTE Band41	5	40620	12	#Max	QAM16	22.02	27.76
LTE Band41	5	40620	25	#0	QAM16	22.03	27.77
LTE Band41	5	41565	1	#0	QPSK	24.18	29.92
LTE Band41	5	41565	1	#Mid	QPSK	24.22	29.96
LTE Band41	5	41565	1	#Max	QPSK	23.94	29.68
LTE Band41	5	41565	12	#0	QPSK	23.78	29.52
LTE Band41	5	41565	12	#Mid	QPSK	23.77	29.51
LTE Band41	5	41565	12	#Max	QPSK	23.27	29.01
LTE Band41	5	41565	25	#0	QPSK	23.29	29.03
LTE Band41	5	41565	1	#0	QAM16	23.47	29.21
LTE Band41	5	41565	1	#Mid	QAM16	23.64	29.38
LTE Band41	5	41565	1	#Max	QAM16	23.36	29.10
LTE Band41	5	41565	12	#0	QAM16	22.84	28.58
LTE Band41	5	41565	12	#Mid	QAM16	22.84	28.58
LTE Band41	5	41565	12	#Max	QAM16	22.21	27.95
LTE Band41	5	41565	25	#0	QAM16	22.21	27.95
LTE Band41	10	39700	1	#0	QPSK	24.72	30.46
LTE Band41	10	39700	1	#Mid	QPSK	24.52	30.26
LTE Band41	10	39700	1	#Max	QPSK	25.01	30.75
LTE Band41	10	39700	25	#0	QPSK	23.68	29.42
LTE Band41	10	39700	25	#Mid	QPSK	23.68	29.42
LTE Band41	10	39700	25	#Max	QPSK	23.65	29.39
LTE Band41	10	39700	50	#0	QPSK	23.66	29.40
LTE Band41	10	39700	1	#0	QAM16	23.86	29.60
LTE Band41	10	39700	1	#Mid	QAM16	23.93	29.67
LTE Band41	10	39700	1	#Max	QAM16	24.18	29.92
LTE Band41	10	39700	25	#0	QAM16	22.85	28.59
LTE Band41	10	39700	25	#Mid	QAM16	22.85	28.59
LTE Band41	10	39700	25	#Max	QAM16	22.83	28.57
LTE Band41	10	39700	50	#0	QAM16	22.77	28.51
LTE Band41	10	40620	1	#0	QPSK	24.28	30.02
LTE Band41	10	40620	1	#Mid	QPSK	24.21	29.95
LTE Band41	10	40620	1	#Max	QPSK	24.01	29.75
LTE Band41	10	40620	25	#0	QPSK	23.33	29.07

LTE Band41	10	40620	25	#Mid	QPSK	23.33	29.07
LTE Band41	10	40620	25	#Max	QPSK	23.08	28.82
LTE Band41	10	40620	50	#0	QPSK	23.21	28.95
LTE Band41	10	40620	1	#0	QAM16	23.40	29.14
LTE Band41	10	40620	1	#Mid	QAM16	23.10	28.84
LTE Band41	10	40620	1	#Max	QAM16	23.15	28.89
LTE Band41	10	40620	25	#0	QAM16	22.22	27.96
LTE Band41	10	40620	25	#Mid	QAM16	22.21	27.95
LTE Band41	10	40620	25	#Max	QAM16	21.98	27.72
LTE Band41	10	40620	50	#0	QAM16	22.07	27.81
LTE Band41	10	41540	1	#0	QPSK	24.61	30.35
LTE Band41	10	41540	1	#Mid	QPSK	24.36	30.10
LTE Band41	10	41540	1	#Max	QPSK	24.31	30.05
LTE Band41	10	41540	25	#0	QPSK	23.71	29.45
LTE Band41	10	41540	25	#Mid	QPSK	23.71	29.45
LTE Band41	10	41540	25	#Max	QPSK	23.51	29.25
LTE Band41	10	41540	50	#0	QPSK	23.67	29.41
LTE Band41	10	41540	1	#0	QAM16	23.65	29.39
LTE Band41	10	41540	1	#Mid	QAM16	23.44	29.18
LTE Band41	10	41540	1	#Max	QAM16	23.38	29.12
LTE Band41	10	41540	25	#0	QAM16	22.74	28.48
LTE Band41	10	41540	25	#Mid	QAM16	22.75	28.49
LTE Band41	10	41540	25	#Max	QAM16	22.55	28.29
LTE Band41	10	41540	50	#0	QAM16	22.70	28.44
LTE Band41	15	39725	1	#0	QPSK	24.93	30.67
LTE Band41	15	39725	1	#Mid	QPSK	24.54	30.28
LTE Band41	15	39725	1	#Max	QPSK	24.89	30.63
LTE Band41	15	39725	36	#0	QPSK	23.51	29.25
LTE Band41	15	39725	36	#Mid	QPSK	23.52	29.26
LTE Band41	15	39725	36	#Max	QPSK	23.70	29.44
LTE Band41	15	39725	75	#0	QPSK	23.62	29.36
LTE Band41	15	39725	1	#0	QAM16	24.09	29.83
LTE Band41	15	39725	1	#Mid	QAM16	23.97	29.71
LTE Band41	15	39725	1	#Max	QAM16	24.05	29.79
LTE Band41	15	39725	36	#0	QAM16	22.62	28.36
LTE Band41	15	39725	36	#Mid	QAM16	22.62	28.36
LTE Band41	15	39725	36	#Max	QAM16	22.82	28.56
LTE Band41	15	39725	75	#0	QAM16	22.75	28.49
LTE Band41	15	40620	1	#0	QPSK	24.51	30.25
LTE Band41	15	40620	1	#Mid	QPSK	24.26	30.00
LTE Band41	15	40620	1	#Max	QPSK	23.75	29.49
LTE Band41	15	40620	36	#0	QPSK	23.18	28.92
LTE Band41	15	40620	36	#Mid	QPSK	23.18	28.92

LTE Band41	15	40620	36	#Max	QPSK	22.80	28.54
LTE Band41	15	40620	75	#0	QPSK	23.20	28.94
LTE Band41	15	40620	1	#0	QAM16	23.61	29.35
LTE Band41	15	40620	1	#Mid	QAM16	23.14	28.88
LTE Band41	15	40620	1	#Max	QAM16	22.72	28.46
LTE Band41	15	40620	36	#0	QAM16	22.05	27.79
LTE Band41	15	40620	36	#Mid	QAM16	22.05	27.79
LTE Band41	15	40620	36	#Max	QAM16	21.79	27.53
LTE Band41	15	40620	75	#0	QAM16	22.07	27.81
LTE Band41	15	41515	1	#0	QPSK	24.80	30.54
LTE Band41	15	41515	1	#Mid	QPSK	24.50	30.24
LTE Band41	15	41515	1	#Max	QPSK	24.32	30.06
LTE Band41	15	41515	36	#0	QPSK	23.63	29.37
LTE Band41	15	41515	36	#Mid	QPSK	23.63	29.37
LTE Band41	15	41515	36	#Max	QPSK	23.51	29.25
LTE Band41	15	41515	75	#0	QPSK	23.59	29.33
LTE Band41	15	41515	1	#0	QAM16	23.91	29.65
LTE Band41	15	41515	1	#Mid	QAM16	23.67	29.41
LTE Band41	15	41515	1	#Max	QAM16	23.46	29.20
LTE Band41	15	41515	36	#0	QAM16	22.63	28.37
LTE Band41	15	41515	36	#Mid	QAM16	22.64	28.38
LTE Band41	15	41515	36	#Max	QAM16	22.55	28.29
LTE Band41	15	41515	75	#0	QAM16	22.64	28.38
LTE Band41	20	39750	1	#0	QPSK	24.76	30.50
LTE Band41	20	39750	1	#Mid	QPSK	24.45	30.19
LTE Band41	20	39750	1	#Max	QPSK	24.80	30.54
LTE Band41	20	39750	50	#0	QPSK	23.49	29.23
LTE Band41	20	39750	50	#Mid	QPSK	23.50	29.24
LTE Band41	20	39750	50	#Max	QPSK	23.52	29.26
LTE Band41	20	39750	100	#0	QPSK	23.58	29.32
LTE Band41	20	39750	1	#0	QAM16	24.03	29.77
LTE Band41	20	39750	1	#Mid	QAM16	23.75	29.49
LTE Band41	20	39750	1	#Max	QAM16	24.08	29.82
LTE Band41	20	39750	50	#0	QAM16	22.62	28.36
LTE Band41	20	39750	50	#Mid	QAM16	22.62	28.36
LTE Band41	20	39750	50	#Max	QAM16	22.64	28.38
LTE Band41	20	39750	100	#0	QAM16	22.69	28.43
LTE Band41	20	40620	1	#0	QPSK	24.52	30.26
LTE Band41	20	40620	1	#Mid	QPSK	24.12	29.86
LTE Band41	20	40620	1	#Max	QPSK	23.63	29.37
LTE Band41	20	40620	50	#0	QPSK	23.22	28.96
LTE Band41	20	40620	50	#Mid	QPSK	23.22	28.96
LTE Band41	20	40620	50	#Max	QPSK	22.84	28.58

LTE Band41	20	40620	100	#0	QPSK	23.09	28.83
LTE Band41	20	40620	1	#0	QAM16	23.55	29.29
LTE Band41	20	40620	1	#Mid	QAM16	22.92	28.66
LTE Band41	20	40620	1	#Max	QAM16	22.67	28.41
LTE Band41	20	40620	50	#0	QAM16	22.05	27.79
LTE Band41	20	40620	50	#Mid	QAM16	22.05	27.79
LTE Band41	20	40620	50	#Max	QAM16	21.68	27.42
LTE Band41	20	40620	100	#0	QAM16	21.98	27.72
LTE Band41	20	41490	1	#0	QPSK	24.88	30.62
LTE Band41	20	41490	1	#Mid	QPSK	24.37	30.11
LTE Band41	20	41490	1	#Max	QPSK	24.38	30.12
LTE Band41	20	41490	50	#0	QPSK	23.68	29.42
LTE Band41	20	41490	50	#Mid	QPSK	23.69	29.43
LTE Band41	20	41490	50	#Max	QPSK	23.58	29.32
LTE Band41	20	41490	100	#0	QPSK	23.53	29.27
LTE Band41	20	41490	1	#0	QAM16	23.59	29.33
LTE Band41	20	41490	1	#Mid	QAM16	23.22	28.96
LTE Band41	20	41490	1	#Max	QAM16	23.05	28.79
LTE Band41	20	41490	50	#0	QAM16	22.75	28.49
LTE Band41	20	41490	50	#Mid	QAM16	22.76	28.50
LTE Band41	20	41490	50	#Max	QAM16	22.67	28.41
LTE Band41	20	41490	100	#0	QAM16	22.57	28.31
LTE Band41	5	39675	1	#0	QAM64	22.80	28.54
LTE Band41	5	39675	1	#Mid	QAM64	23.17	28.91
LTE Band41	5	39675	1	#Max	QAM64	22.90	28.64
LTE Band41	5	39675	12	#0	QAM64	22.14	27.88
LTE Band41	5	39675	12	#Mid	QAM64	22.14	27.88
LTE Band41	5	39675	12	#Max	QAM64	21.89	27.63
LTE Band41	5	39675	25	#0	QAM64	21.87	27.61
LTE Band41	5	40620	1	#0	QAM64	22.51	28.25
LTE Band41	5	40620	1	#Mid	QAM64	22.64	28.38
LTE Band41	5	40620	1	#Max	QAM64	22.27	28.01
LTE Band41	5	40620	12	#0	QAM64	21.58	27.32
LTE Band41	5	40620	12	#Mid	QAM64	21.58	27.32
LTE Band41	5	40620	12	#Max	QAM64	21.21	26.95
LTE Band41	5	40620	25	#0	QAM64	21.26	27.00
LTE Band41	5	41565	1	#0	QAM64	22.78	28.52
LTE Band41	5	41565	1	#Mid	QAM64	22.84	28.58
LTE Band41	5	41565	1	#Max	QAM64	22.57	28.31
LTE Band41	5	41565	12	#0	QAM64	22.14	27.88
LTE Band41	5	41565	12	#Mid	QAM64	22.05	27.79
LTE Band41	5	41565	12	#Max	QAM64	21.57	27.31
LTE Band41	5	41565	25	#0	QAM64	21.61	27.35

LTE Band41	10	39700	1	#0	QAM64	23.21	28.95
LTE Band41	10	39700	1	#Mid	QAM64	23.15	28.89
LTE Band41	10	39700	1	#Max	QAM64	23.52	29.26
LTE Band41	10	39700	25	#0	QAM64	22.20	27.94
LTE Band41	10	39700	25	#Mid	QAM64	22.21	27.95
LTE Band41	10	39700	25	#Max	QAM64	22.18	27.92
LTE Band41	10	39700	50	#0	QAM64	22.13	27.87
LTE Band41	10	40620	1	#0	QAM64	22.78	28.52
LTE Band41	10	40620	1	#Mid	QAM64	22.46	28.20
LTE Band41	10	40620	1	#Max	QAM64	22.51	28.25
LTE Band41	10	40620	25	#0	QAM64	21.59	27.33
LTE Band41	10	40620	25	#Mid	QAM64	21.58	27.32
LTE Band41	10	40620	25	#Max	QAM64	21.33	27.07
LTE Band41	10	40620	50	#0	QAM64	21.42	27.16
LTE Band41	10	41540	1	#0	QAM64	22.95	28.69
LTE Band41	10	41540	1	#Mid	QAM64	22.82	28.56
LTE Band41	10	41540	1	#Max	QAM64	22.76	28.50
LTE Band41	10	41540	25	#0	QAM64	22.13	27.87
LTE Band41	10	41540	25	#Mid	QAM64	22.13	27.87
LTE Band41	10	41540	25	#Max	QAM64	21.93	27.67
LTE Band41	10	41540	50	#0	QAM64	22.09	27.83
LTE Band41	15	39725	1	#0	QAM64	23.36	29.10
LTE Band41	15	39725	1	#Mid	QAM64	23.24	28.98
LTE Band41	15	39725	1	#Max	QAM64	23.33	29.07
LTE Band41	15	39725	36	#0	QAM64	21.90	27.64
LTE Band41	15	39725	36	#Mid	QAM64	21.90	27.64
LTE Band41	15	39725	36	#Max	QAM64	22.09	27.83
LTE Band41	15	39725	75	#0	QAM64	22.02	27.76
LTE Band41	15	40620	1	#0	QAM64	22.96	28.70
LTE Band41	15	40620	1	#Mid	QAM64	22.56	28.30
LTE Band41	15	40620	1	#Max	QAM64	22.29	28.03
LTE Band41	15	40620	36	#0	QAM64	21.46	27.20
LTE Band41	15	40620	36	#Mid	QAM64	21.46	27.20
LTE Band41	15	40620	36	#Max	QAM64	21.23	26.97
LTE Band41	15	40620	75	#0	QAM64	21.48	27.22
LTE Band41	15	41515	1	#0	QAM64	23.29	29.03
LTE Band41	15	41515	1	#Mid	QAM64	23.10	28.84
LTE Band41	15	41515	1	#Max	QAM64	22.88	28.62
LTE Band41	15	41515	36	#0	QAM64	22.08	27.82
LTE Band41	15	41515	36	#Mid	QAM64	22.09	27.83
LTE Band41	15	41515	36	#Max	QAM64	22.01	27.75
LTE Band41	15	41515	75	#0	QAM64	22.10	27.84
LTE Band41	20	39750	1	#0	QAM64	23.37	29.11

LTE Band41	20	39750	1	#Mid	QAM64	22.95	28.69
LTE Band41	20	39750	1	#Max	QAM64	23.41	29.15
LTE Band41	20	39750	50	#0	QAM64	21.94	27.68
LTE Band41	20	39750	50	#Mid	QAM64	21.95	27.69
LTE Band41	20	39750	50	#Max	QAM64	21.96	27.70
LTE Band41	20	39750	100	#0	QAM64	22.01	27.75
LTE Band41	20	40620	1	#0	QAM64	23.01	28.75
LTE Band41	20	40620	1	#Mid	QAM64	22.37	28.11
LTE Band41	20	40620	1	#Max	QAM64	22.13	27.87
LTE Band41	20	40620	50	#0	QAM64	21.51	27.25
LTE Band41	20	40620	50	#Mid	QAM64	21.51	27.25
LTE Band41	20	40620	50	#Max	QAM64	21.13	26.87
LTE Band41	20	40620	100	#0	QAM64	21.43	27.17
LTE Band41	20	41490	1	#0	QAM64	23.06	28.80
LTE Band41	20	41490	1	#Mid	QAM64	22.65	28.39
LTE Band41	20	41490	1	#Max	QAM64	22.48	28.22
LTE Band41	20	41490	50	#0	QAM64	22.12	27.86
LTE Band41	20	41490	50	#Mid	QAM64	22.13	27.87
LTE Band41	20	41490	50	#Max	QAM64	21.97	27.71
LTE Band41	20	41490	100	#0	QAM64	21.90	27.64

5.2 Occupied Bandwidth

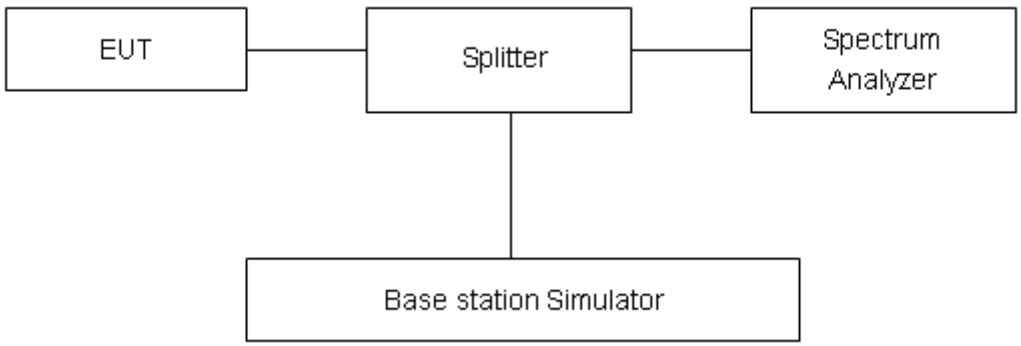
Ambient condition

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 100 kHz, VBW is set to 300 kHz for LTE Band 7/38/41 (5MHz).
RBW is set to 200 kHz, VBW is set to 620 kHz for LTE Band 7/38/41 (10MHz).
RBW is set to 300 kHz, VBW is set to 910 kHz for LTE Band 7/38/41 (15MHz).
RBW is set to 430 kHz, VBW is set to 1.2 MHz for LTE Band 7/38/41 (20MHz).
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.

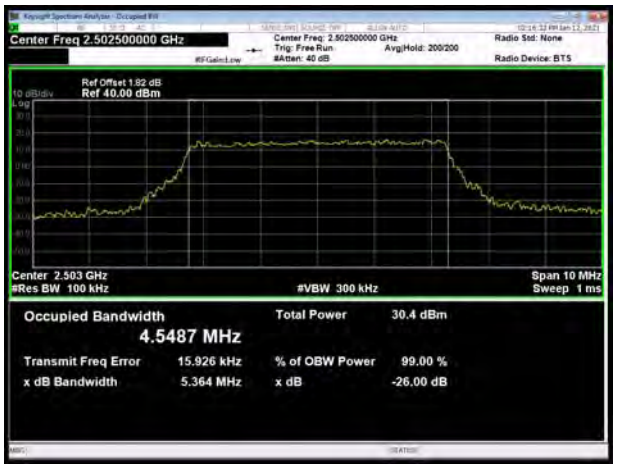
Test Result

LTE Band 7						
RB	**Modulation**	**Bandwidth (MHz)**	**Channel**	**Frequency (MHz)**	**99% Power Bandwidth(MHz)**	**-26dBc Bandwidth(MHz)**
100%	QPSK	5	20775	2502.5	4.5487	5.364
			21100	2535	4.5145	5.239
			21425	2567.5	4.5365	5.157
		10	20800	2505	8.9523	9.901
			21100	2535	8.9851	9.974
			21400	2565	9.0076	9.993
		15	20825	2507.5	13.3680	14.630
			21100	2535	13.4460	14.630
			21375	2562.5	13.5350	14.650
		20	20850	2510	17.8290	19.230
			21100	2535	17.9150	19.280
			21350	2560	17.9710	19.290
	16QAM	5	20775	2502.5	4.5141	5.307
			21100	2535	4.5361	5.197
			21425	2567.5	4.5612	5.438
		10	20800	2505	8.9806	9.769
			21100	2535	9.0101	9.857
			21400	2565	8.9983	10.000
		15	20825	2507.5	13.4200	14.490
			21100	2535	13.4260	14.420
			21375	2562.5	13.5110	14.650
		20	20850	2510	17.7660	19.120
			21100	2535	17.9120	19.290
			21350	2560	17.9610	19.430
	64QAM	5	20775	2502.5	4.5151	5.246
			21100	2535	4.5423	5.450
			21425	2567.5	4.5446	5.345
		10	20800	2505	8.9431	9.854
			21100	2535	8.9837	9.915
			21400	2565	9.0148	9.957
		15	20825	2507.5	13.3630	14.540
			21100	2535	13.4550	14.560
			21375	2562.5	13.5150	14.840
		20	20850	2510	17.8300	19.130
			21100	2535	17.8910	19.180
			21350	2560	17.9830	19.140

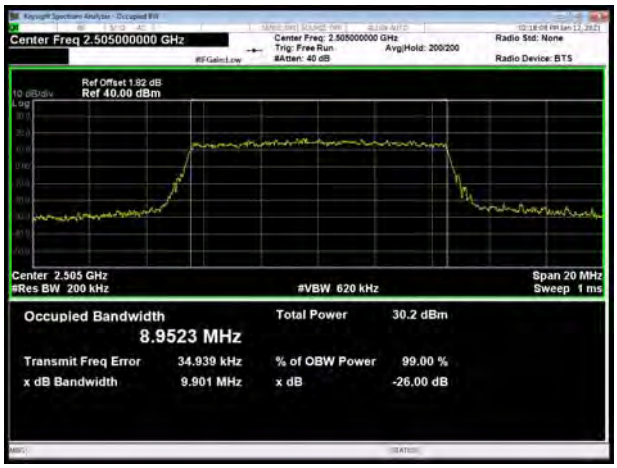
LTE Band 38						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	5	37775	2572.5	4.5274	5.227
			38000	2595	4.5036	5.017
			38225	2617.5	4.5237	5.483
		10	37800	2575	8.9862	9.908
			38000	2595	8.9773	10.060
			38200	2615	8.9938	10.050
		15	37825	2577.5	13.4210	14.470
			38000	2595	13.4560	14.720
			38175	2612.5	13.4550	14.820
		20	37850	2580	17.9080	19.020
			38000	2595	17.9750	19.310
			38150	2610	17.9300	19.110
	16QAM	5	37775	2572.5	4.5317	5.214
			38000	2595	4.5262	5.156
			38225	2617.5	4.5224	5.120
		10	37800	2575	8.9947	9.813
			38000	2595	8.9715	9.821
			38200	2615	8.9964	10.160
		15	37825	2577.5	13.5010	14.560
			38000	2595	13.4540	14.520
			38175	2612.5	13.5070	14.660
		20	37850	2580	17.9250	19.230
			38000	2595	17.8640	19.190
			38150	2610	17.9230	19.250
	64QAM	5	37775	2572.5	4.5196	5.300
			38000	2595	4.5170	5.339
			38225	2617.5	4.5147	5.237
		10	37800	2575	8.9755	9.780
			38000	2595	8.9820	10.040
			38200	2615	9.0108	10.140
		15	37825	2577.5	13.4230	14.590
			38000	2595	13.4380	15.170
			38175	2612.5	13.4030	14.800
		20	37850	2580	17.8760	19.120
			38000	2595	17.9100	19.190
			38150	2610	17.9270	19.120

LTE Band 41						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	5	39675	2498.5	4.5274	5.227
			40620	2593	4.5036	5.017
			41565	2687.5	4.5237	5.483
		10	39700	2501	8.9862	9.908
			40620	2593	8.9773	10.060
			41540	2685	8.9938	10.050
		15	39725	2503.5	13.4210	14.470
			40620	2593	13.4560	14.720
			41515	2682.5	13.4500	14.820
		20	39750	2506	17.9080	19.020
			40620	2593	17.9750	19.310
			41490	2680	17.9300	19.110
	16QAM	5	39675	2498.5	4.5317	5.214
			40620	2593	4.5262	5.156
			41565	2687.5	4.5224	5.120
		10	39700	2501	8.9947	9.813
			40620	2593	8.9715	9.821
			41540	2685	8.9964	10.160
		15	39725	2503.5	13.5010	14.560
			40620	2593	13.4540	14.520
			41515	2682.5	13.5070	14.660
		20	39750	2506	17.9250	19.230
			40620	2593	17.8640	19.190
			41490	2680	17.9230	19.250
	64QAM	5	37775	2572.5	4.5196	5.300
			38000	2595	4.5170	5.339
			38225	2617.5	4.5147	5.237
		10	37800	2575	8.9755	9.780
			38000	2595	8.9820	10.040
			38200	2615	9.0108	10.140
		15	37825	2577.5	13.4230	14.590
			38000	2595	13.4380	15.170
			38175	2612.5	13.4030	14.800
		20	37850	2580	17.8760	19.120
			38000	2595	17.9100	19.190
			38150	2610	17.9270	19.120

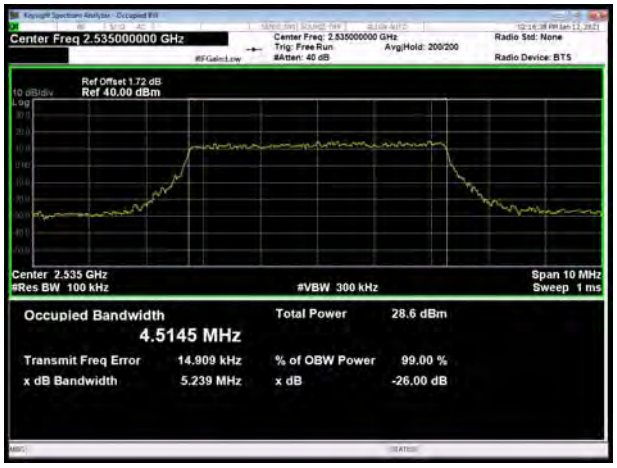
LTE Band 7 QPSK 5MHz CH-Low



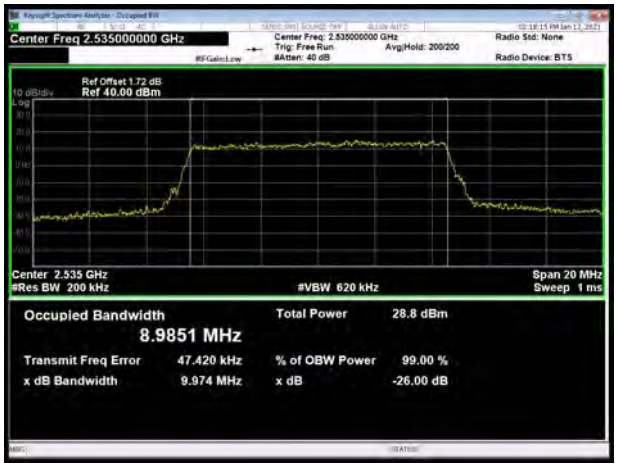
LTE Band 7 QPSK 10MHz CH-Low



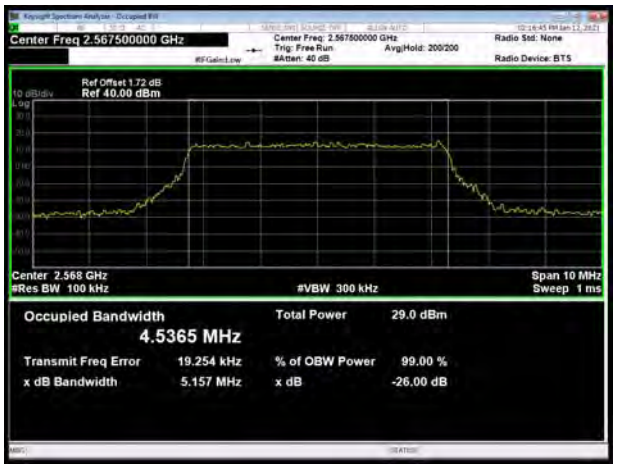
LTE Band 7 QPSK 5MHz CH-Middle



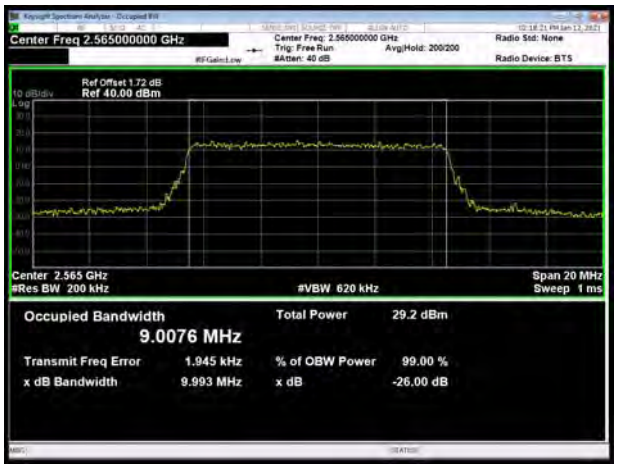
LTE Band 7 QPSK 10MHz CH-Middle



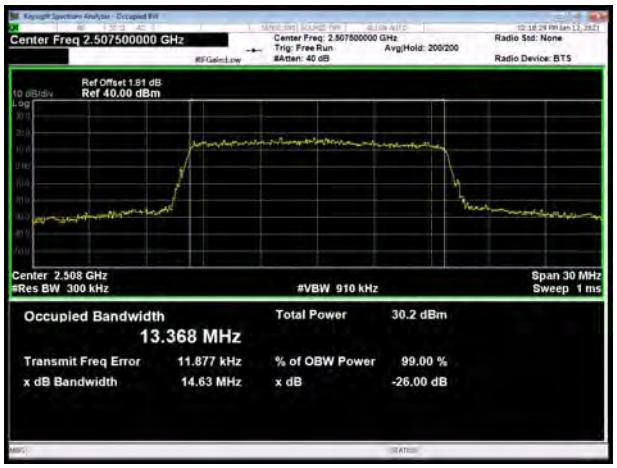
LTE Band 7 QPSK 5MHz CH-High



LTE Band 7 QPSK 10MHz CH-High

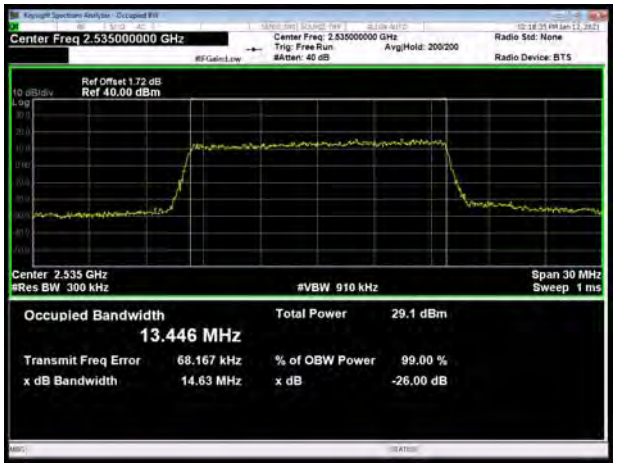


LTE Band 7 QPSK 15MHz CH-Low

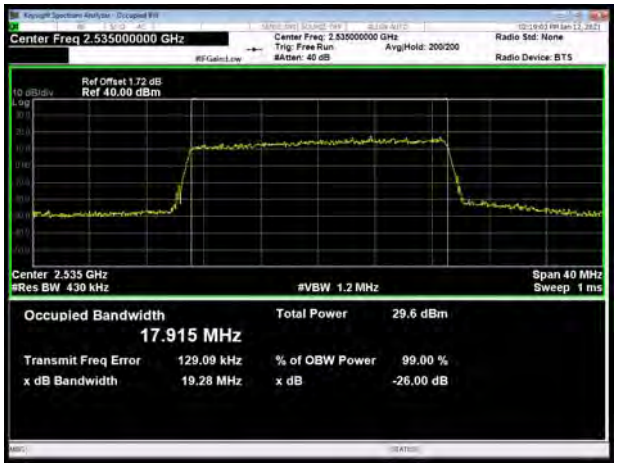


LTE Band 7 QPSK 20MHz CH-Low

LTE Band 7 QPSK 15MHz CH-Middle

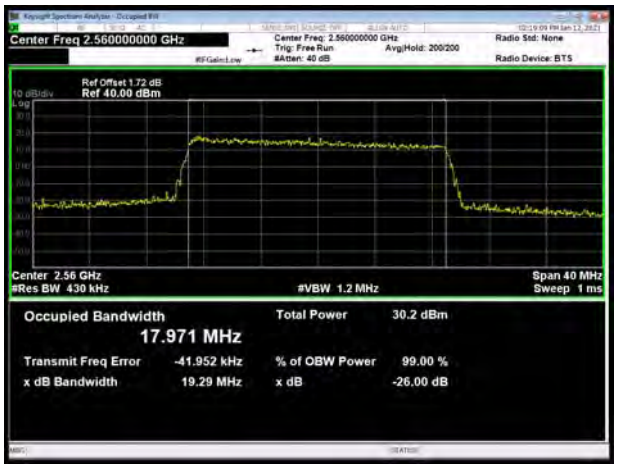


LTE Band 7 QPSK 20MHz CH-Middle

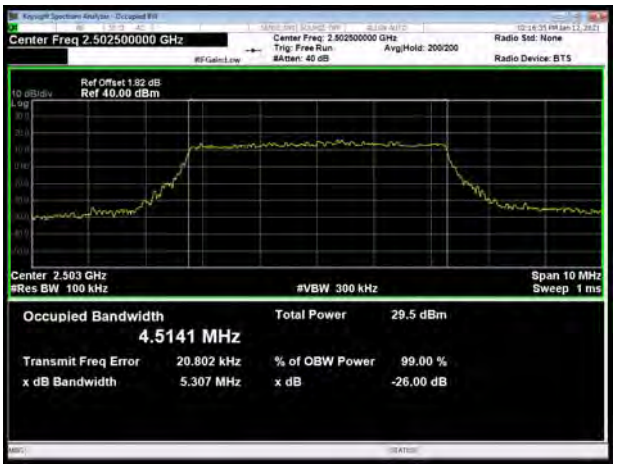


LTE Band 7 QPSK 15MHz CH-High

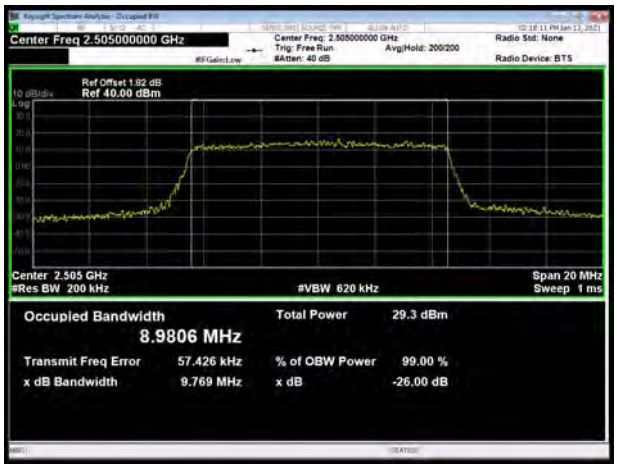
LTE Band 7 QPSK 20MHz CH-High



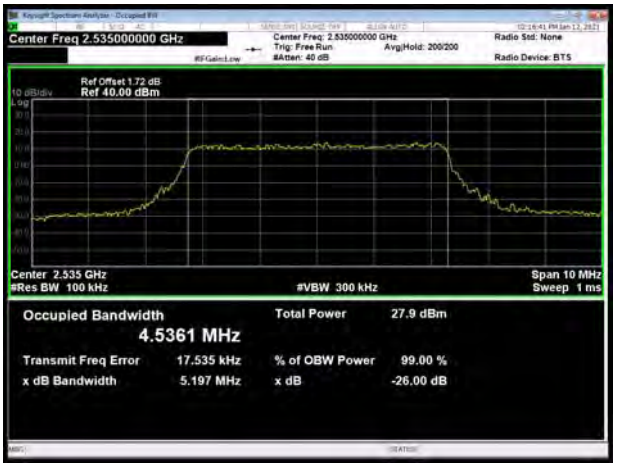
LTE Band 7 16QAM 5MHz CH-Low



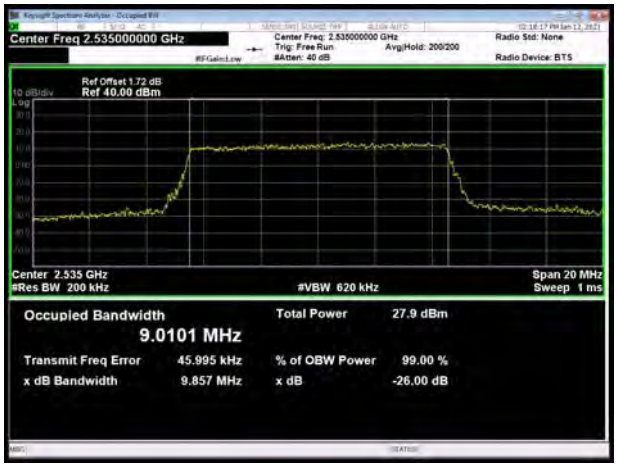
LTE Band 7 16QAM 10MHz CH-Low



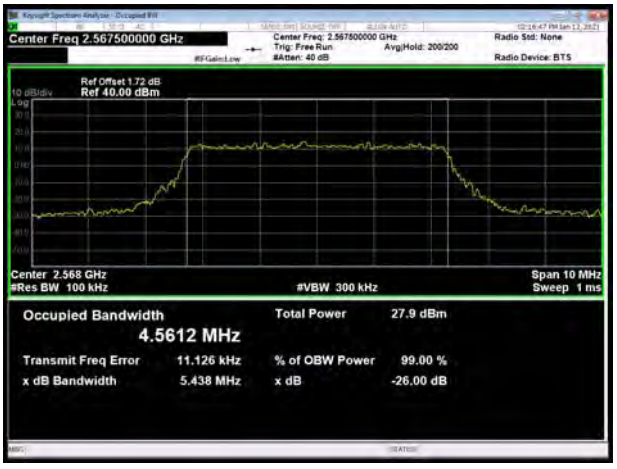
LTE Band 7 16QAM 5MHz CH-Middle



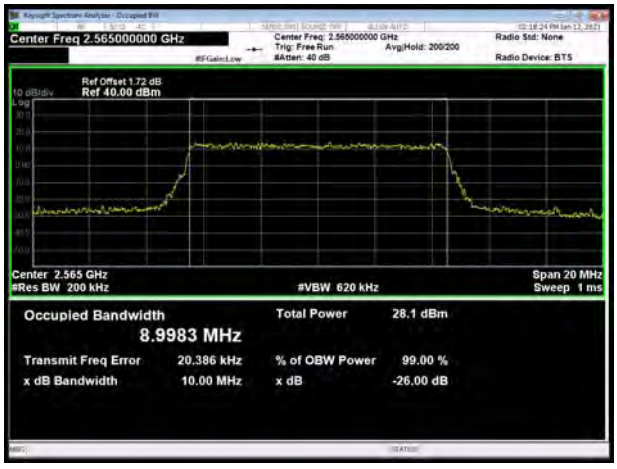
LTE Band 7 16QAM 10MHz CH-Middle



LTE Band 7 16QAM 5MHz CH-High

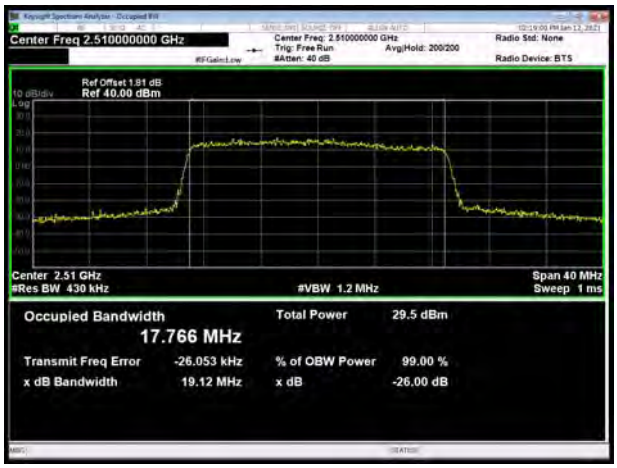


LTE Band 7 16QAM 10MHz CH-High

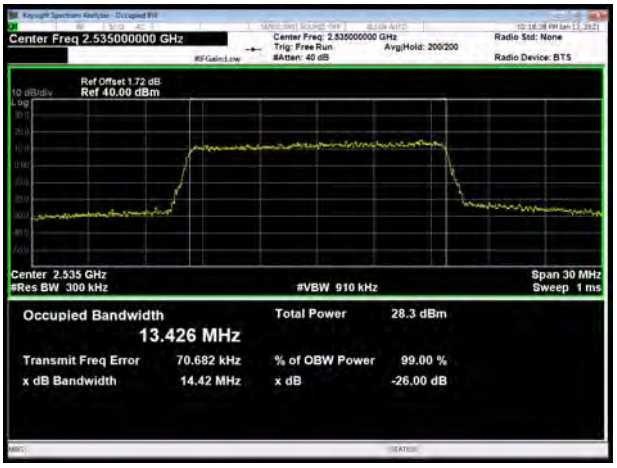


LTE Band 7 16QAM 15MHz CH-Low

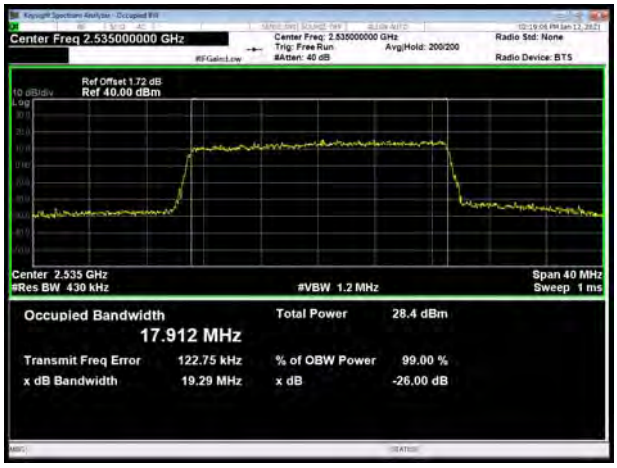
LTE Band 7 16QAM 20MHz CH-Low



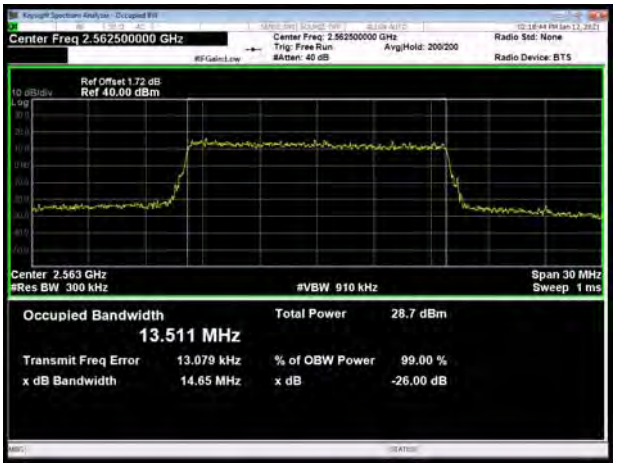
LTE Band 7 16QAM 15MHz CH-Middle



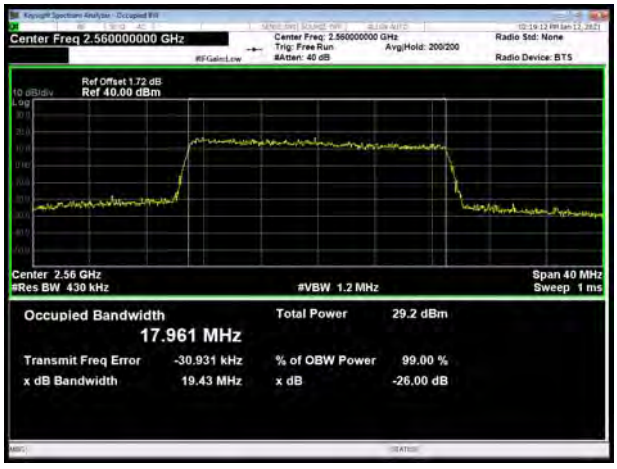
LTE Band 7 16QAM 20MHz CH-Middle



LTE Band 7 16QAM 15MHz CH-High

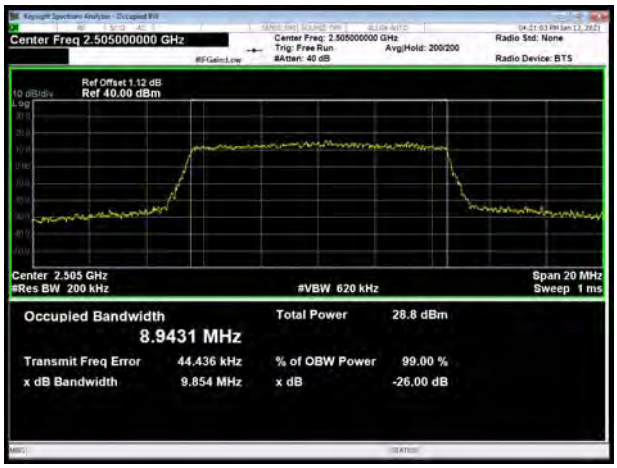


LTE Band 7 16QAM 20MHz CH-High

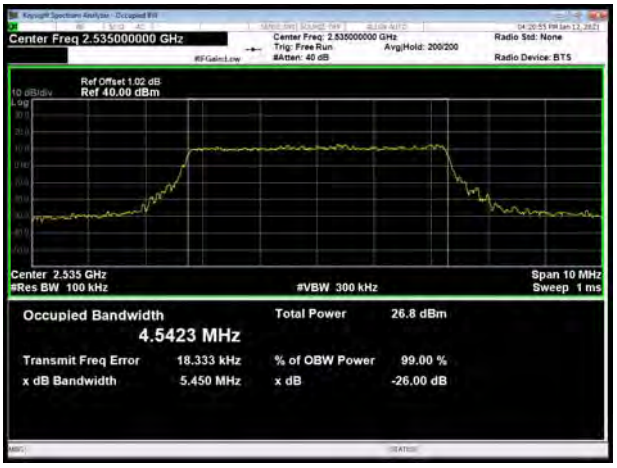


LTE Band 7 64QAM 5MHz CH-Low

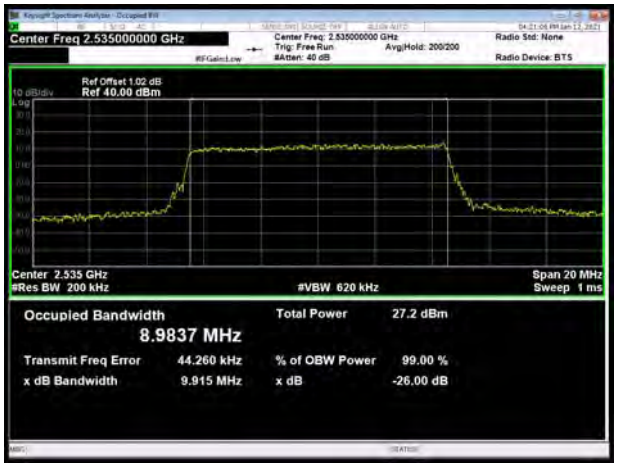
LTE Band 7 64QAM 10MHz CH-Low



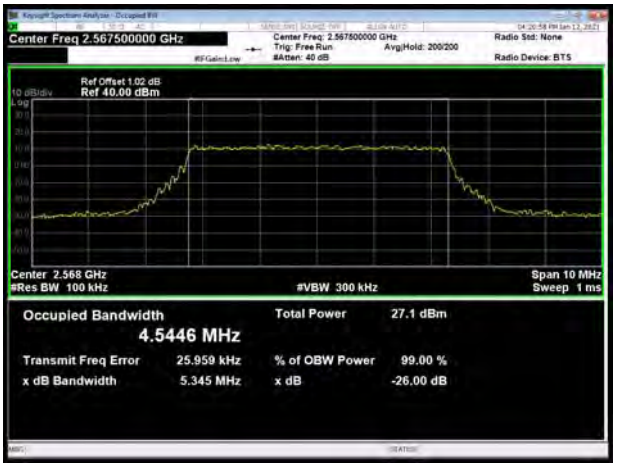
LTE Band 7 64QAM 5MHz CH-Middle



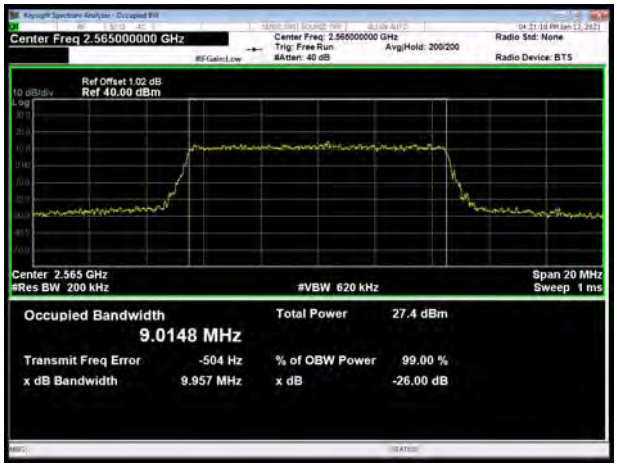
LTE Band 7 64QAM 10MHz CH-Middle



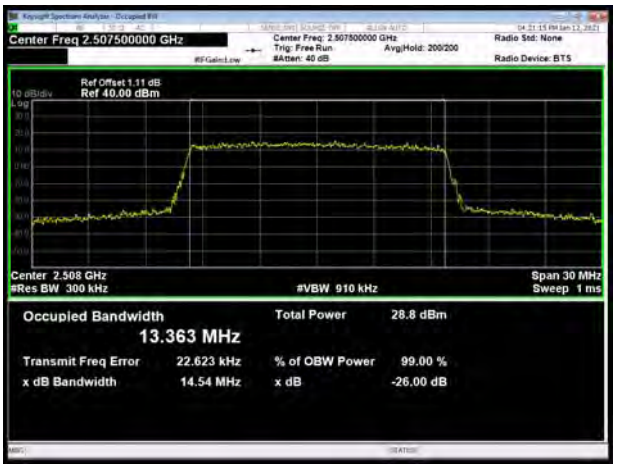
LTE Band 7 64QAM 5MHz CH-High



LTE Band 7 64QAM 10MHz CH-High



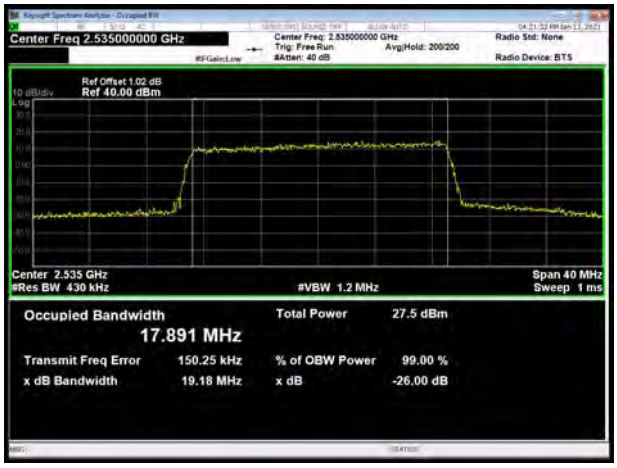
LTE Band 7 64QAM 15MHz CH-Low



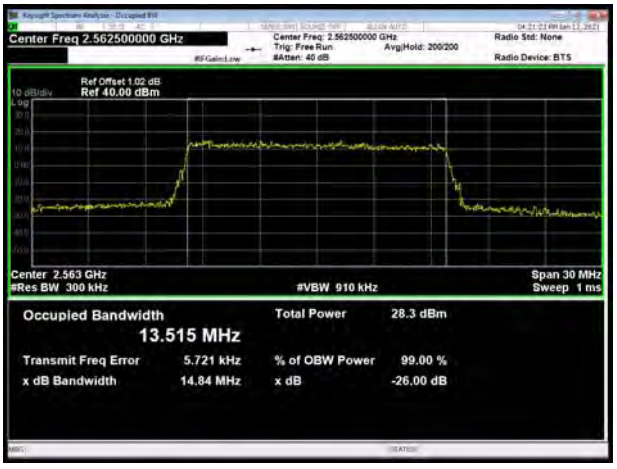
LTE Band 7 64QAM 20MHz CH-Low

LTE Band 7 64QAM 15MHz CH-Middle

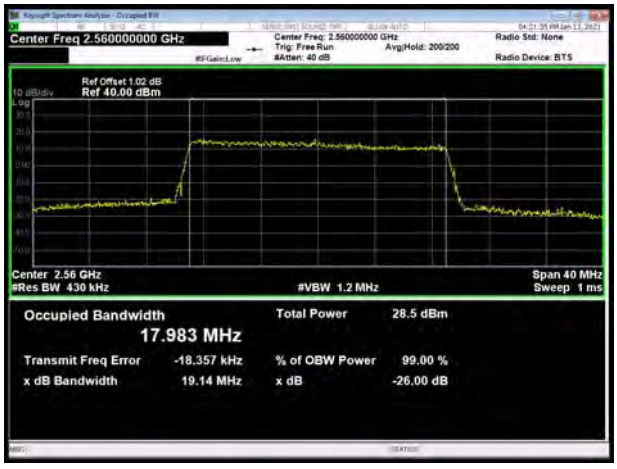
LTE Band 7 64QAM 20MHz CH-Middle



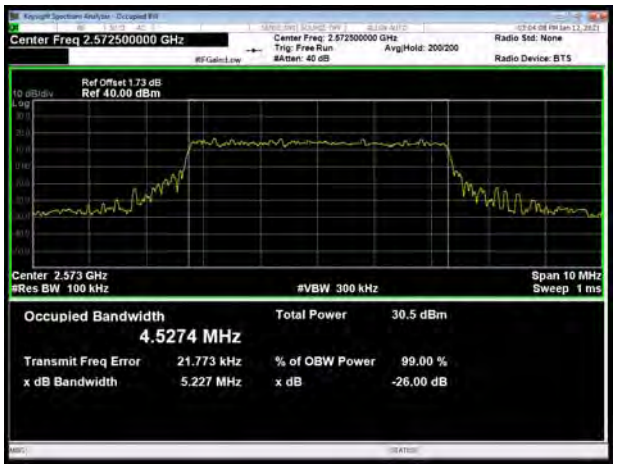
LTE Band 7 64QAM 15MHz CH-High



LTE Band 7 64QAM 20MHz CH-High

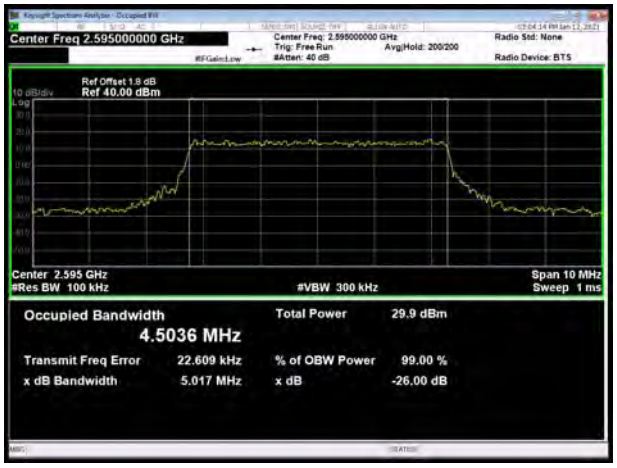


LTE Band 38 QPSK 5MHz CH-Low

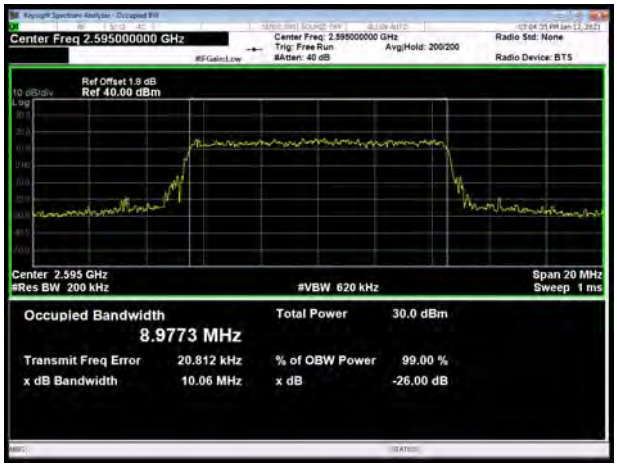


LTE Band 38 QPSK 10MHz CH-Low

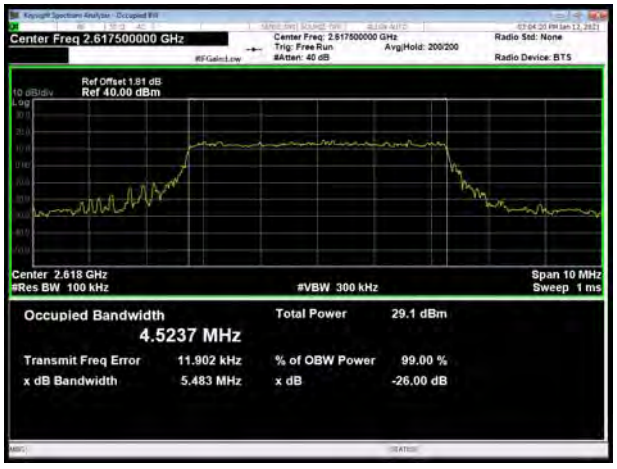
LTE Band 38 QPSK 5MHz CH-Middle



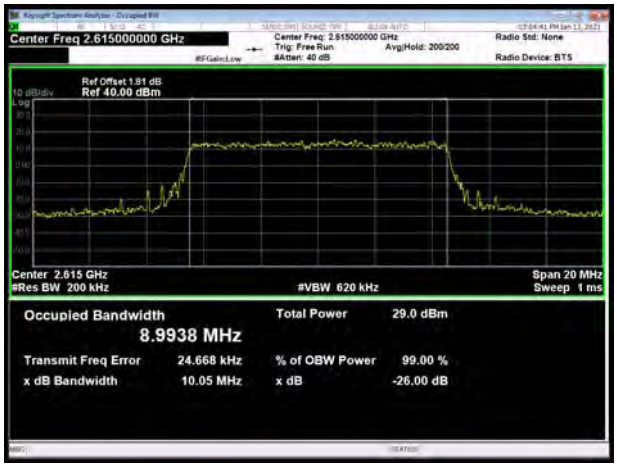
LTE Band 38 QPSK 10MHz CH-Middle



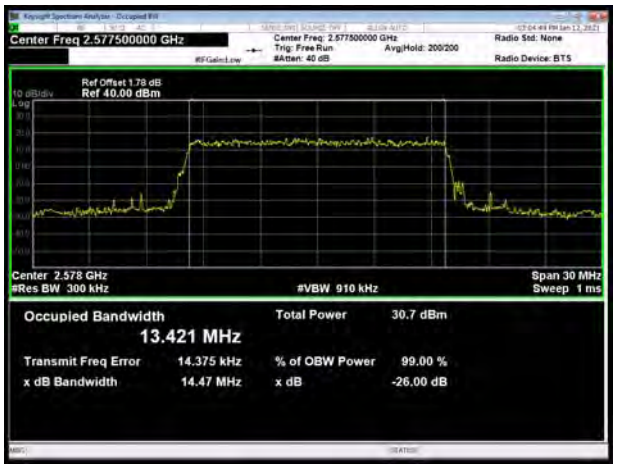
LTE Band 38 QPSK 5MHz CH-High



LTE Band 38 QPSK 10MHz CH-High

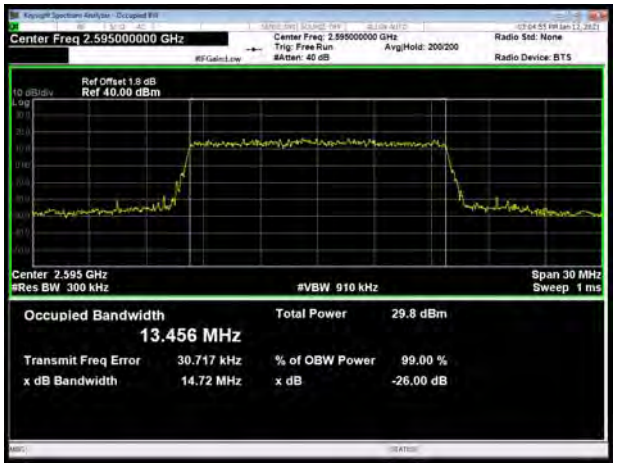


LTE Band 38 QPSK 15MHz CH-Low

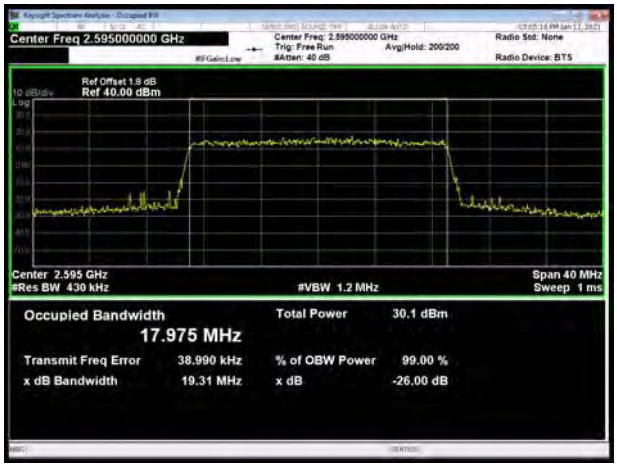


LTE Band 38 QPSK 20MHz CH-Low

LTE Band 38 QPSK 15MHz CH-Middle

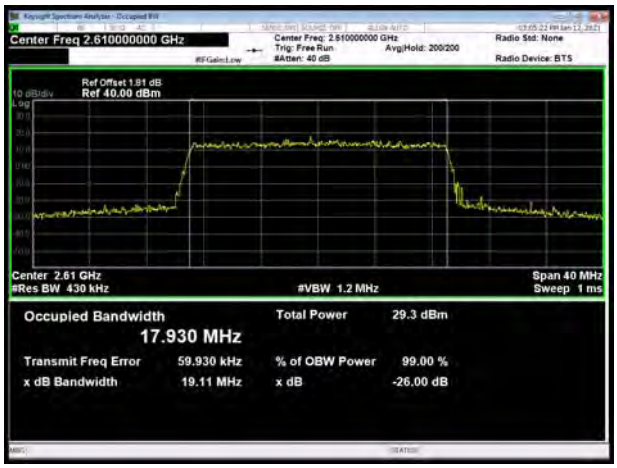


LTE Band 38 QPSK 20MHz CH-Middle

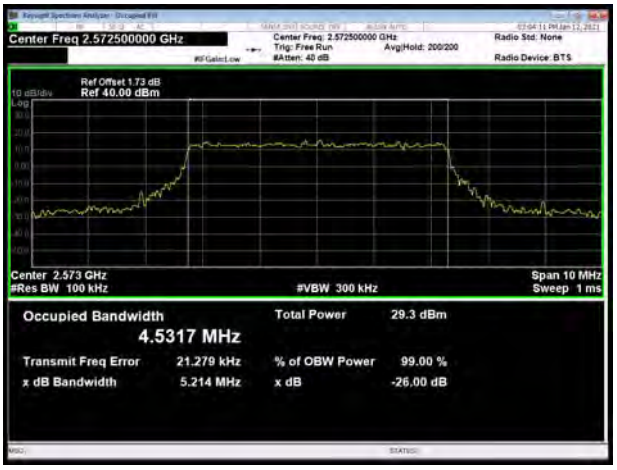


LTE Band 38 QPSK 15MHz CH-High

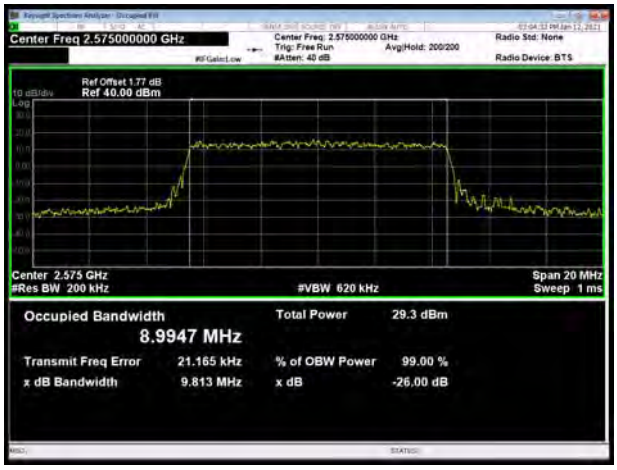
LTE Band 38 QPSK 20MHz CH-High



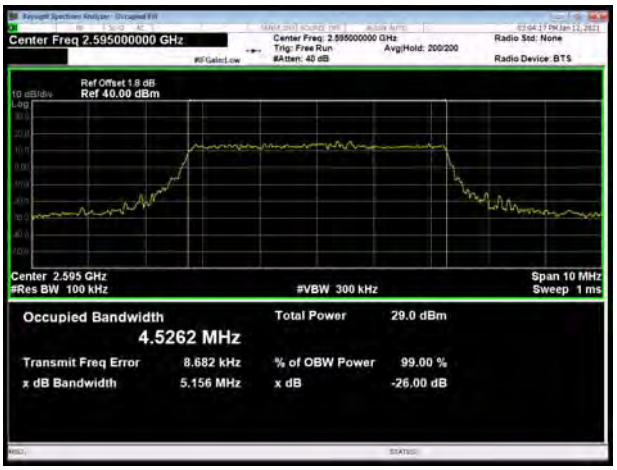
LTE Band 38 16QAM 5MHz CH-Low



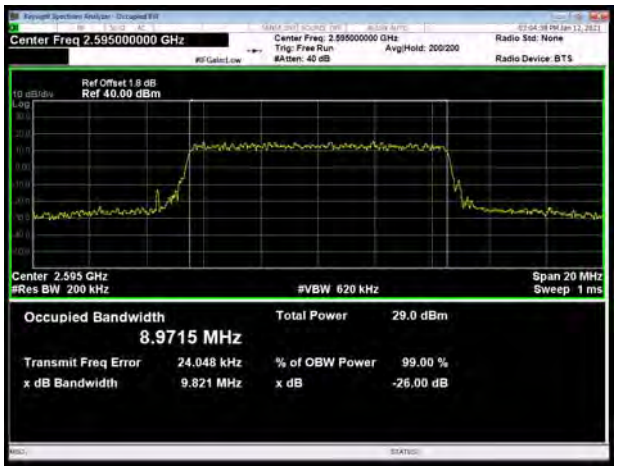
LTE Band 38 16QAM 10MHz CH-Low



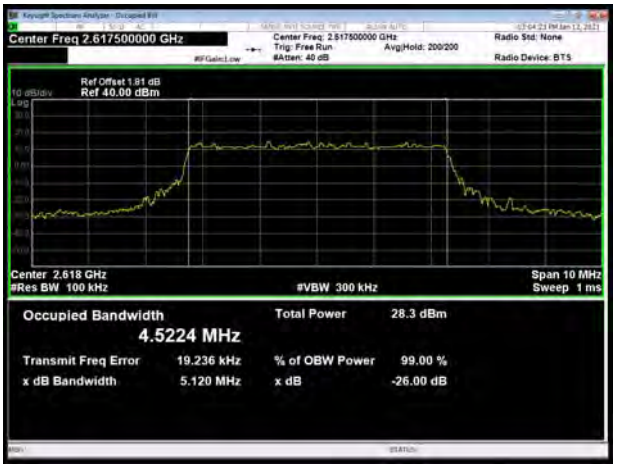
LTE Band 38 16QAM 5MHz CH-Middle



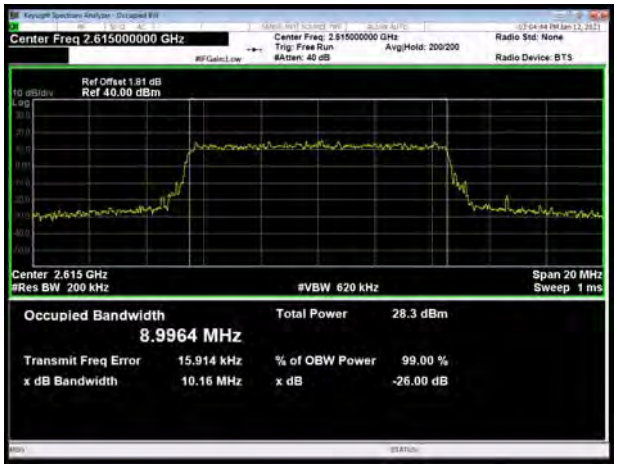
LTE Band 38 16QAM 10MHz CH-Middle



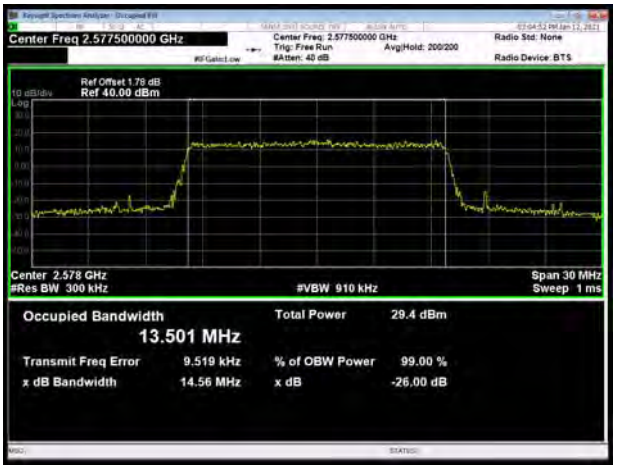
LTE Band 38 16QAM 5MHz CH-High



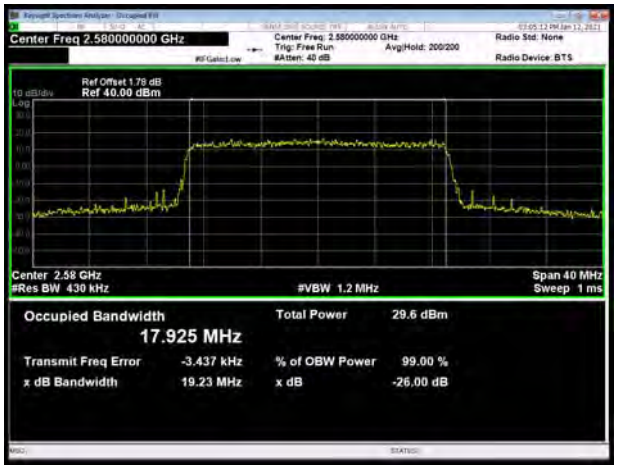
LTE Band 38 16QAM 10MHz CH-High



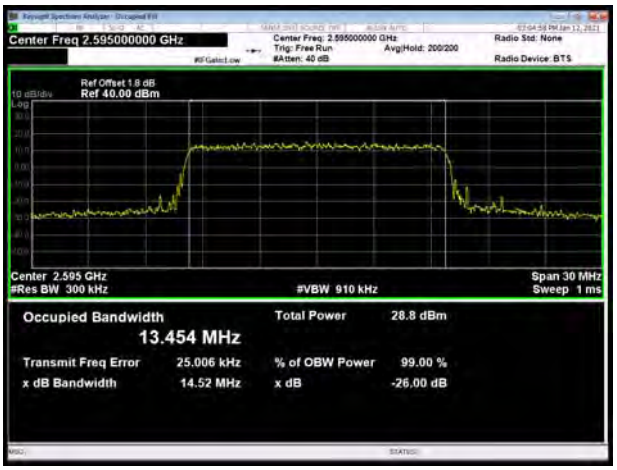
LTE Band 38 16QAM 15MHz CH-Low



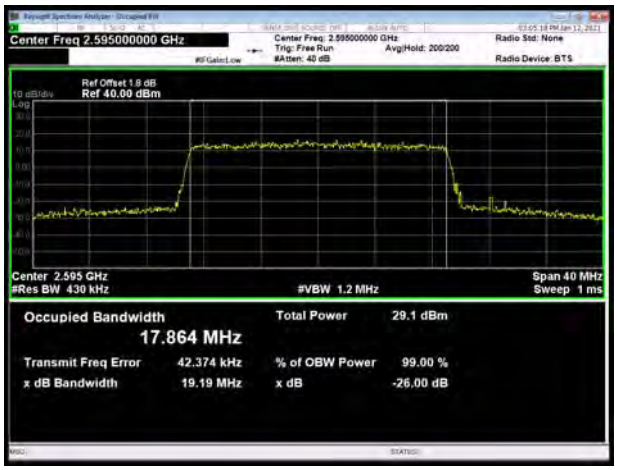
LTE Band 38 16QAM 20MHz CH-Low



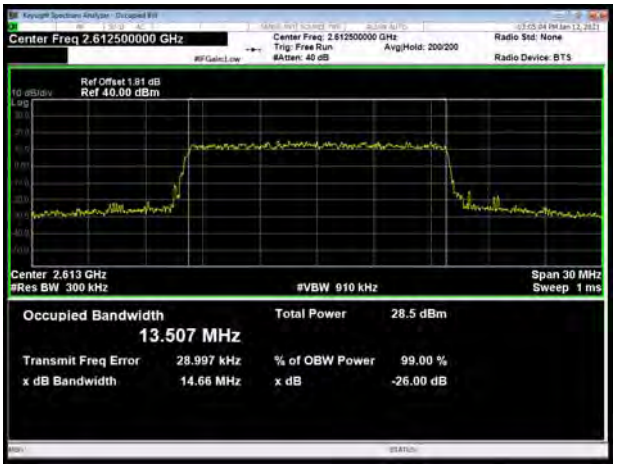
LTE Band 38 16QAM 15MHz CH-Middle



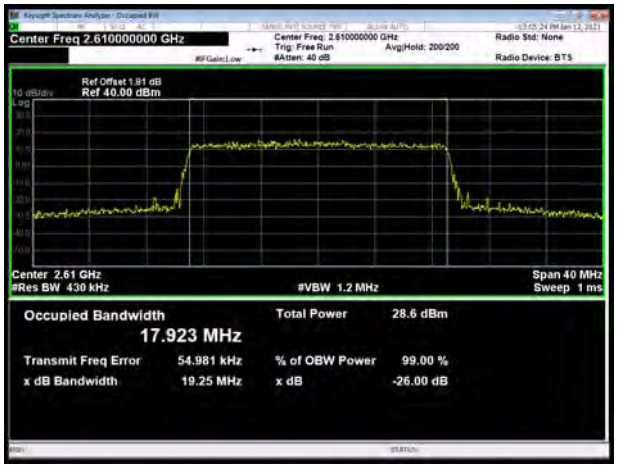
LTE Band 38 16QAM 20MHz CH-Middle



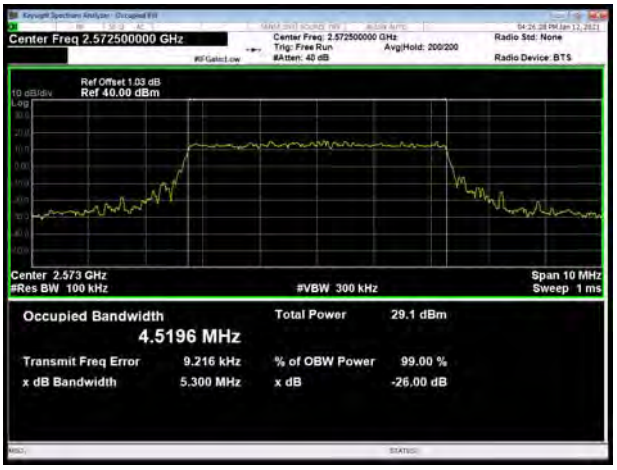
LTE Band 38 16QAM 15MHz CH-High



LTE Band 38 16QAM 20MHz CH-High

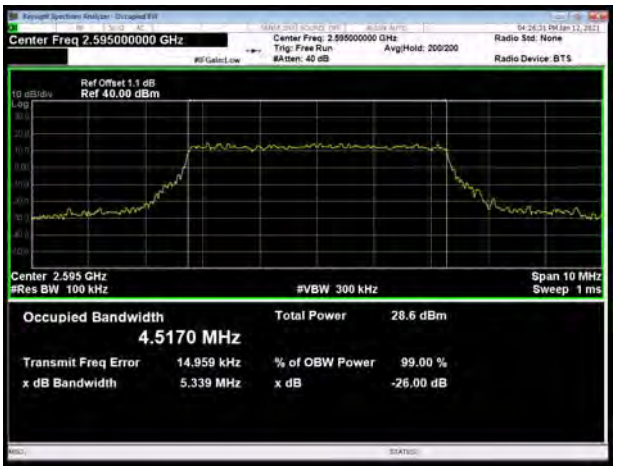


LTE Band 38 64QAM 5MHz CH-Low

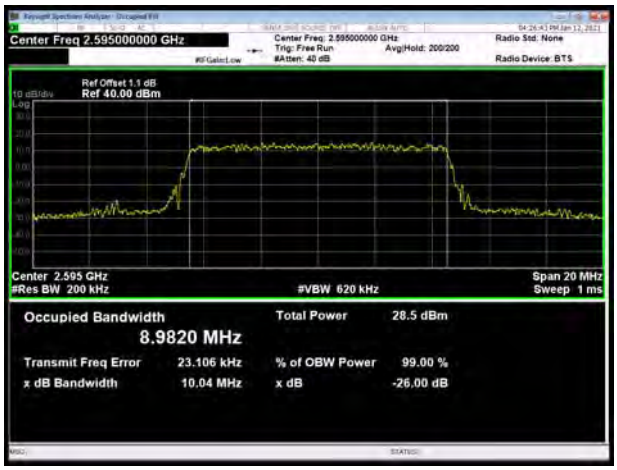


LTE Band 38 64QAM 10MHz CH-Low

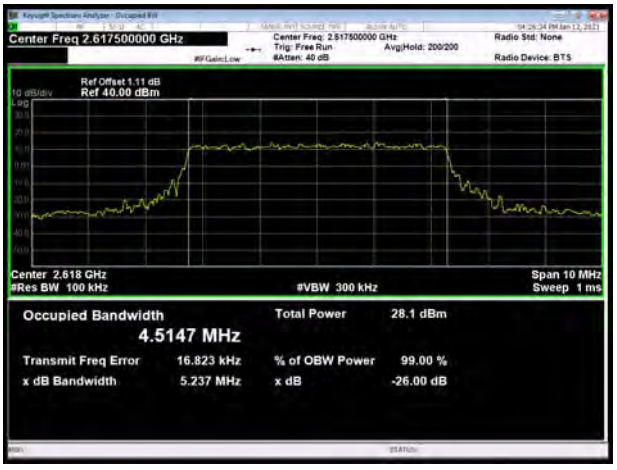
LTE Band 38 64QAM 5MHz CH-Middle



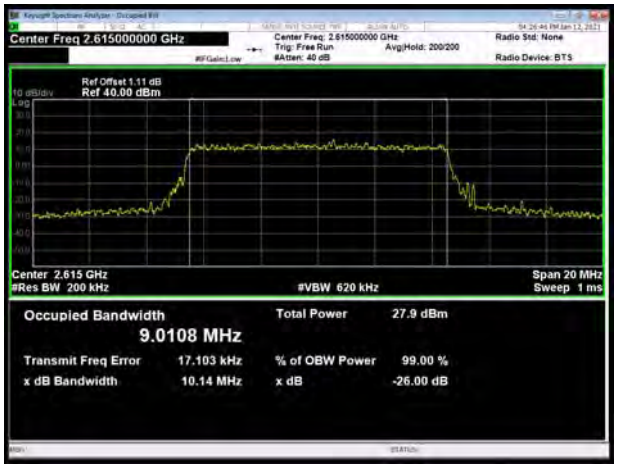
LTE Band 38 64QAM 10MHz CH-Middle



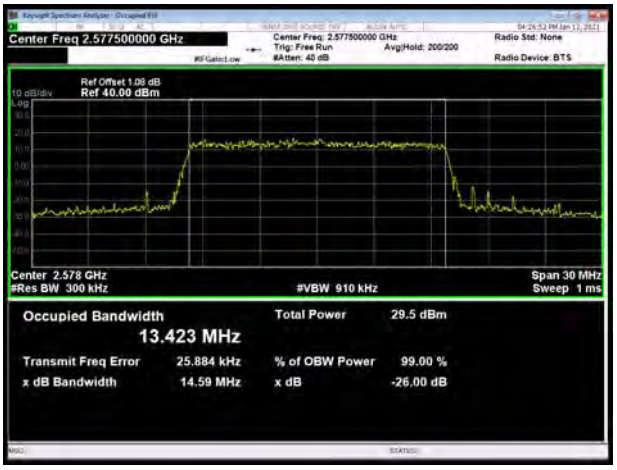
LTE Band 38 64QAM 5MHz CH-High



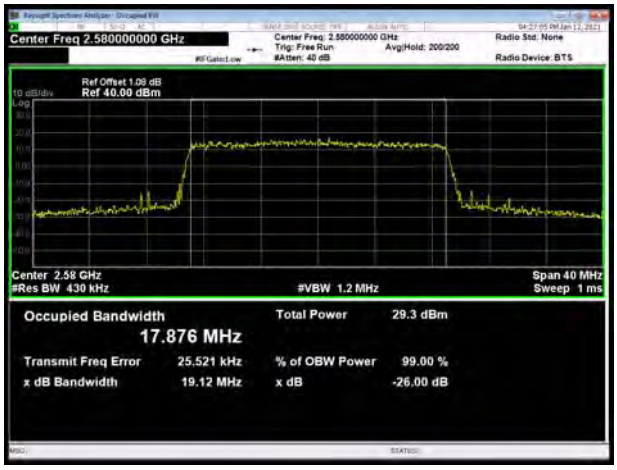
LTE Band 38 64QAM 10MHz CH-High



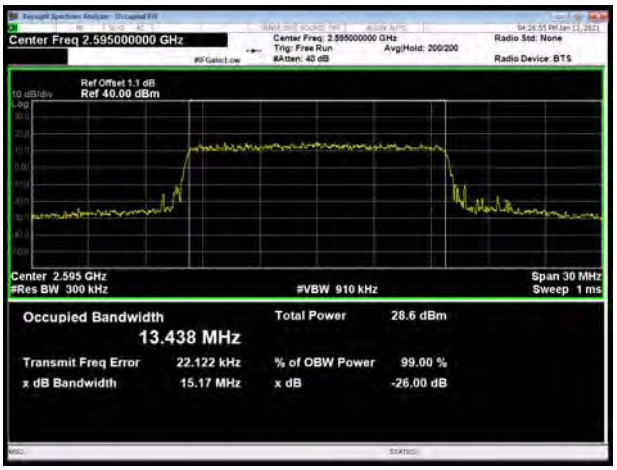
LTE Band 38 64QAM 15MHz CH-Low



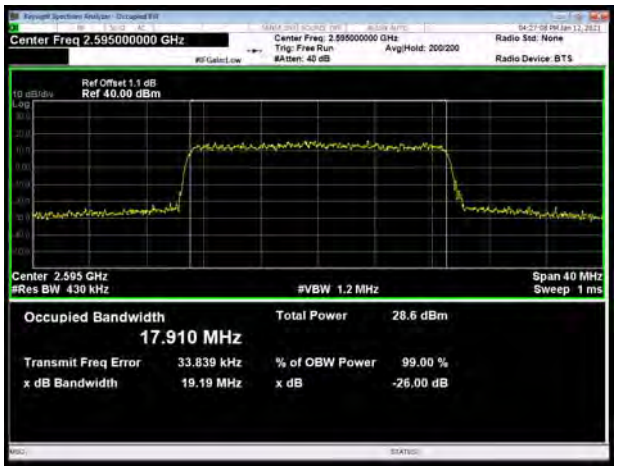
LTE Band 38 64QAM 20MHz CH-Low



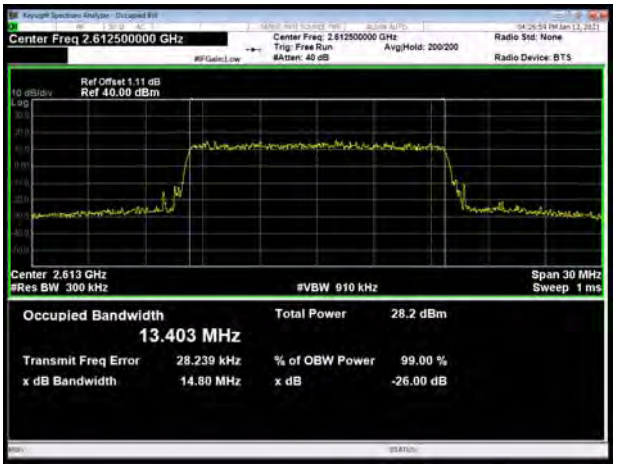
LTE Band 38 64QAM 15MHz CH-Middle



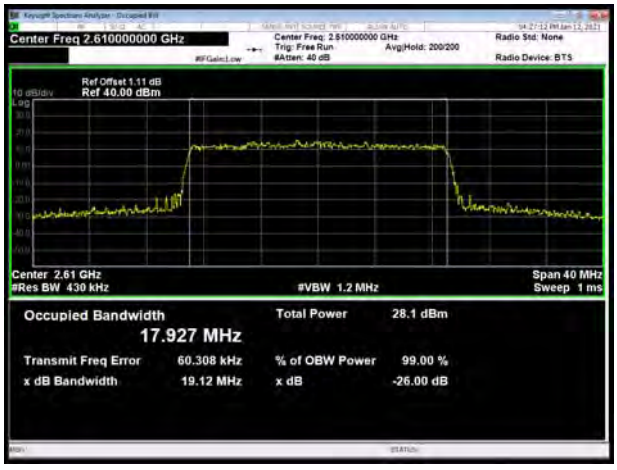
LTE Band 38 64QAM 20MHz CH-Middle



LTE Band 38 64QAM 15MHz CH-High

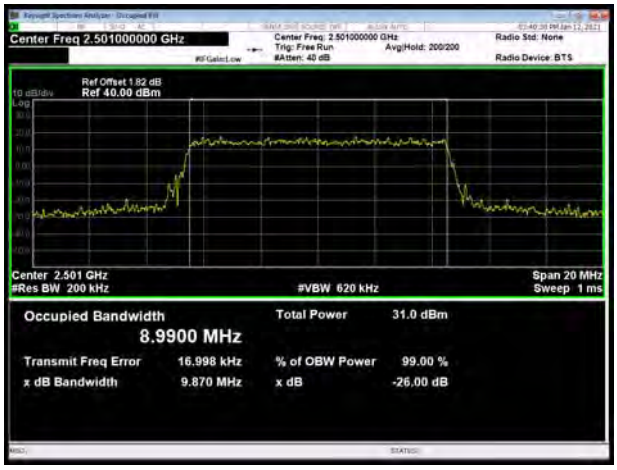


LTE Band 38 64QAM 20MHz CH-High

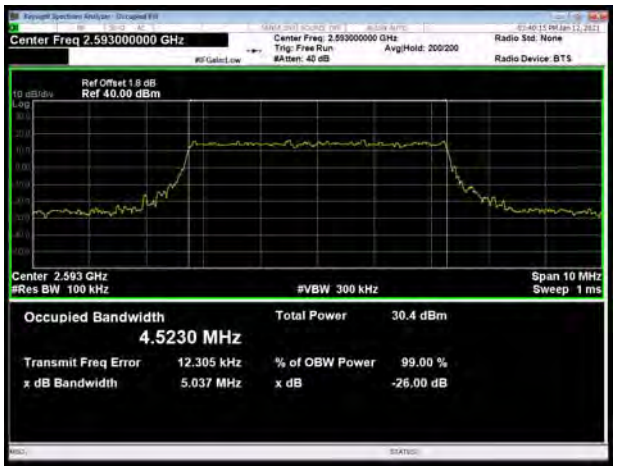


LTE Band 41 QPSK 5MHz CH-Low

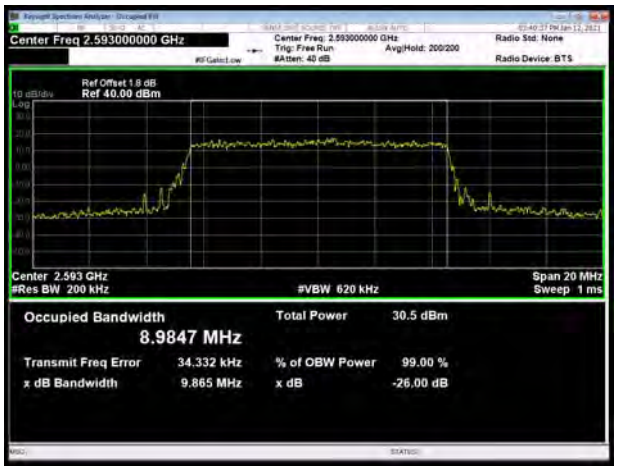
LTE Band 41 QPSK 10MHz CH-Low



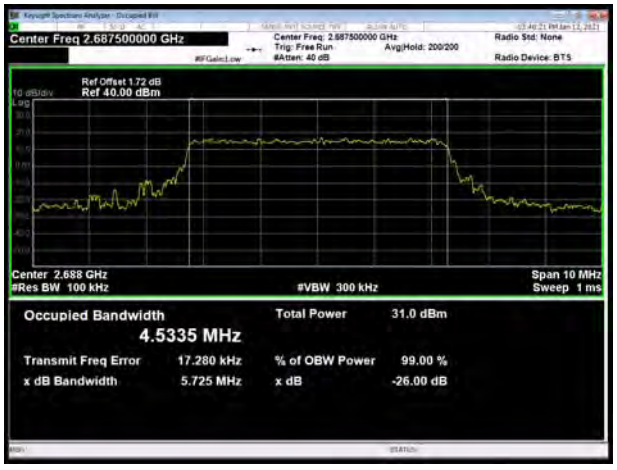
LTE Band 41 QPSK 5MHz CH-Middle



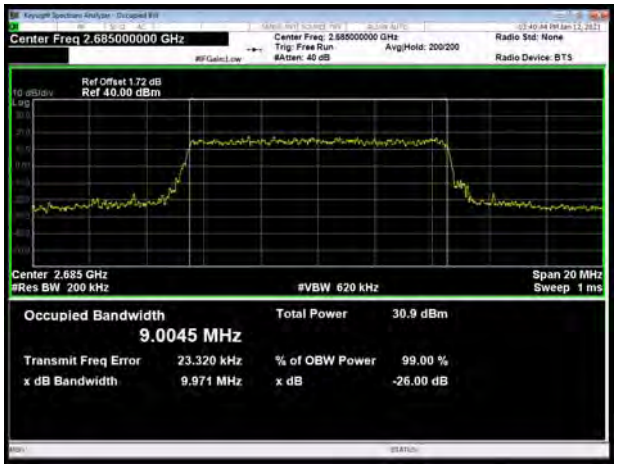
LTE Band 41 QPSK 10MHz CH-Middle



LTE Band 41 QPSK 5MHz CH-High

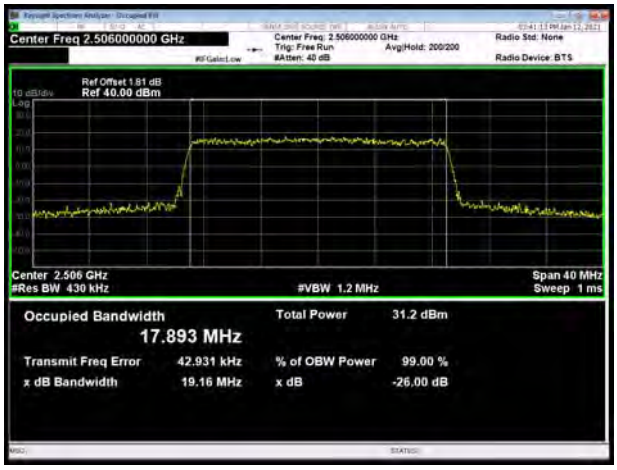


LTE Band 41 QPSK 10MHz CH-High

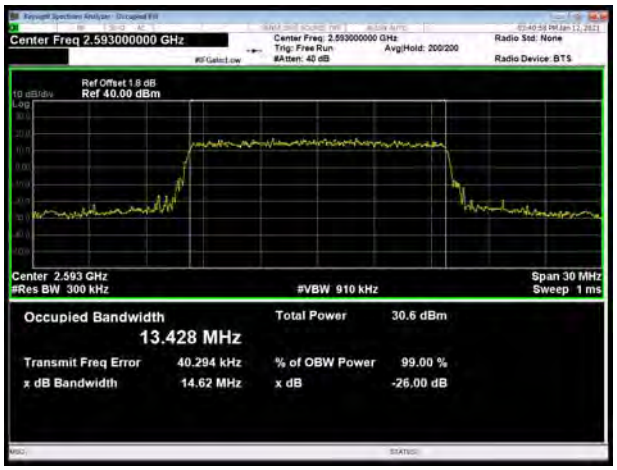


LTE Band 41 QPSK 15MHz CH-Low

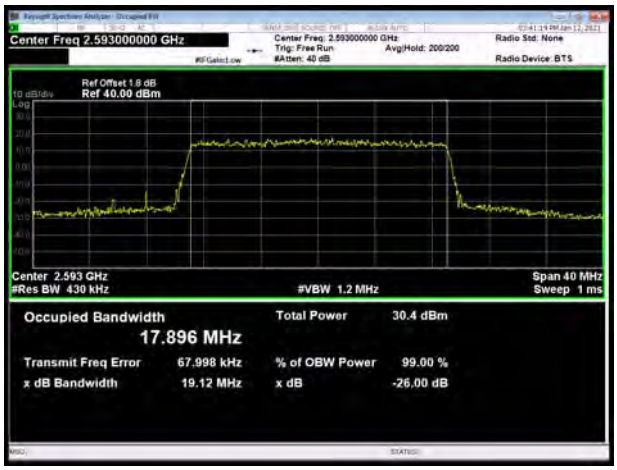
LTE Band 41 QPSK 20MHz CH-Low



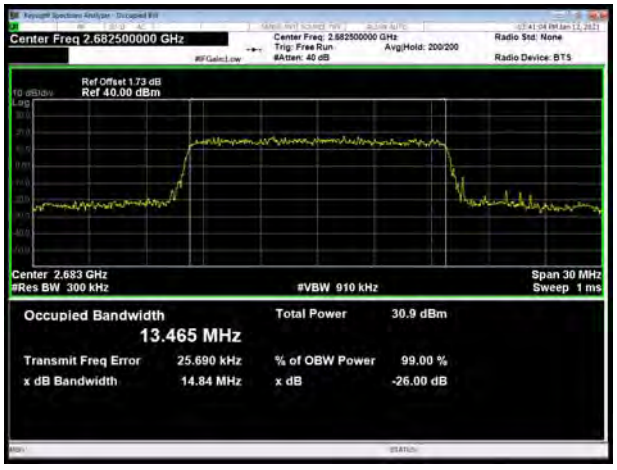
LTE Band 41 QPSK 15MHz CH-Middle



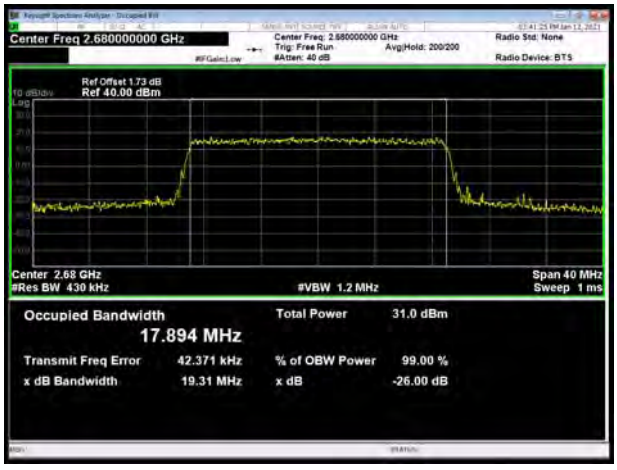
LTE Band 41 QPSK 20MHz CH-Middle



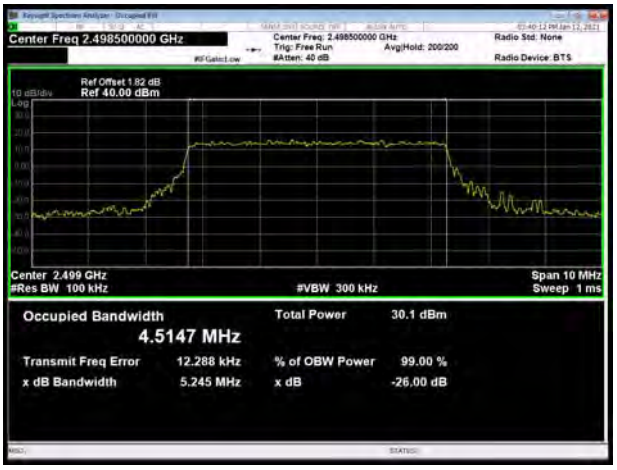
LTE Band 41 QPSK 15MHz CH-High



LTE Band 41 QPSK 20MHz CH-High

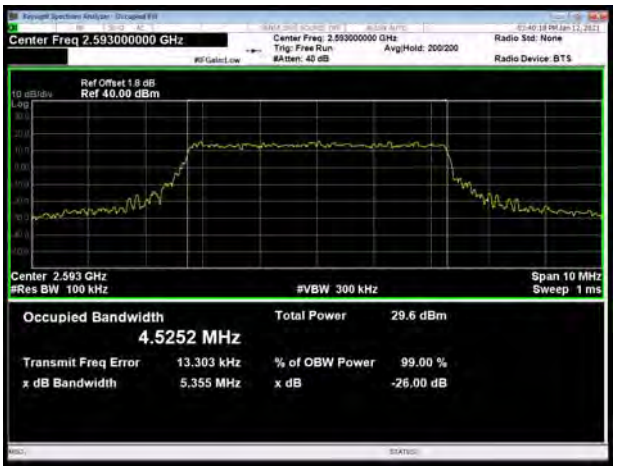


LTE Band 41 16QAM 5MHz CH-Low

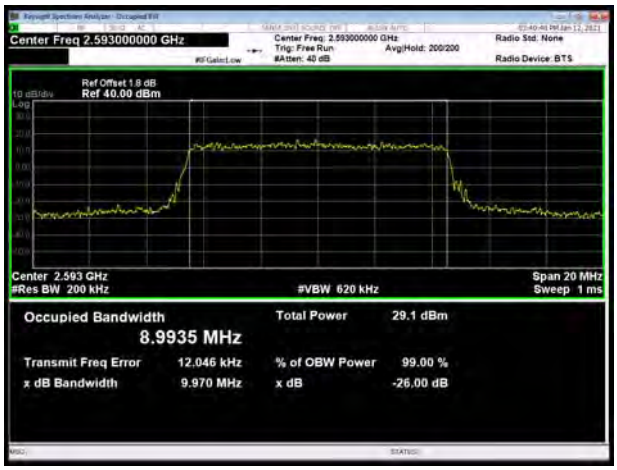


LTE Band 41 16QAM 10MHz CH-Low

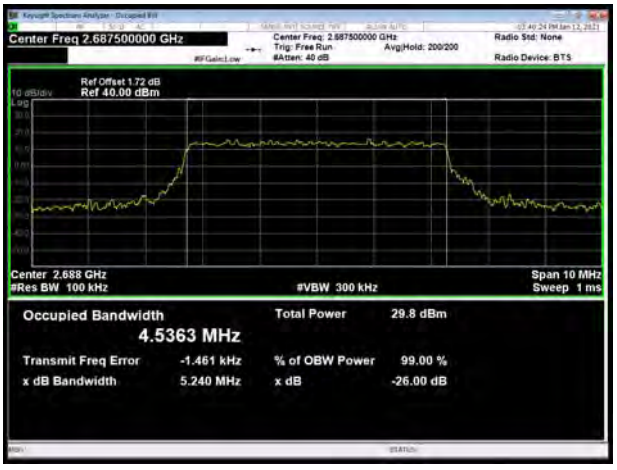
LTE Band 41 16QAM 5MHz CH-Middle



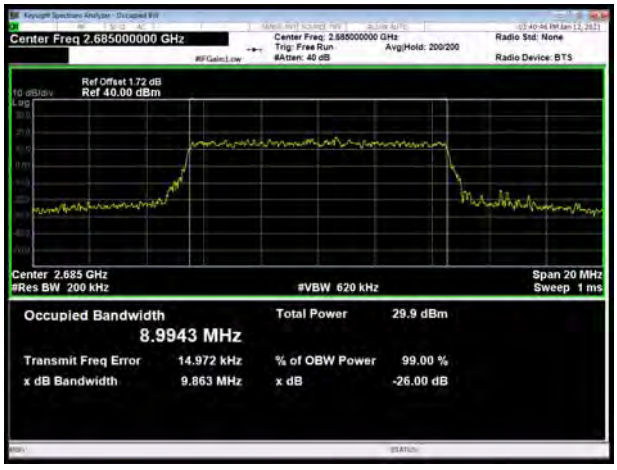
LTE Band 41 16QAM 10MHz CH-Middle



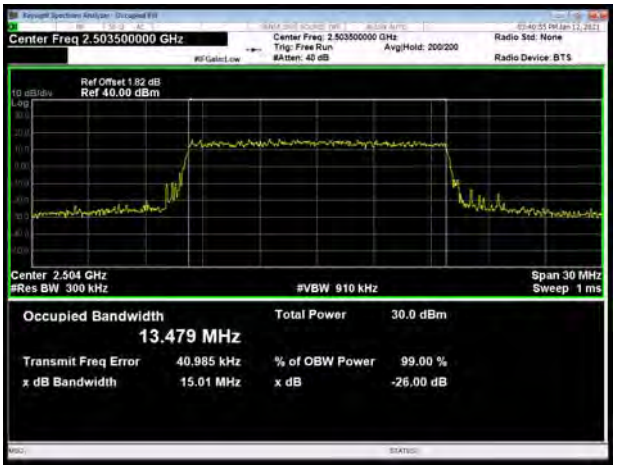
LTE Band 41 16QAM 5MHz CH-High



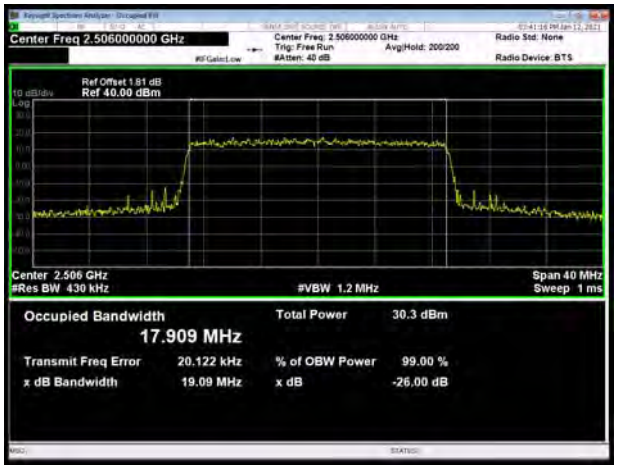
LTE Band 41 16QAM 10MHz CH-High



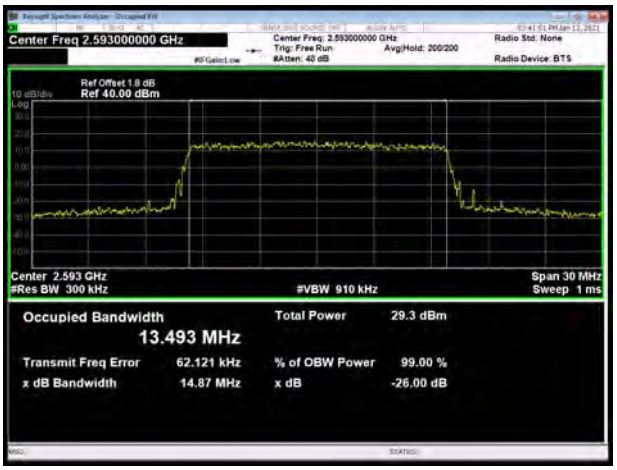
LTE Band 41 16QAM 15MHz CH-Low



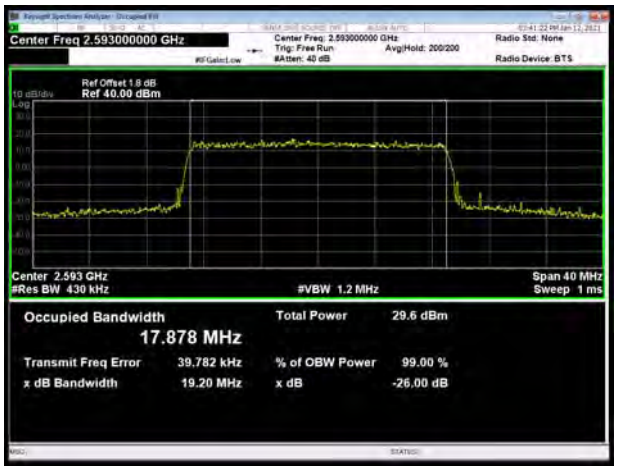
LTE Band 41 16QAM 20MHz CH-Low



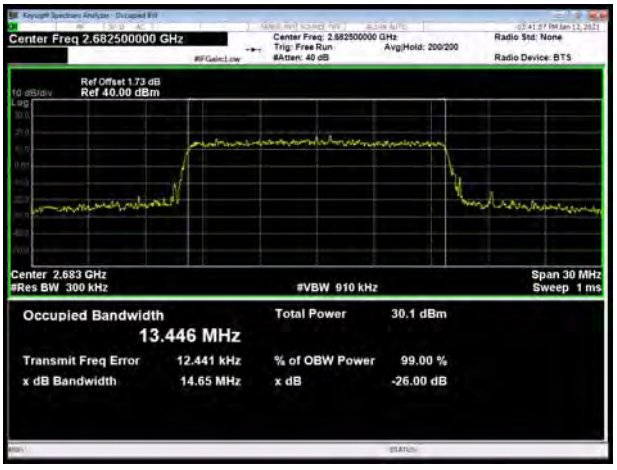
LTE Band 41 16QAM 15MHz CH-Middle



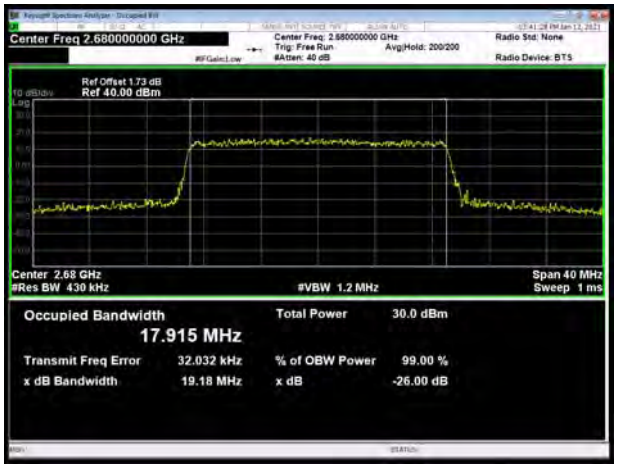
LTE Band 41 16QAM 20MHz CH-Middle



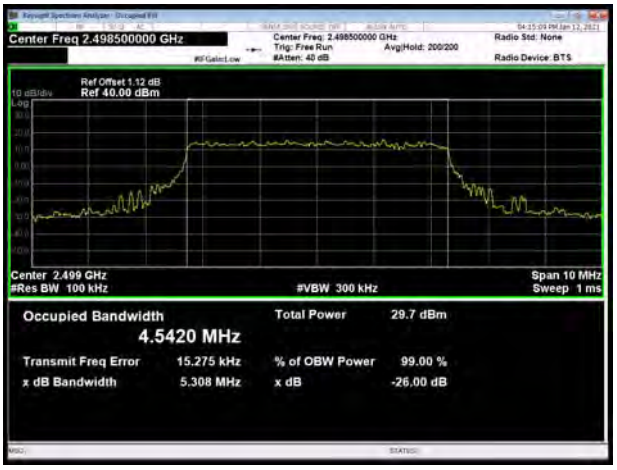
LTE Band 41 16QAM 15MHz CH-High



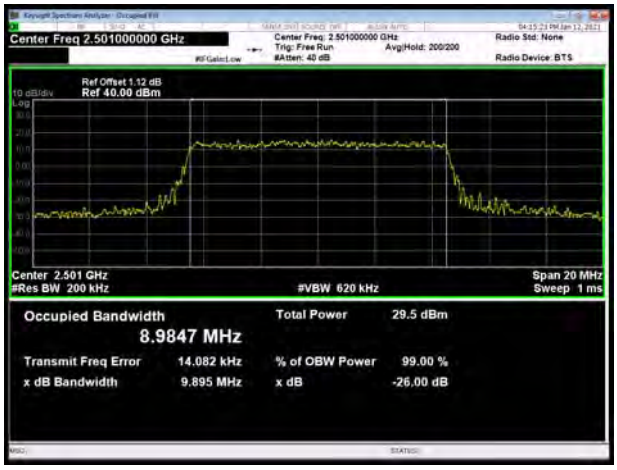
LTE Band 41 16QAM 20MHz CH-High



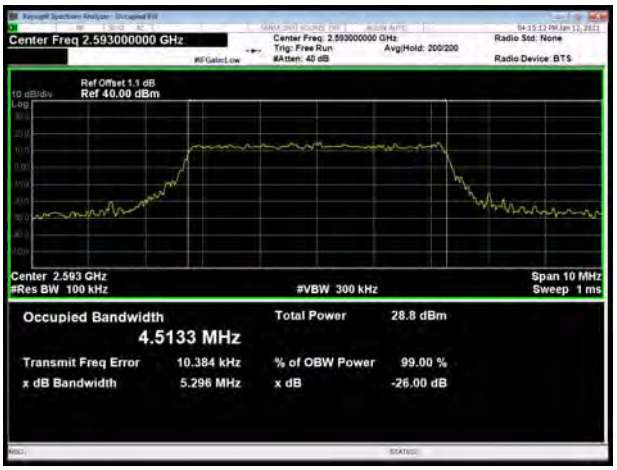
LTE Band 41 64QAM 5MHz CH-Low



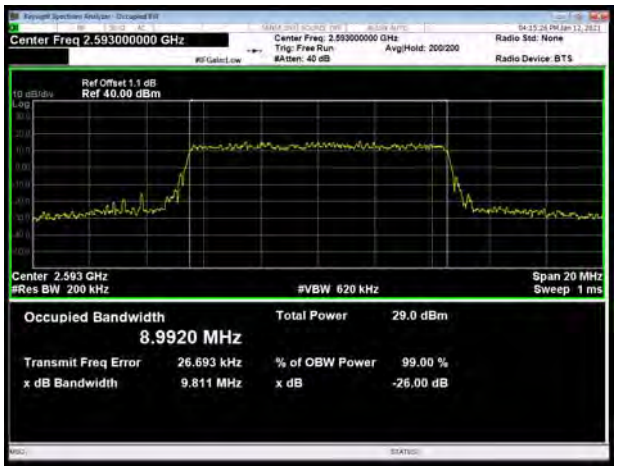
LTE Band 41 64QAM 10MHz CH-Low



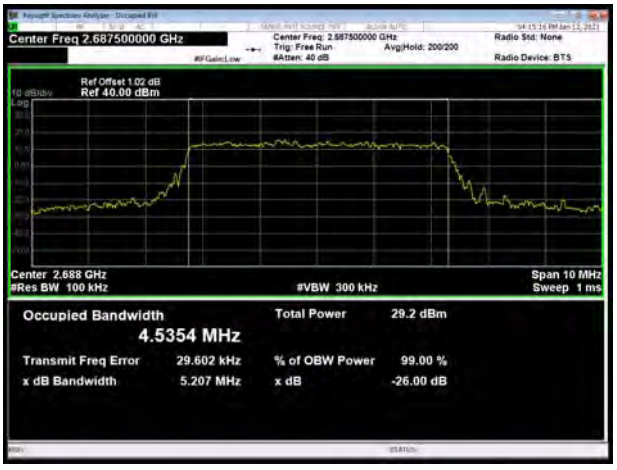
LTE Band 41 64QAM 5MHz CH-Middle



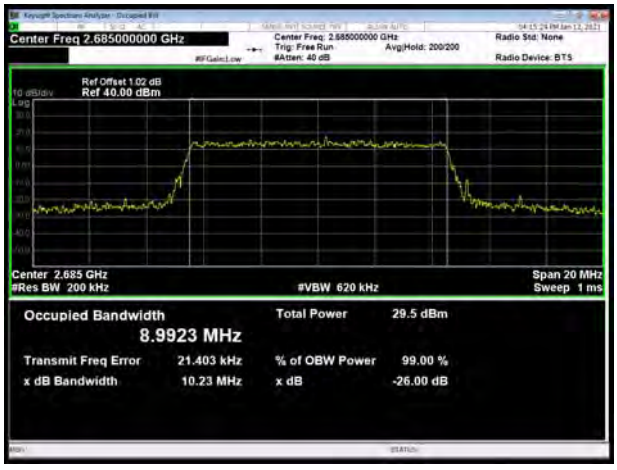
LTE Band 41 64QAM 10MHz CH-Middle



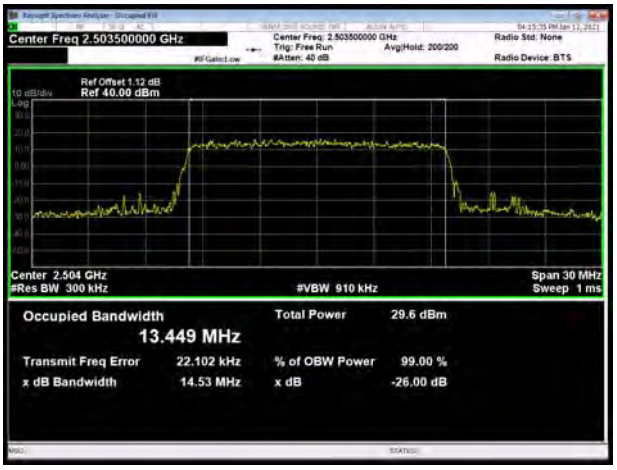
LTE Band 41 64QAM 5MHz CH-High



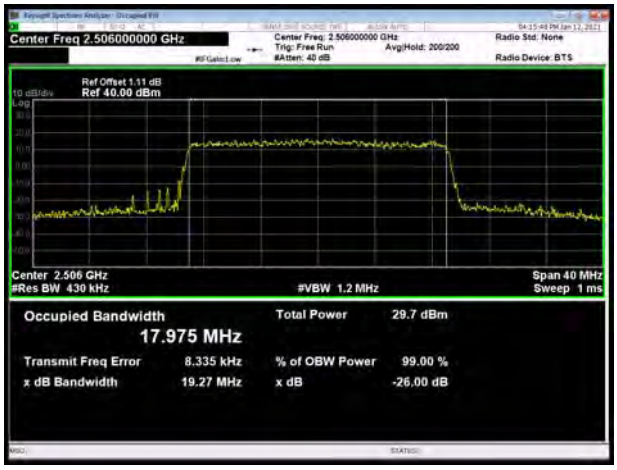
LTE Band 41 64QAM 10MHz CH-High



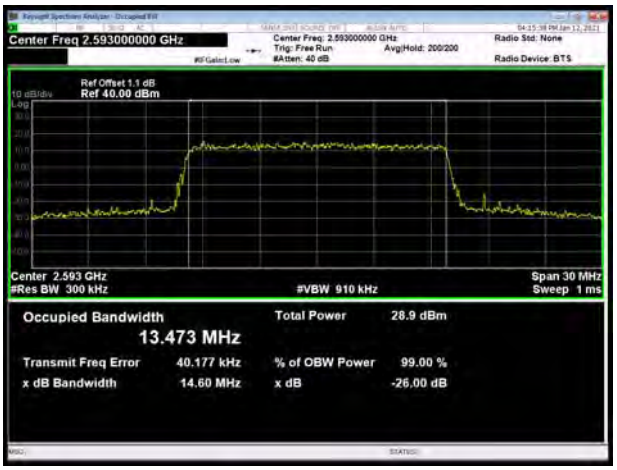
LTE Band 41 64QAM 15MHz CH-Low



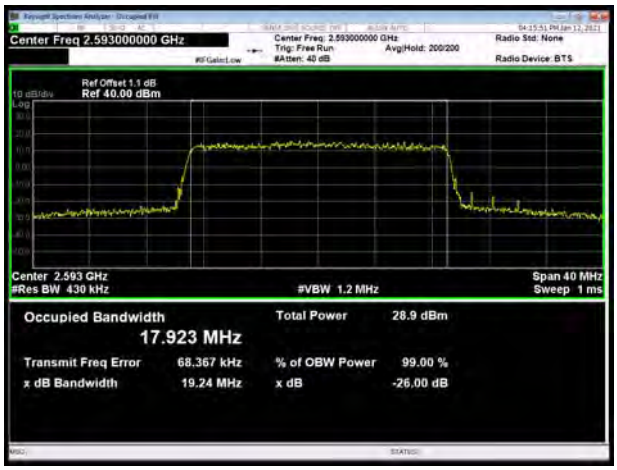
LTE Band 41 64QAM 20MHz CH-Low



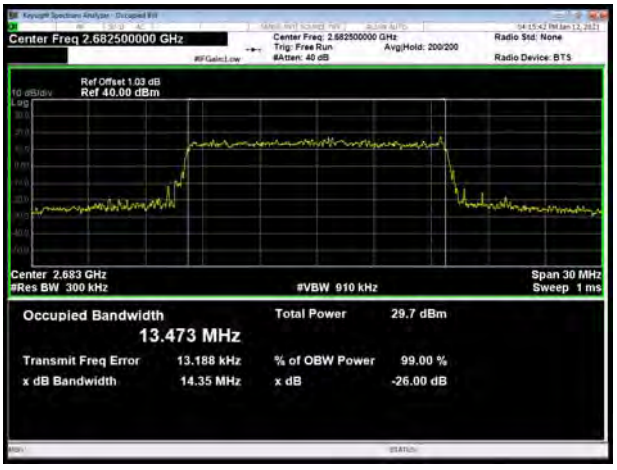
LTE Band 41 64QAM 15MHz CH-Middle



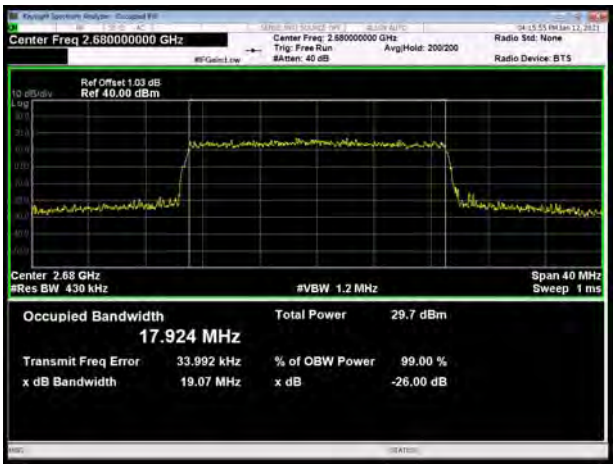
LTE Band 41 64QAM 20MHz CH-Middle



LTE Band 41 64QAM 15MHz CH-High



LTE Band 41 64QAM 20MHz CH-High



5.3 Band Edge Compliance

Ambient condition

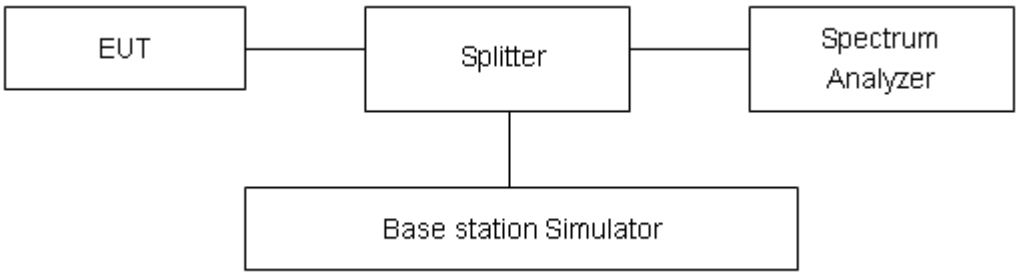
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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 testing follows KDB 971168 D01 v03r01 Section 6.0
The EUT was connected to spectrum analyzer and system simulator via a power divider.
The band edges of low and high channels for the highest RF powers were measured.
For LTE Band 7/38/ the middle channel, high channel of LTE Band 41 set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
For LTE Band 41 low channel set RBW >= 2% EBW in the 1MHz band immediately outside and adjacent to the band edge. Beyond the 1 MHz band from the band edge, RBW=1MHz was used

on spectrum analyzer.
Set spectrum analyzer with RMS detector.
The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
Checked that all the results comply with the emission limit line.

Test Setup



Limits

Rule Part 27.53(i) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2305 and 2320 MHz.

Rule Part 27.53(m) (4)/ specifies that “for BRS and EBS stations. For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual

emission bandwidth as defined in paragraph (m)(4) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Example:

The limit line is derived from 43 + 10log (P) dB below the transmitter power P(Watts)

= P(W)- [43 + 10log(P)] (dB)

= [30 + 10log (P)] (dBm) - [43 + 10log(P)] (dB) = -13dBm.

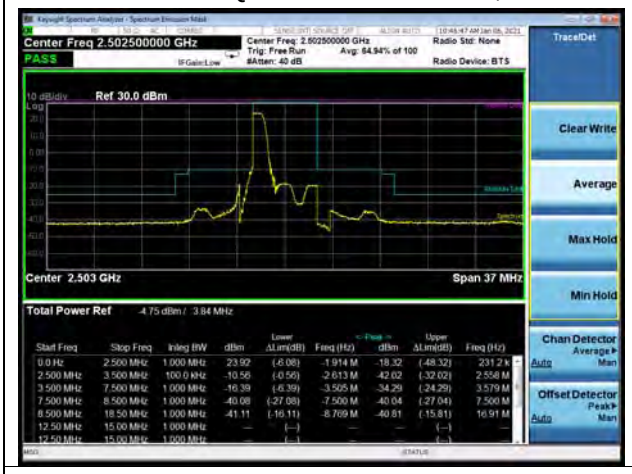
Measurement Uncertainty

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

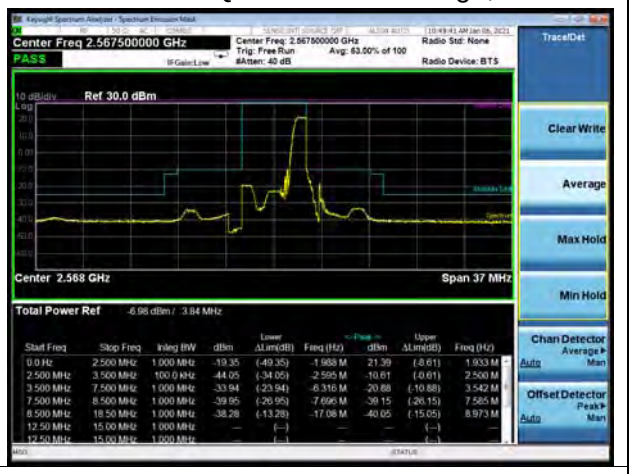
Test Result

All the test traces in the plots shows the test results clearly.

LTE Band 7 QPSK 5MHz CH-Low, 1 RB

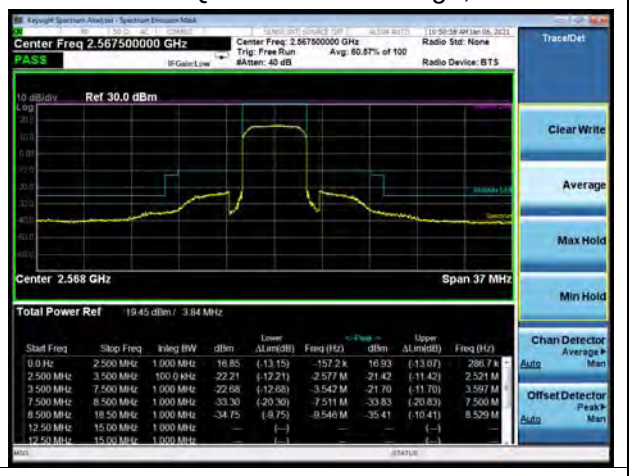


LTE Band 7 QPSK 5MHz CH-High, 1 RB

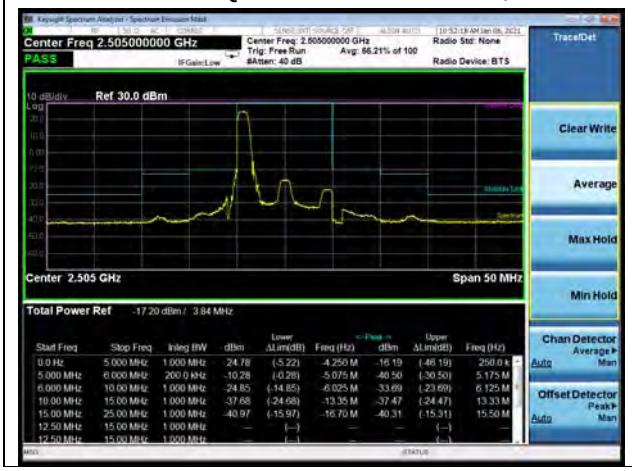


LTE Band 7 QPSK 5MHz CH-Low, 100%RB

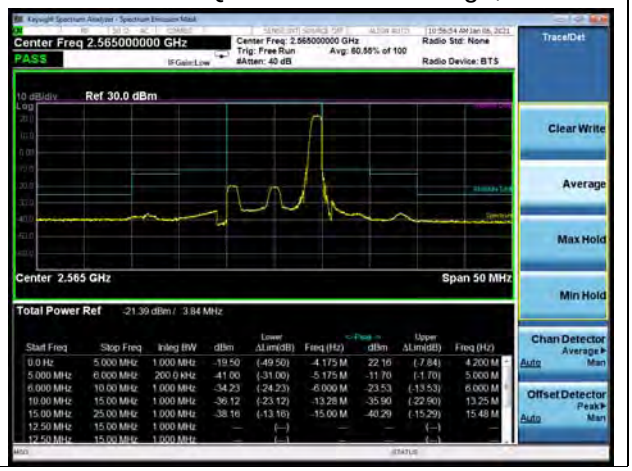
LTE Band 7 QPSK 5MHz CH-High, 100%RB



LTE Band 7 QPSK 10MHz CH-Low, 1 RB



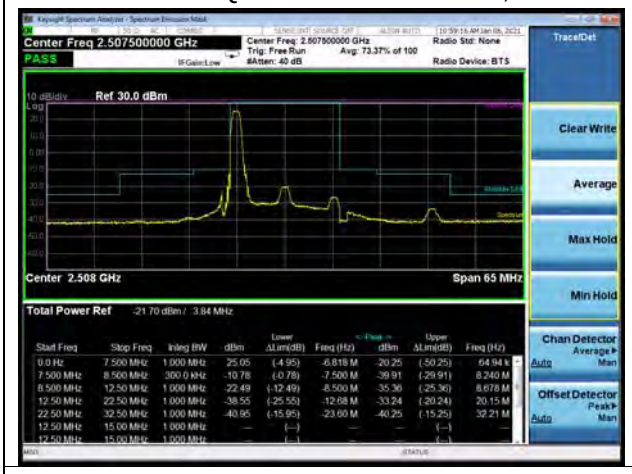
LTE Band 7 QPSK 10MHz CH-High, 1 RB



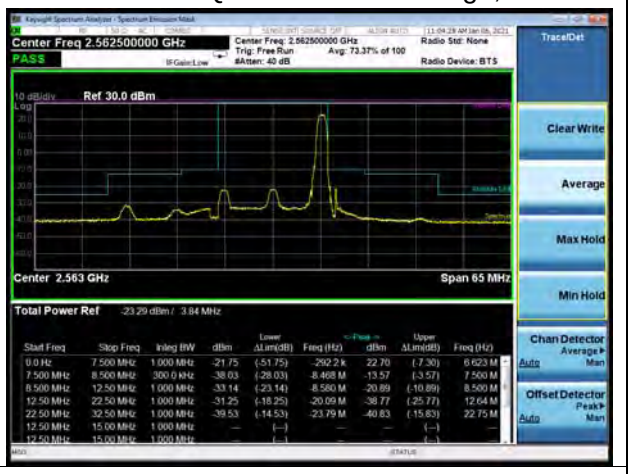
LTE Band 7 QPSK 10MHz CH-Low, 100%RB

LTE Band 7 QPSK 10MHz CH-High, 100%RB

LTE Band 7 QPSK 15MHz CH-Low, 1 RB



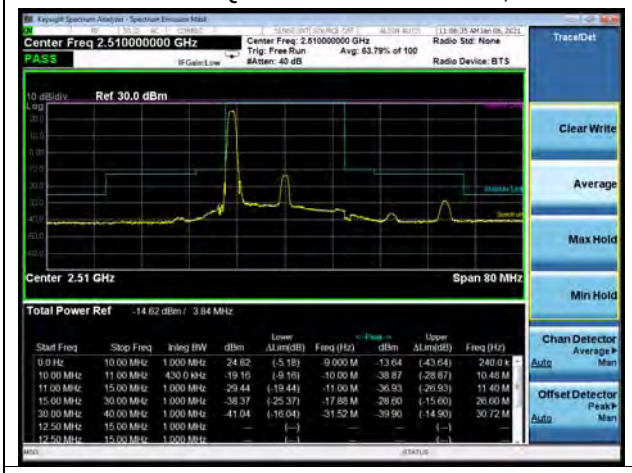
LTE Band 7 QPSK 15MHz CH-High, 1 RB



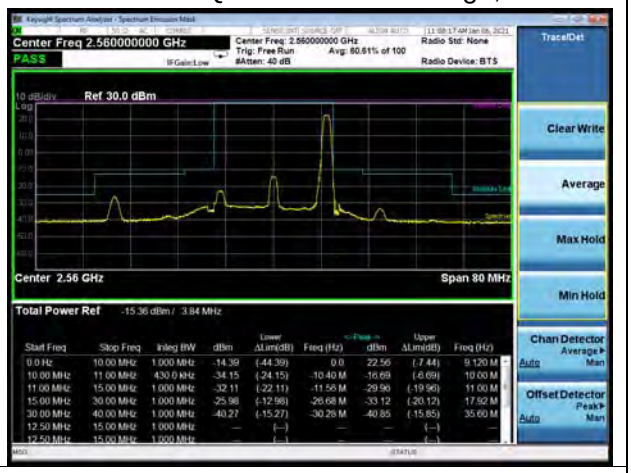
LTE Band 7 QPSK 15MHz CH-Low, 100%RB

LTE Band 7 QPSK 15MHz CH-High, 100%RB

LTE Band 7 QPSK 20MHz CH-Low, 1 RB



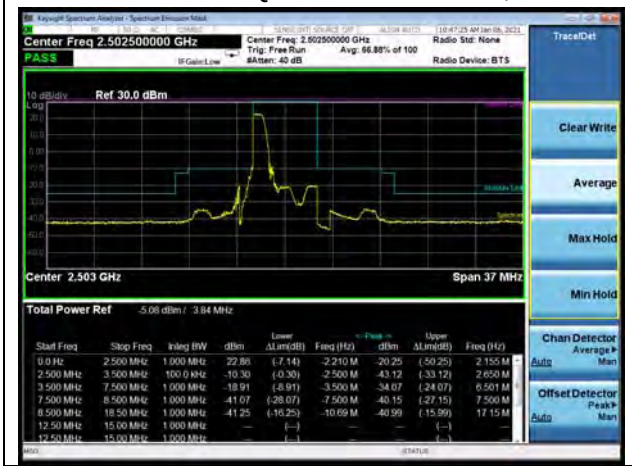
LTE Band 7 QPSK 20MHz CH-High, 1 RB



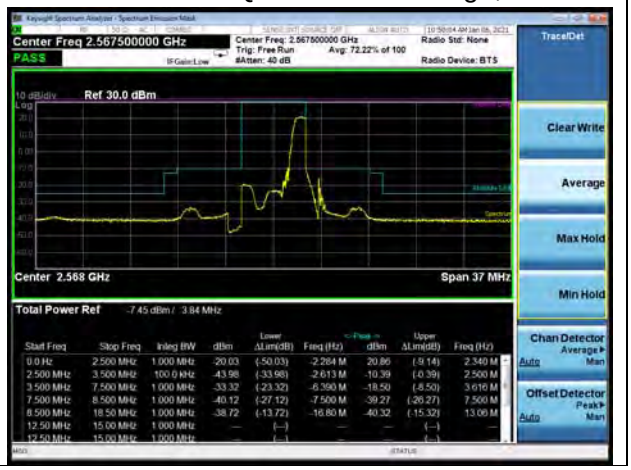
LTE Band 7 QPSK 20MHz CH-Low, 100%RB

LTE Band 7 QPSK 20MHz CH-High, 100%RB

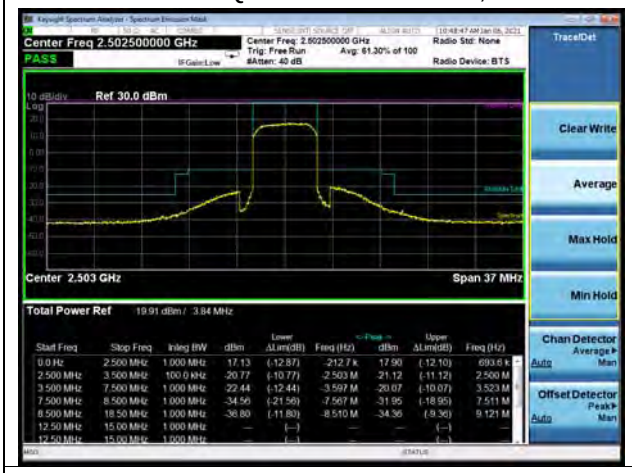
LTE Band 7 16QAM 5MHz CH-Low, 1 RB



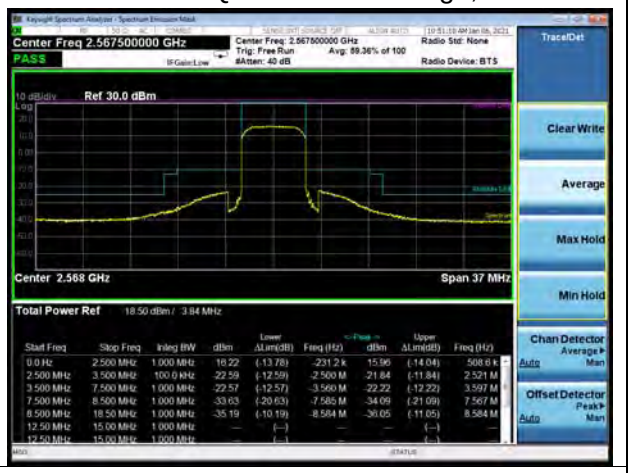
LTE Band 7 16QAM 5MHz CH-High, 1 RB



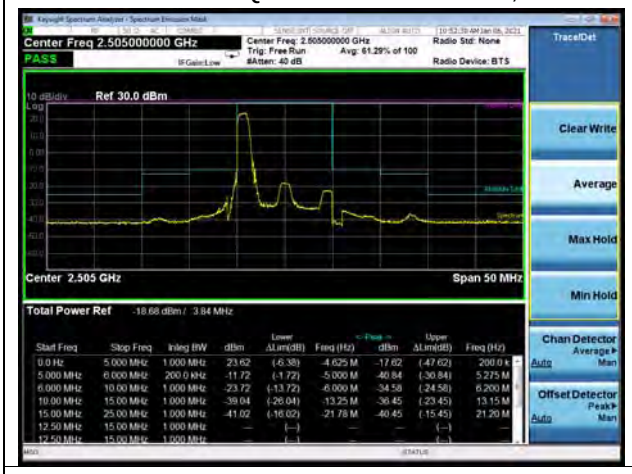
LTE Band 7 16QAM 5MHz CH-Low, 100%RB



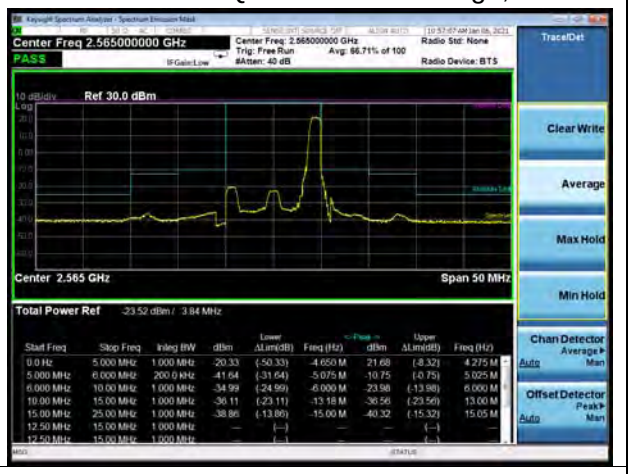
LTE Band 7 16QAM 5MHz CH-High, 100%RB



LTE Band 7 16QAM 10MHz CH-Low, 1 RB



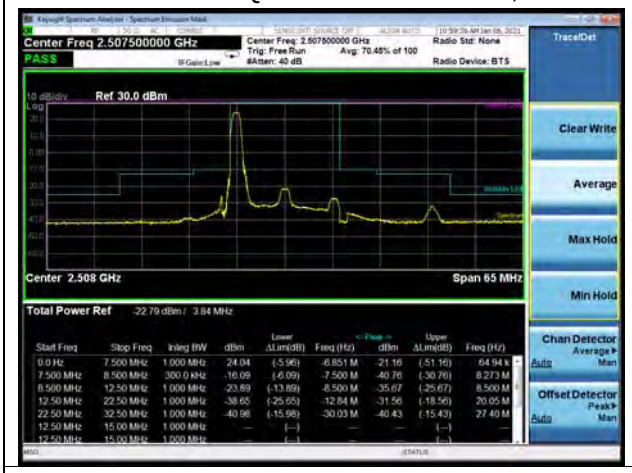
LTE Band 7 16QAM 10MHz CH-High, 1 RB



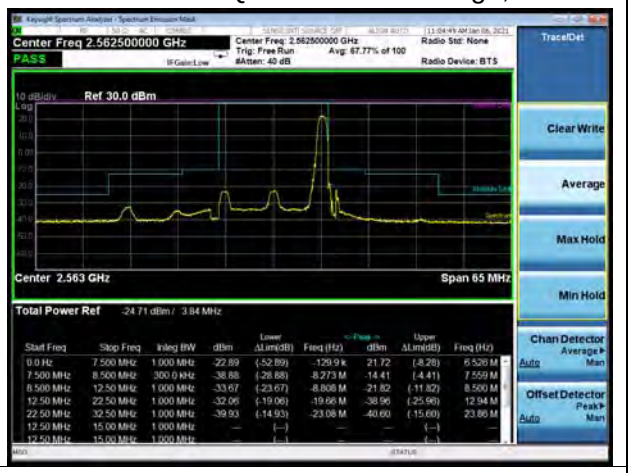
LTE Band 7 16QAM 10MHz CH-Low, 100%RB

LTE Band 7 16QAM 10MHz CH-High, 100%RB

LTE Band 7 16QAM 15MHz CH-Low, 1 RB



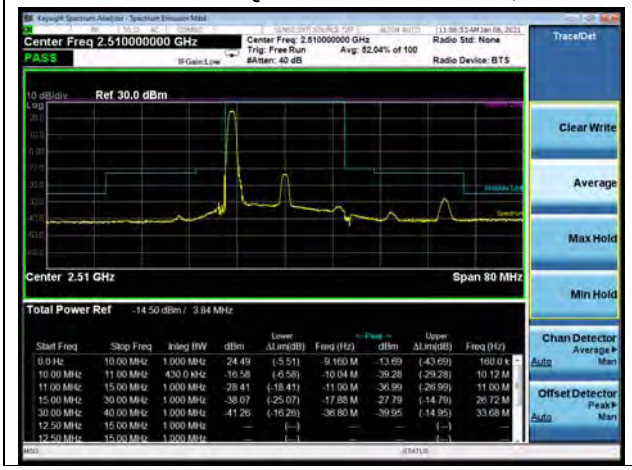
LTE Band 7 16QAM 15MHz CH-High, 1 RB



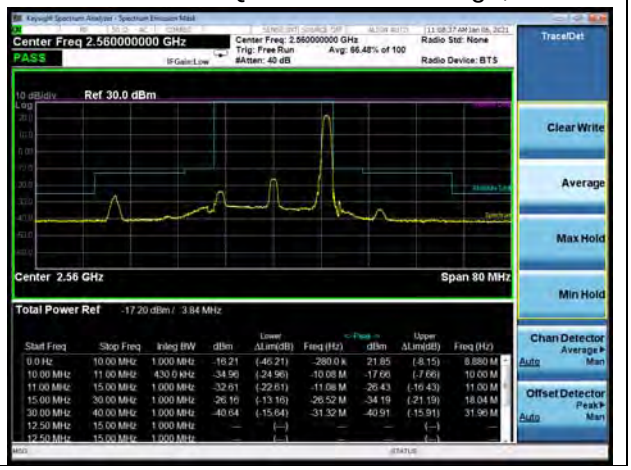
LTE Band 7 16QAM 15MHz CH-Low, 100%RB

LTE Band 7 16QAM 15MHz CH-High, 100%RB

LTE Band 7 16QAM 20MHz CH-Low, 1 RB



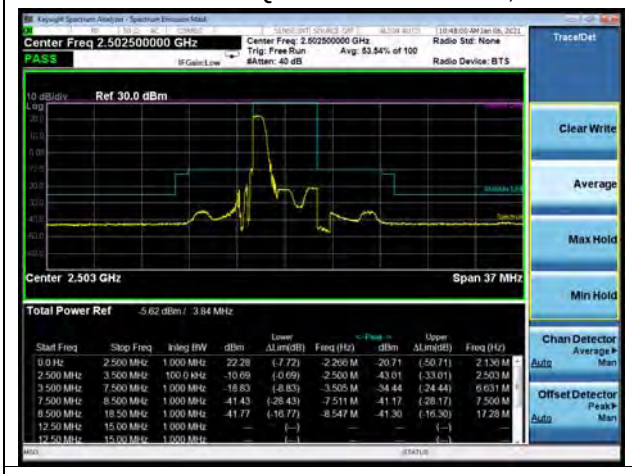
LTE Band 7 16QAM 20MHz CH-High, 1 RB



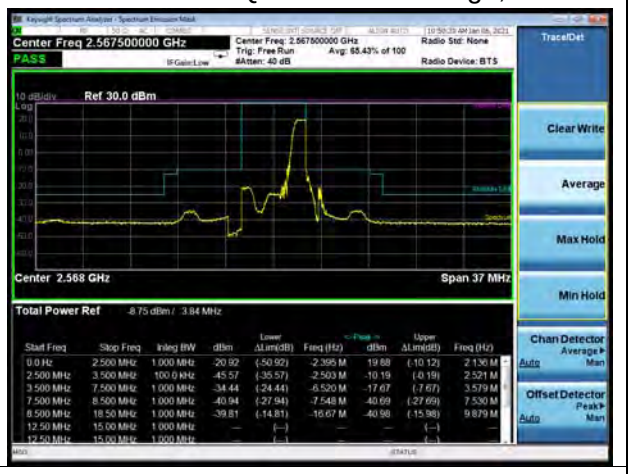
LTE Band 7 16QAM 20MHz CH-Low, 100%RB

LTE Band 7 16QAM 20MHz CH-High, 100%RB

LTE Band 7 64QAM 5MHz CH-Low, 1RB



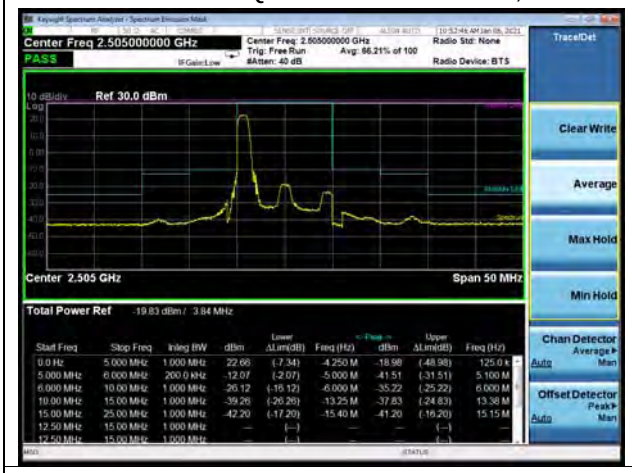
LTE Band 7 64QAM 5MHz CH-High, 1RB



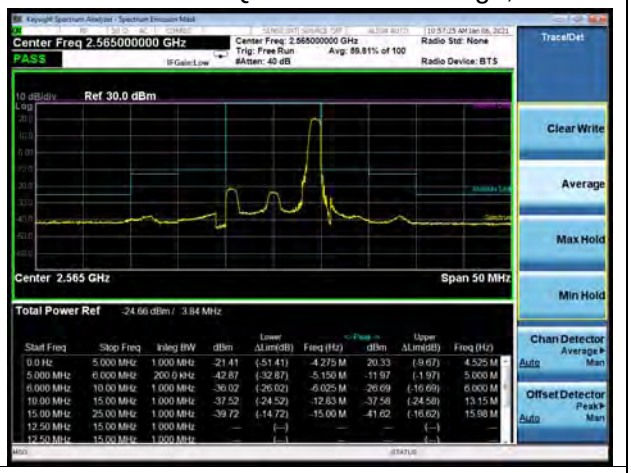
LTE Band 7 64QAM 5MHz CH-Low, 100%RB

LTE Band 7 64QAM 5MHz CH-High, 100%RB

LTE Band 7 64QAM 10MHz CH-Low, 1RB



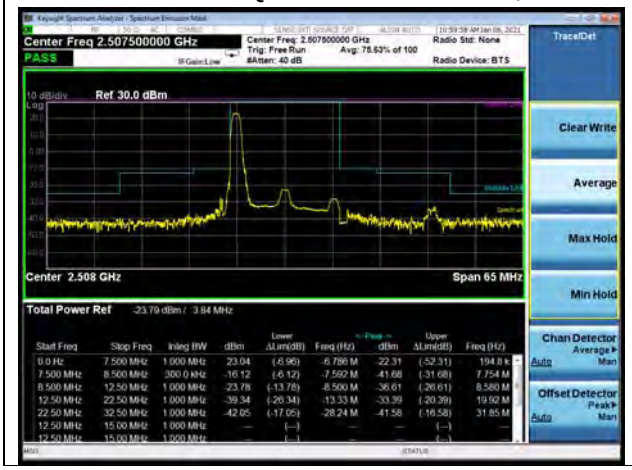
LTE Band 7 64QAM 10MHz CH-High, 1RB



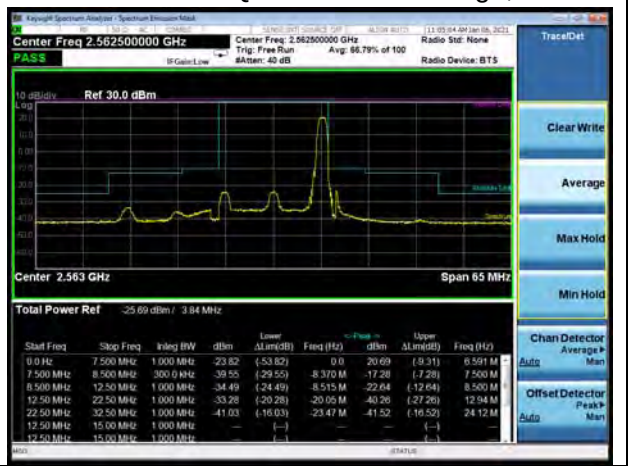
LTE Band 7 64QAM 10MHz CH-Low, 100%RB

LTE Band 7 64QAM 10MHz CH-High, 100%RB

LTE Band 7 64QAM 15MHz CH-Low, 1RB



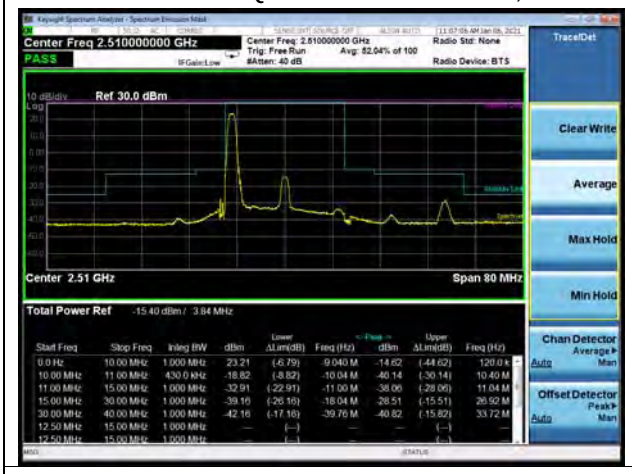
LTE Band 7 64QAM 15MHz CH-High, 1RB



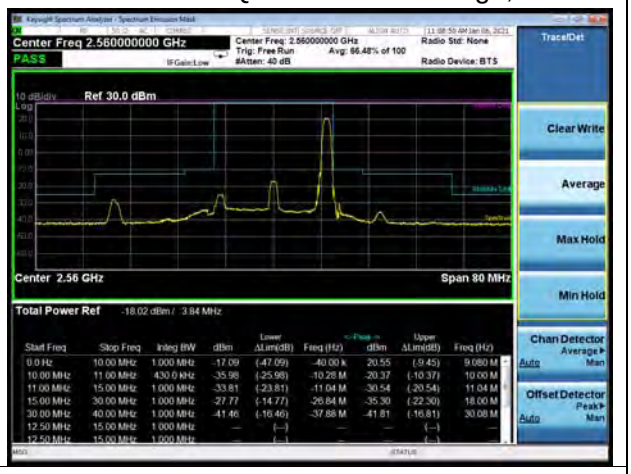
LTE Band 7 64QAM 15MHz CH-Low, 100%RB

LTE Band 7 64QAM 15MHz CH-High, 100%RB

LTE Band 7 64QAM 20MHz CH-Low, 1RB



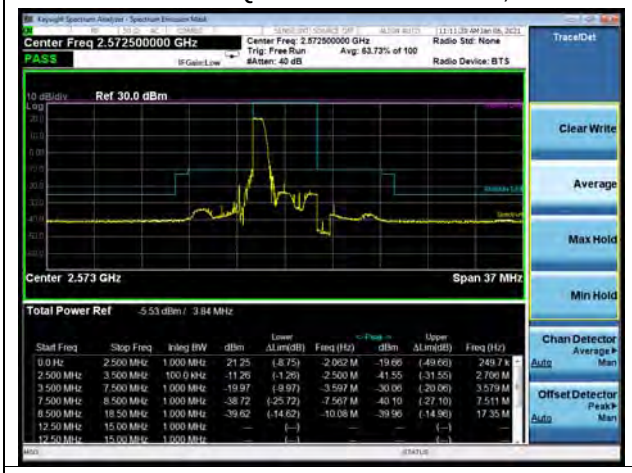
LTE Band 7 64QAM 20MHz CH-High, 1RB



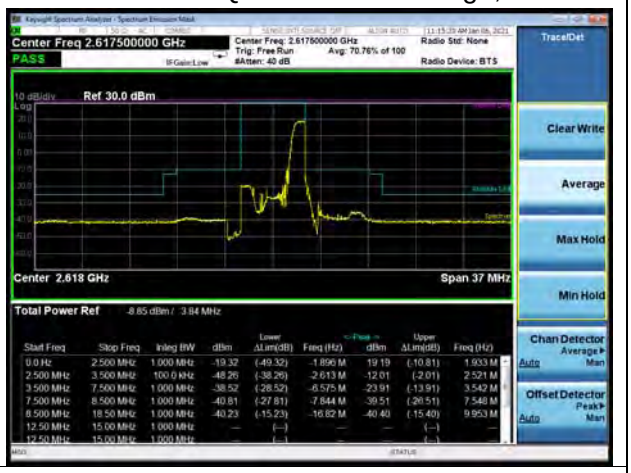
LTE Band 7 64QAM 20MHz CH-Low, 100%RB

LTE Band 7 64QAM 20MHz CH-High, 100%RB

LTE Band 38 QPSK 5MHz CH-Low, 1 RB

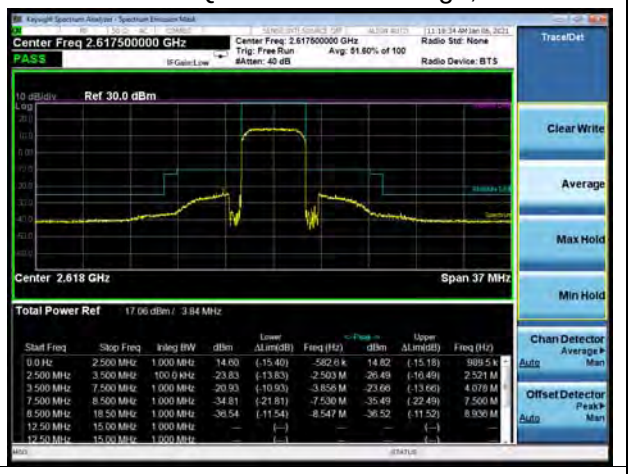


LTE Band 38 QPSK 5MHz CH-High, 1 RB

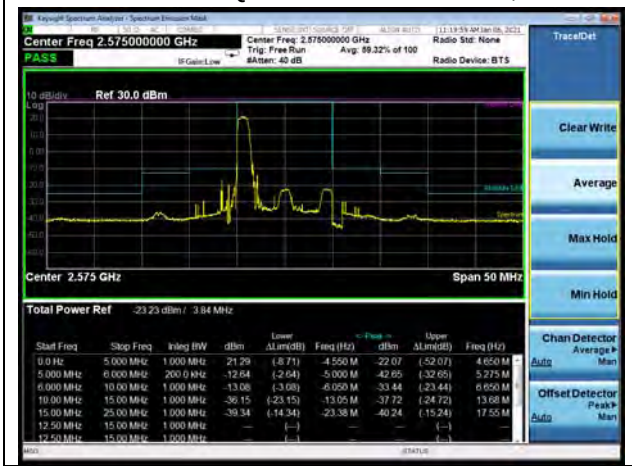


LTE Band 38 QPSK 5MHz CH-Low, 100%RB

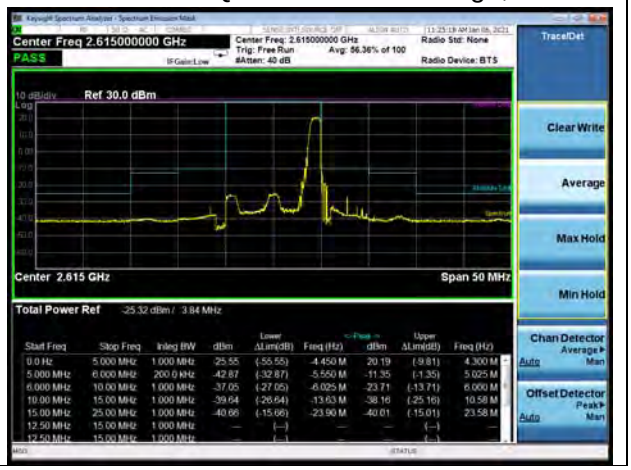
LTE Band 38 QPSK 5MHz CH-High, 100%RB



LTE Band 38 QPSK 10MHz CH-Low, 1 RB

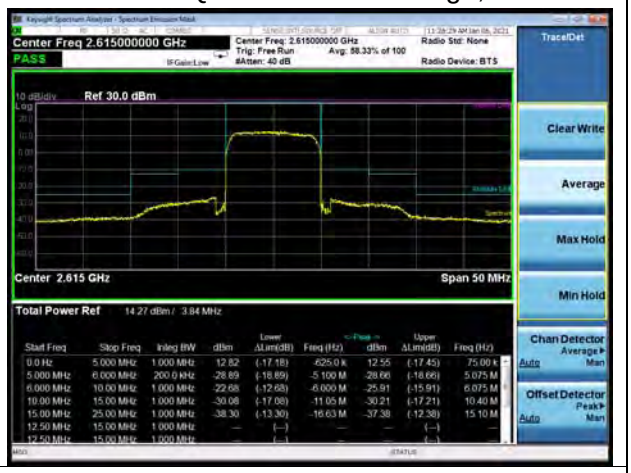


LTE Band 38 QPSK 10MHz CH-High, 1 RB

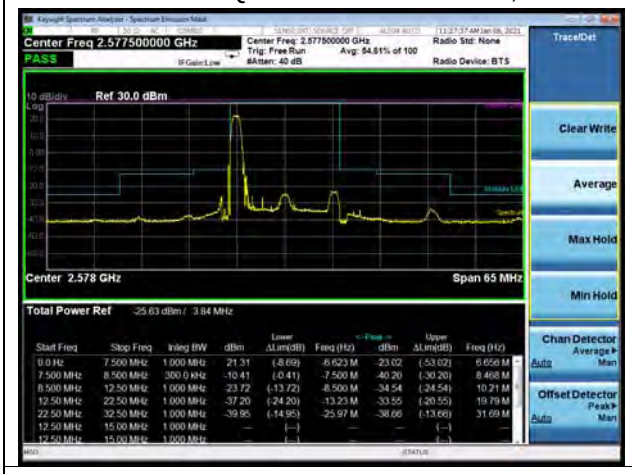


LTE Band 38 QPSK 10MHz CH-Low, 100%RB

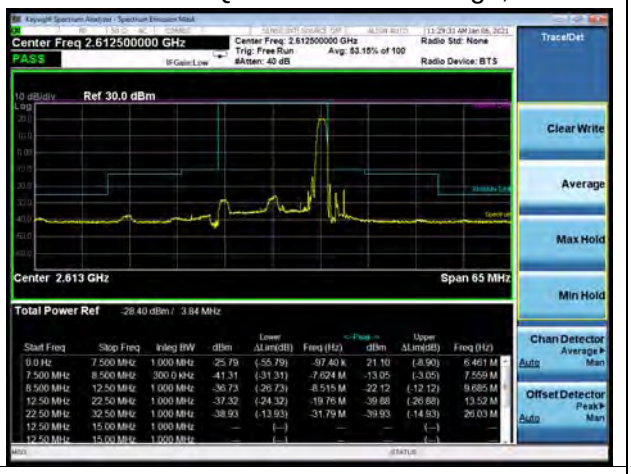
LTE Band 38 QPSK 10MHz CH-High, 100%RB



LTE Band 38 QPSK 15MHz CH-Low, 1 RB



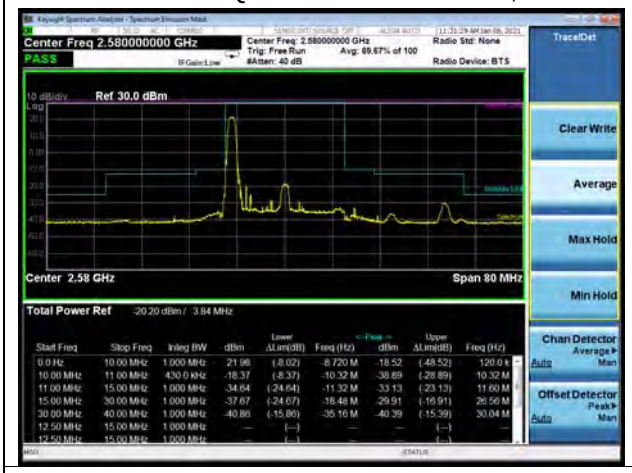
LTE Band 38 QPSK 15MHz CH-High, 1 RB



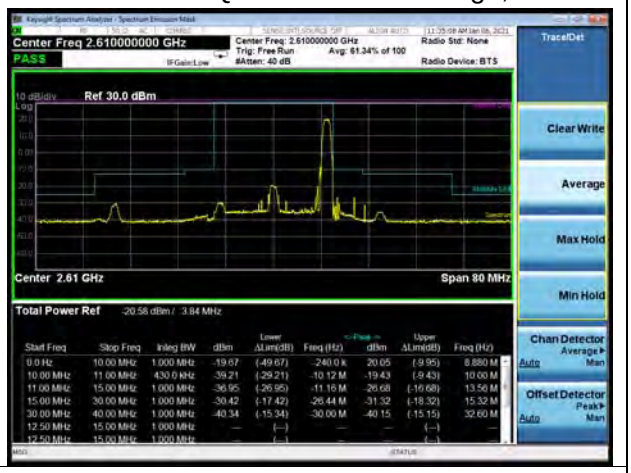
LTE Band 38 QPSK 15MHz CH-Low, 100%RB

LTE Band 38 QPSK 15MHz CH-High, 100%RB

LTE Band 38 QPSK 20MHz CH-Low, 1 RB



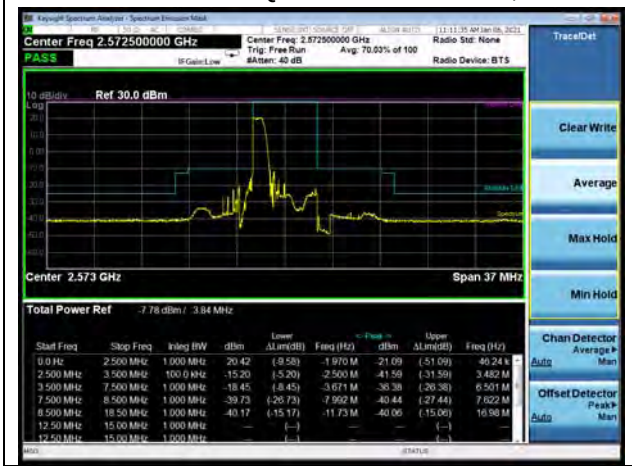
LTE Band 38 QPSK 20MHz CH-High, 1 RB



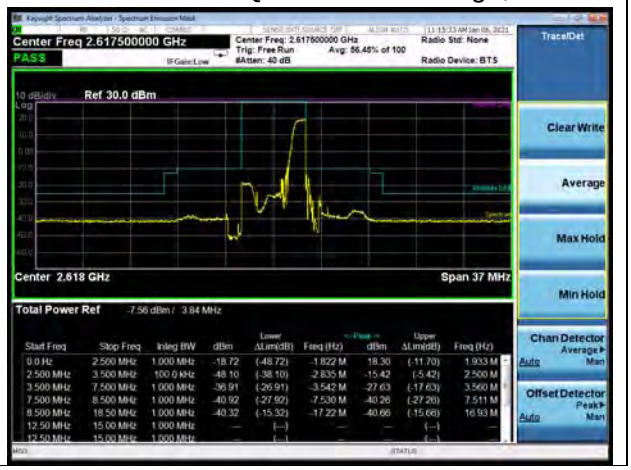
LTE Band 38 QPSK 20MHz CH-Low, 100%RB

LTE Band 38 QPSK 20MHz CH-High, 100%RB

LTE Band 38 16QAM 5MHz CH-Low, 1 RB

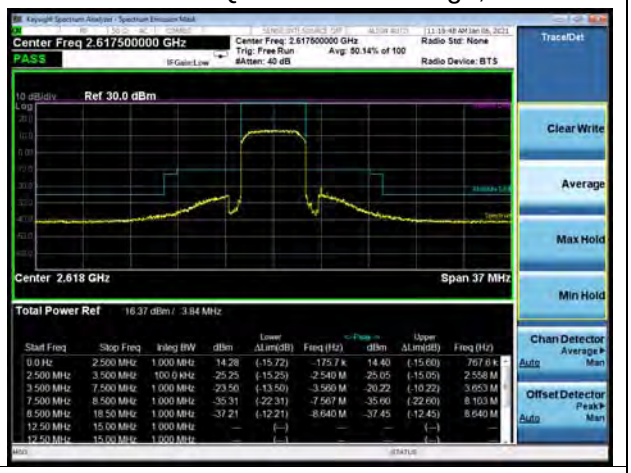


LTE Band 38 16QAM 5MHz CH-High, 1 RB

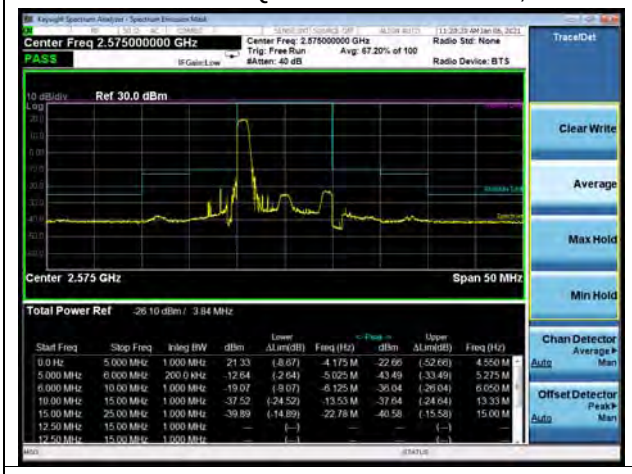


LTE Band 38 16QAM 5MHz CH-Low, 100%RB

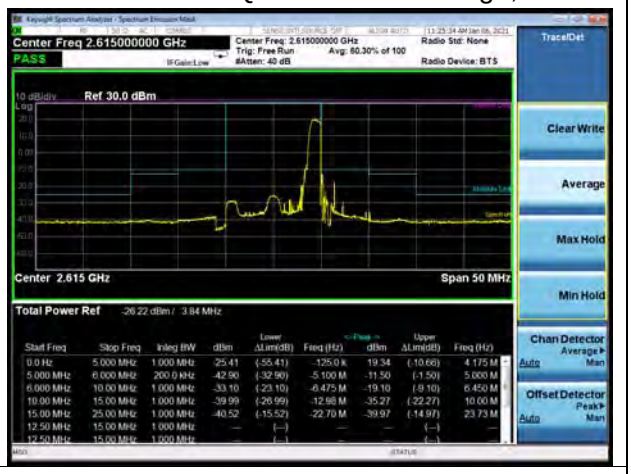
LTE Band 38 16QAM 5MHz CH-High, 100%RB



LTE Band 38 16QAM 10MHz CH-Low, 1 RB



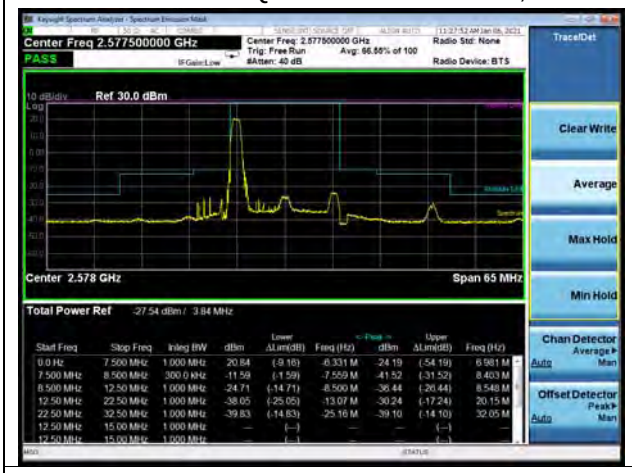
LTE Band 38 16QAM 10MHz CH-High, 1 RB



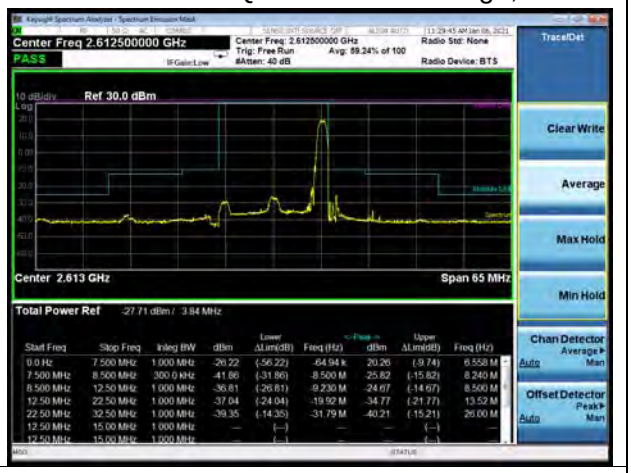
LTE Band 38 16QAM 10MHz CH-Low, 100%RB

LTE Band 38 16QAM 10MHz CH-High, 100%RB

LTE Band 38 16QAM 15MHz CH-Low, 1 RB



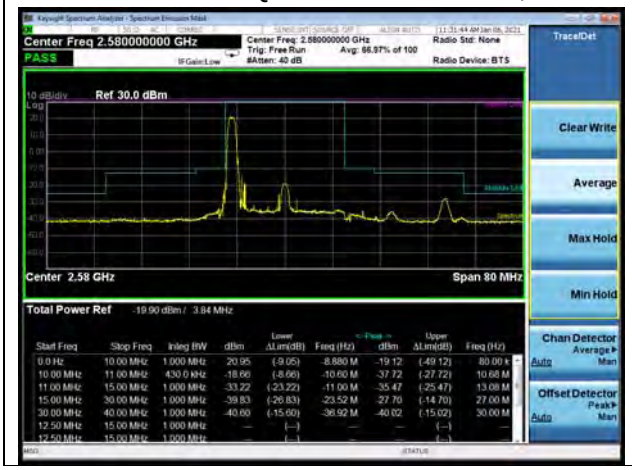
LTE Band 38 16QAM 15MHz CH-High, 1 RB



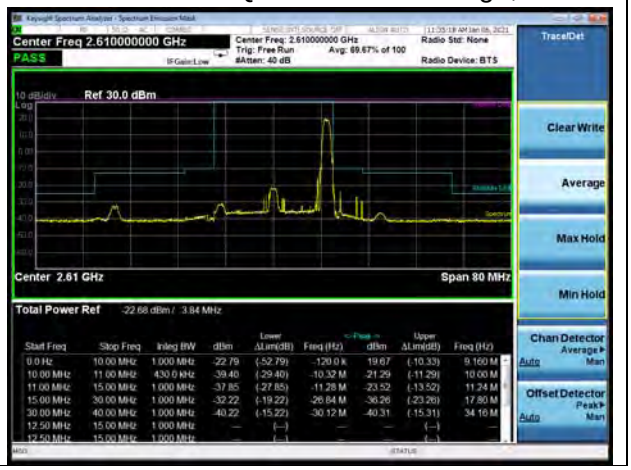
LTE Band 38 16QAM 15MHz CH-Low, 100%RB

LTE Band 38 16QAM 15MHz CH-High, 100%RB

LTE Band 38 16QAM 20MHz CH-Low, 1 RB



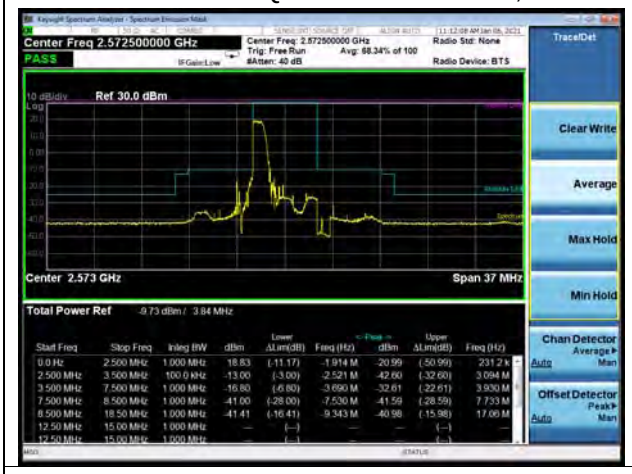
LTE Band 38 16QAM 20MHz CH-High, 1 RB



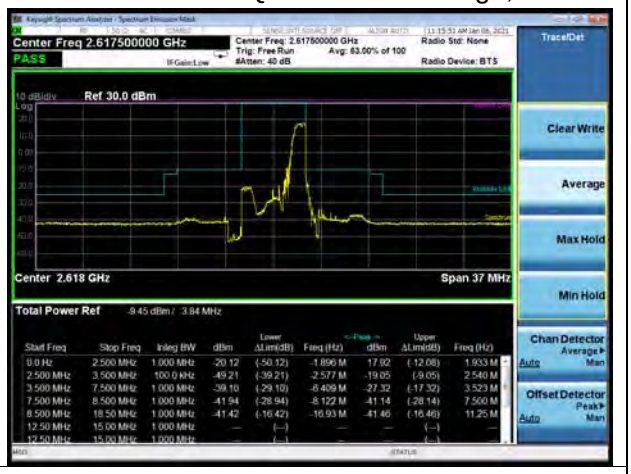
LTE Band 38 16QAM 20MHz CH-Low, 100%RB

LTE Band 38 16QAM 20MHz CH-High, 100%RB

LTE Band 38 64QAM 5MHz CH-Low, 1RB



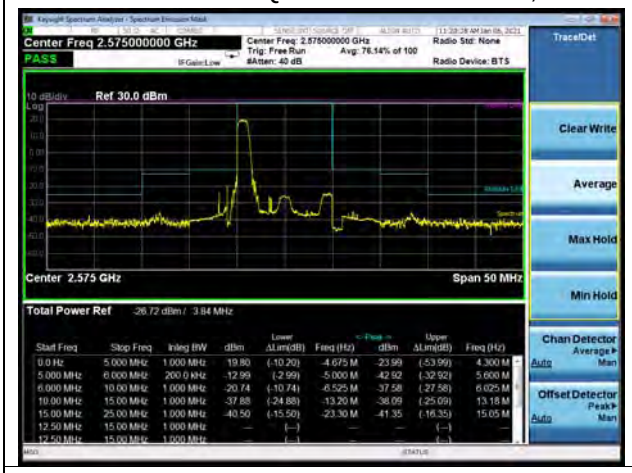
LTE Band 38 64QAM 5MHz CH-High, 1RB



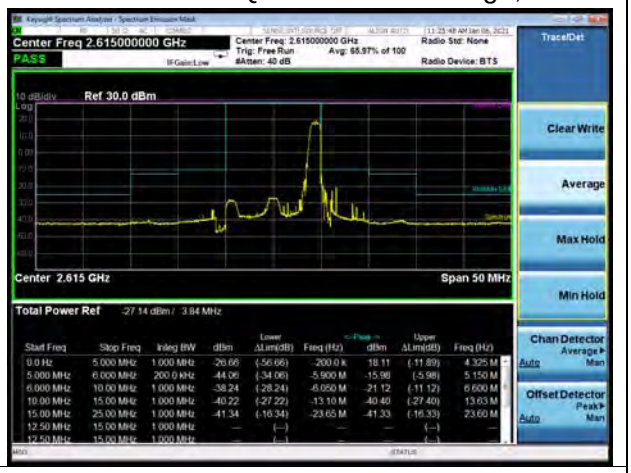
LTE Band 38 64QAM 5MHz CH-Low, 100%RB

LTE Band 38 64QAM 5MHz CH-High, 100%RB

LTE Band 38 64QAM 10MHz CH-Low, 1RB

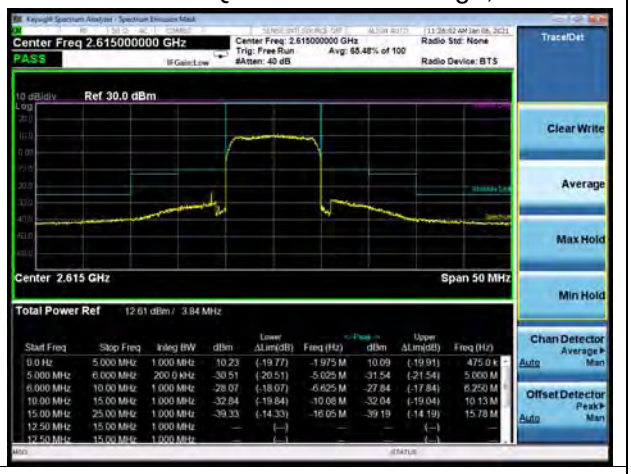


LTE Band 38 64QAM 10MHz CH-High, 1RB

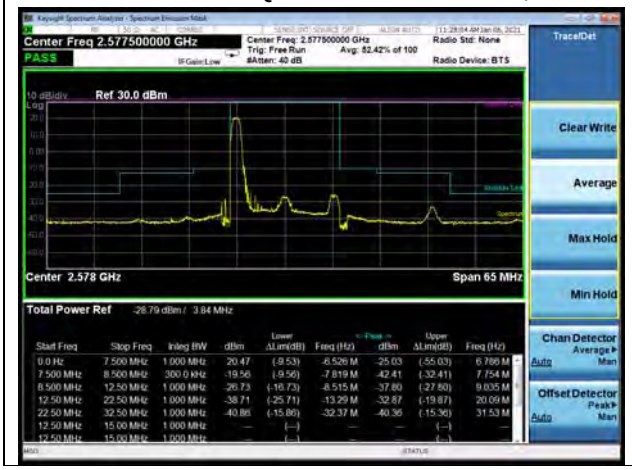


LTE Band 38 64QAM 10MHz CH-Low, 100%RB

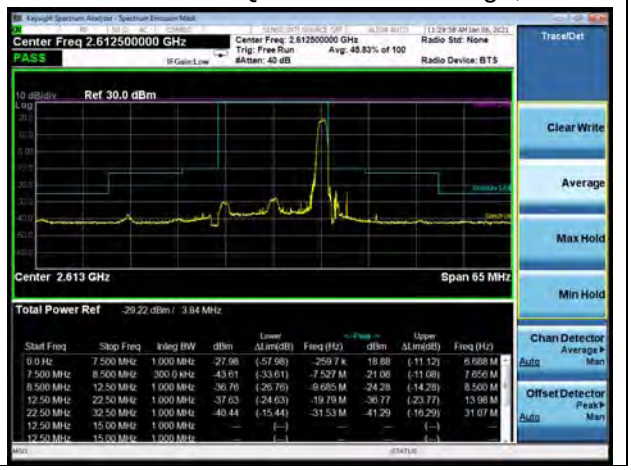
LTE Band 38 64QAM 10MHz CH-High, 100%RB



LTE Band 38 64QAM 15MHz CH-Low, 1RB



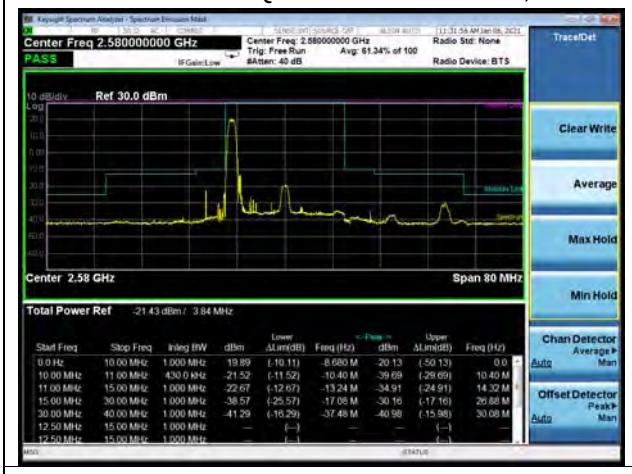
LTE Band 38 64QAM 15MHz CH-High, 1RB



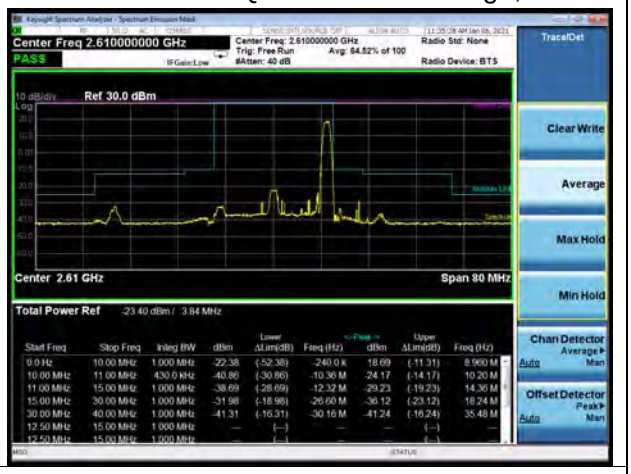
LTE Band 38 64QAM 15MHz CH-Low, 100%RB

LTE Band 38 64QAM 15MHz CH-High, 100%RB

LTE Band 38 64QAM 20MHz CH-Low, 1RB



LTE Band 38 64QAM 20MHz CH-High, 1RB



LTE Band 38 64QAM 20MHz CH-Low, 100%RB

LTE Band 38 64QAM 20MHz CH-High, 100%RB

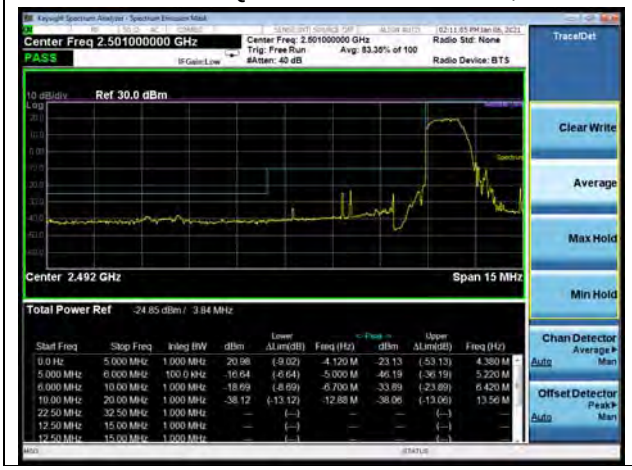
LTE Band 41 QPSK 5MHz CH-Low, 1 RB

LTE Band 41 QPSK 5MHz CH-High, 1 RB

LTE Band 41 QPSK 5MHz CH-Low, 100%RB

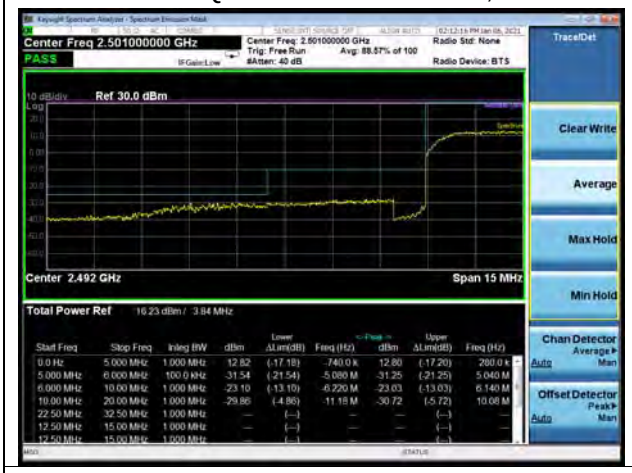
LTE Band 41 QPSK 5MHz CH-High, 100%RB

LTE Band 41 QPSK 10MHz CH-Low, 1 RB



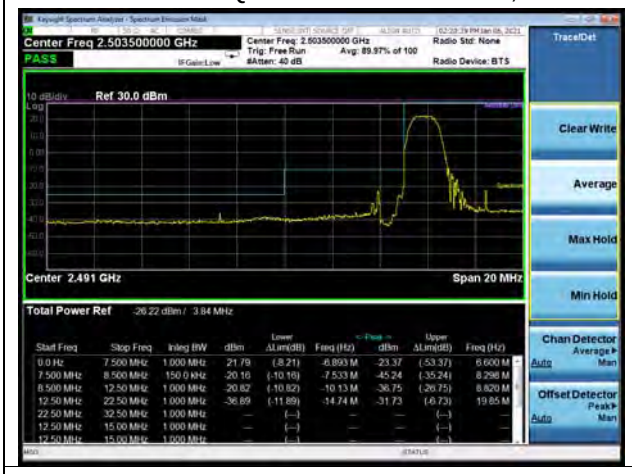
LTE Band 41 QPSK 10MHz CH-High, 1 RB

LTE Band 41 QPSK 10MHz CH-Low, 100%RB



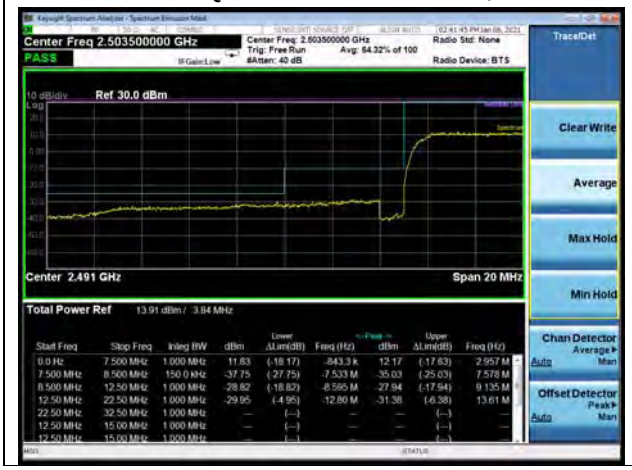
LTE Band 41 QPSK 10MHz CH-High, 100%RB

LTE Band 41 QPSK 15MHz CH-Low, 1 RB



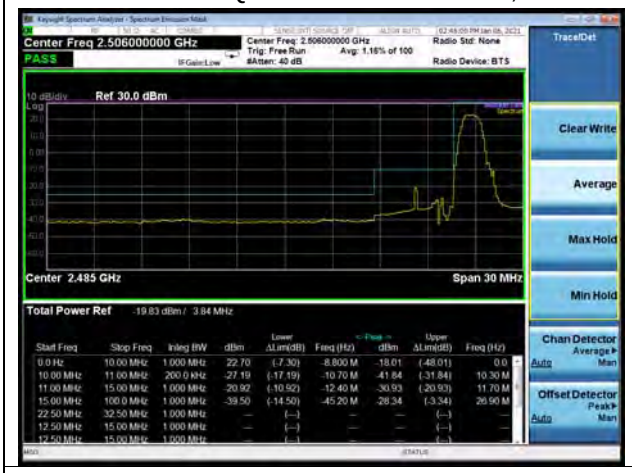
LTE Band 41 QPSK 15MHz CH-High, 1 RB

LTE Band 41 QPSK 15MHz CH-Low, 100%RB

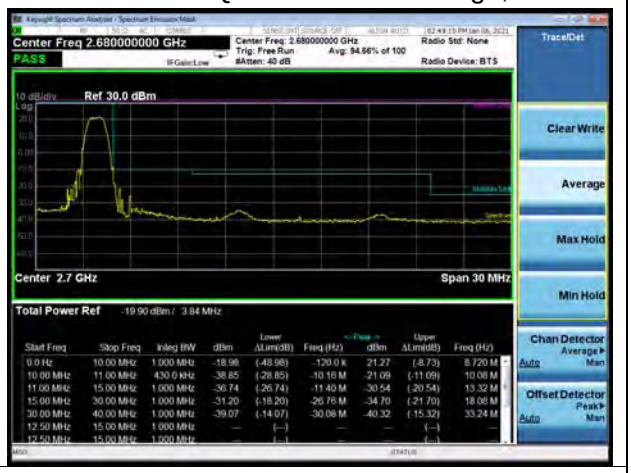


LTE Band 41 QPSK 15MHz CH-High, 100%RB

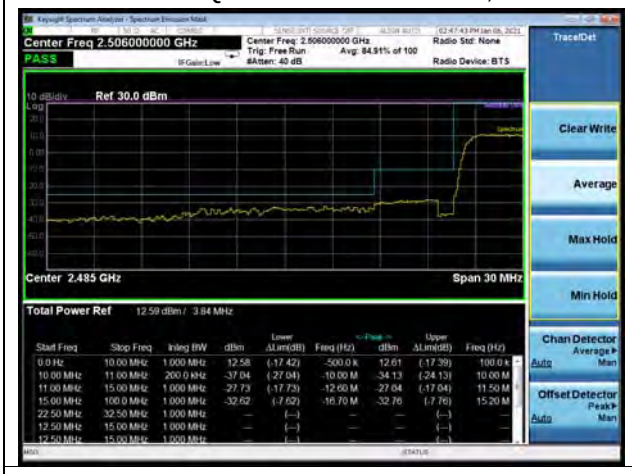
LTE Band 41 QPSK 20MHz CH-Low, 1 RB



LTE Band 41 QPSK 20MHz CH-High, 1 RB



LTE Band 41 QPSK 20MHz CH-Low, 100%RB



LTE Band 41 QPSK 20MHz CH-High, 100%RB

LTE Band 41 16QAM 5MHz CH-Low, 1 RB

LTE Band 41 16QAM 5MHz CH-High, 1 RB

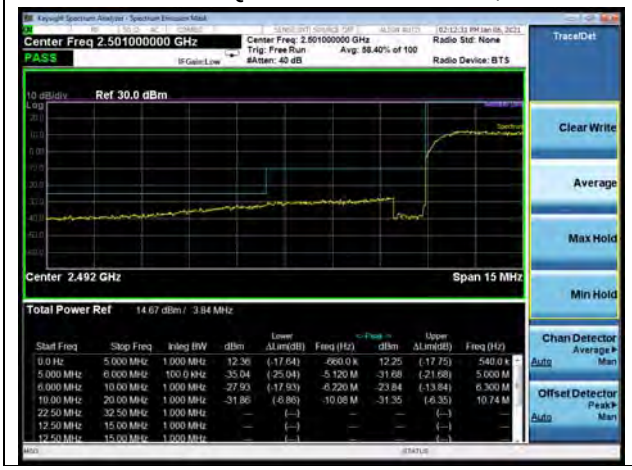
LTE Band 41 16QAM 5MHz CH-Low, 100%RB

LTE Band 41 16QAM 5MHz CH-High, 100%RB

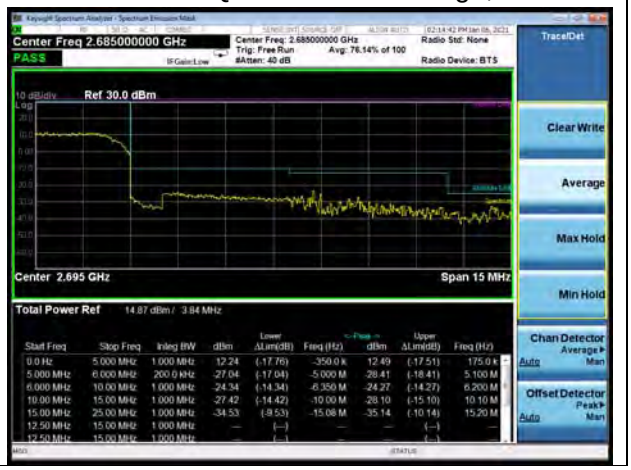
LTE Band 41 16QAM 10MHz CH-Low, 1 RB

LTE Band 41 16QAM 10MHz CH-High, 1 RB

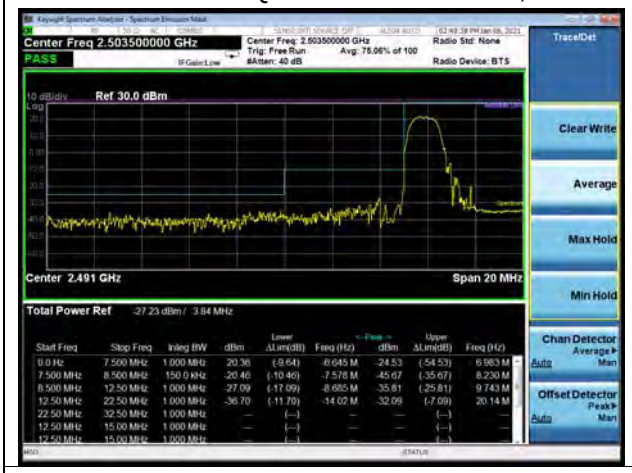
LTE Band 41 16QAM 10MHz CH-Low, 100%RB



LTE Band 41 16QAM 10MHz CH-High, 100%RB

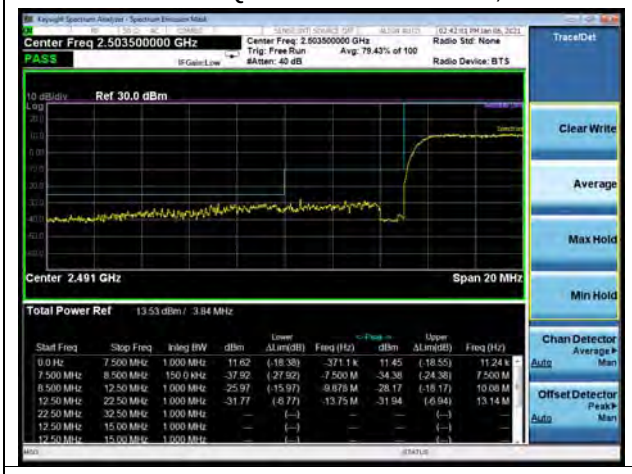


LTE Band 41 16QAM 15MHz CH-Low, 1 RB



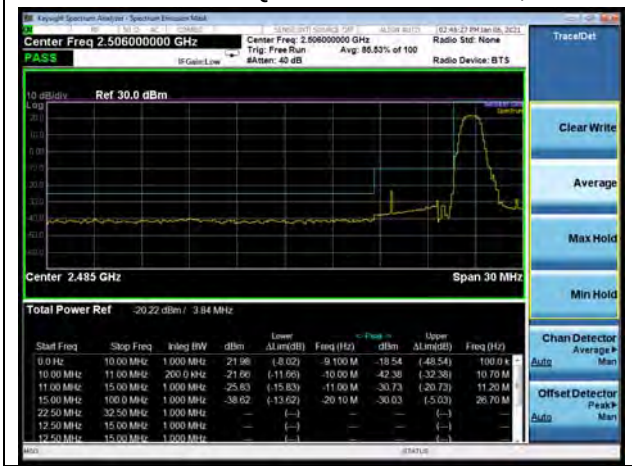
LTE Band 41 16QAM 15MHz CH-High, 1 RB

LTE Band 41 16QAM 15MHz CH-Low, 100%RB



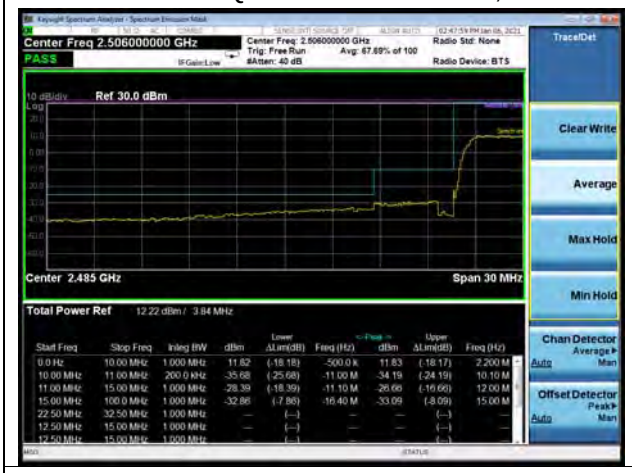
LTE Band 41 16QAM 15MHz CH-High, 100%RB

LTE Band 41 16QAM 20MHz CH-Low, RB 1

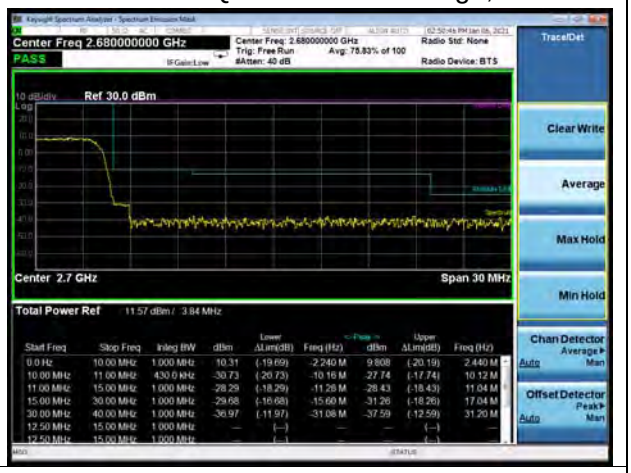


LTE Band 41 16QAM 20MHz CH-High, RB 1

LTE Band 41 16QAM 20MHz CH-Low, 100%RB



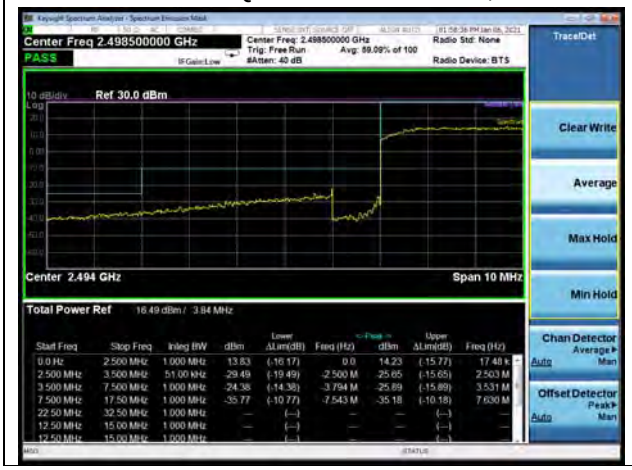
LTE Band 41 16QAM 20MHz CH-High, 100%RB



LTE Band 41 64QAM 5MHz CH-Low, 1RB

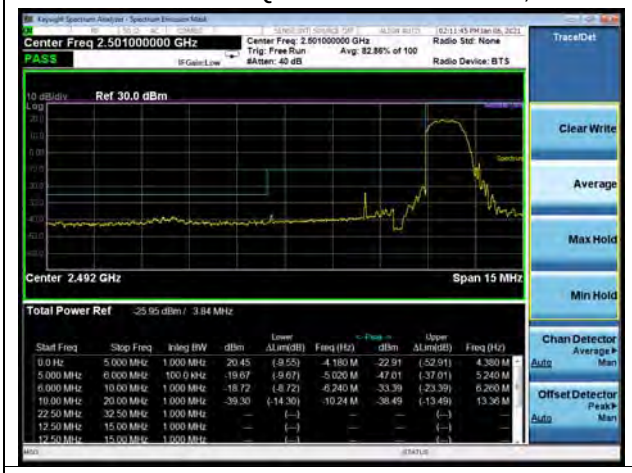
LTE Band 41 64QAM 5MHz CH-High, 1RB

LTE Band 41 64QAM 5MHz CH-Low, 100%RB



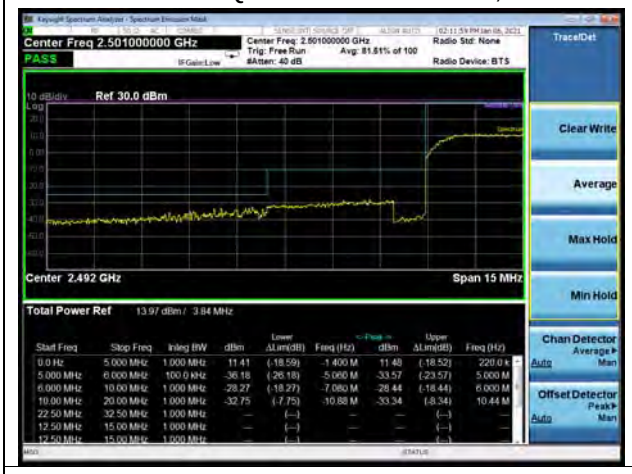
LTE Band 41 64QAM 5MHz CH-High, 100%RB

LTE Band 41 64QAM 10MHz CH-Low, 1RB



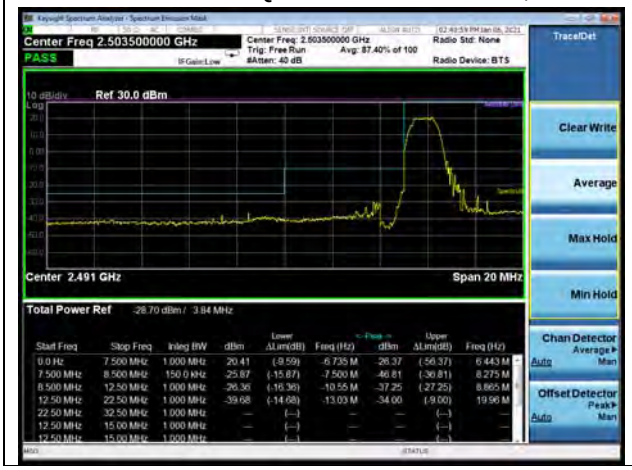
LTE Band 41 64QAM 10MHz CH-High, 1RB

LTE Band 41 64QAM 10MHz CH-Low, 100%RB



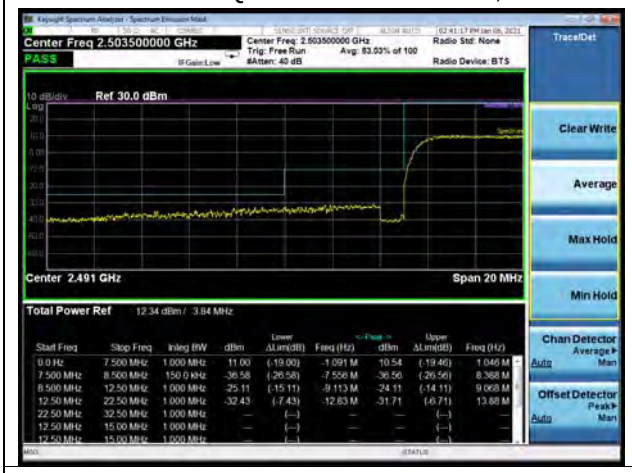
LTE Band 41 64QAM 10MHz CH-High, 100%RB

LTE Band 41 64QAM 15MHz CH-Low, 1RB



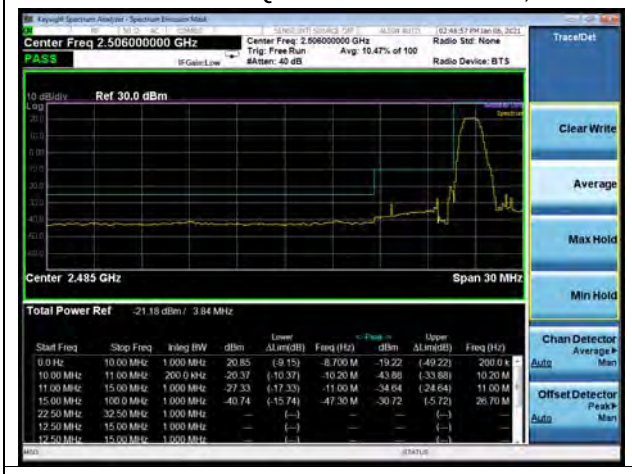
LTE Band 41 64QAM 15MHz CH-High, 1RB

LTE Band 41 64QAM 15MHz CH-Low, 100%RB

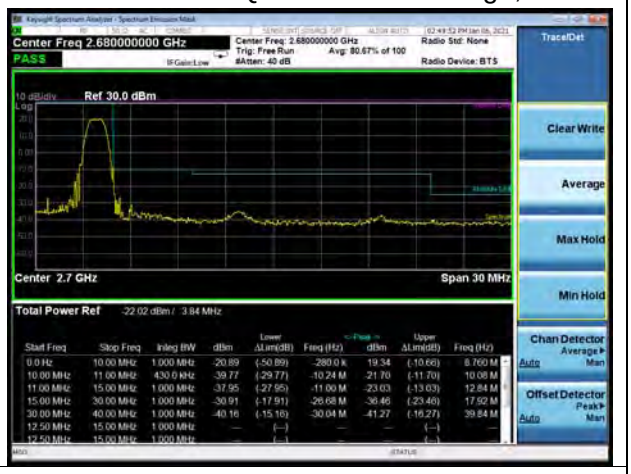


LTE Band 41 64QAM 15MHz CH-High, 100%RB

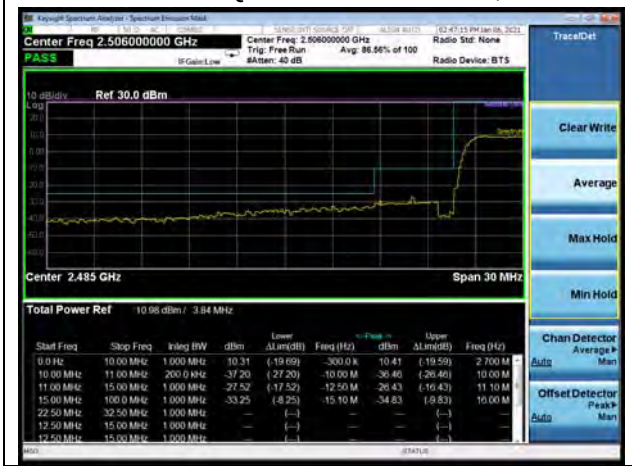
LTE Band 41 64QAM 20MHz CH-Low, 1RB



LTE Band 41 64QAM 20MHz CH-High, 1RB



LTE Band 41 64QAM 20MHz CH-Low, 100%RB



LTE Band 41 64QAM 20MHz CH-High, 100%RB

5.4 Peak-to-Average Power Ratio (PAPR)

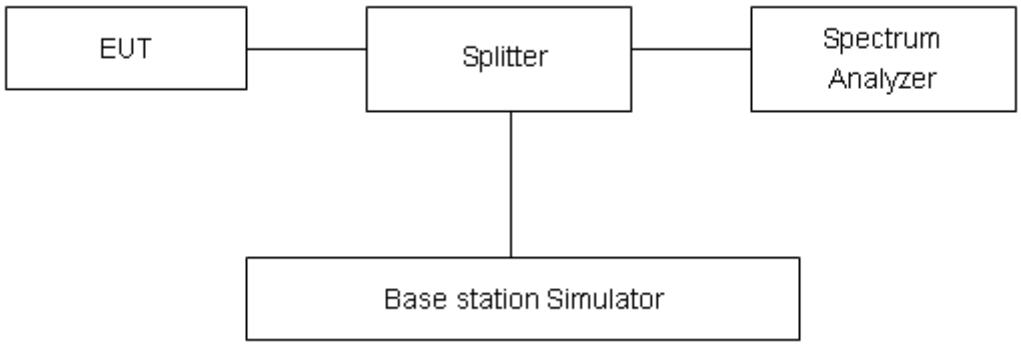
Ambient condition

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

Methods of Measurement

Measure the total peak power and record as PPk. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (*e.g.*, dBm). Determine the PAPR from:
PAPR (dB) = PPk (dBm) - PAvg (dBm).

Test Setup



Limits

Rule Part 27.50(d)(5) Equipment employed must be authorized in accordance with the provisions of 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

Measurement Uncertainty

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

Test Results

LTE Band 7								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	20775	2502.5	27.17	21.95	5.22	≤13	PASS
		21100	2535	25.72	20.22	5.50	≤13	PASS
		21425	2567.5	25.92	20.56	5.36	≤13	PASS
	10	20800	2505	27.20	22.12	5.08	≤13	PASS
		21100	2535	26.19	20.80	5.39	≤13	PASS
		21400	2565	26.37	21.14	5.23	≤13	PASS
	15	20825	2507.5	27.89	22.65	5.24	≤13	PASS
		21100	2535	27.12	21.38	5.74	≤13	PASS
		21375	2562.5	27.41	21.84	5.57	≤13	PASS
	20	20850	2510	27.57	22.51	5.06	≤13	PASS
		21100	2535	26.78	21.40	5.38	≤13	PASS
		21350	2560	27.69	22.26	5.43	≤13	PASS
16QAM	5	20775	2502.5	27.07	21.09	5.98	≤13	PASS
		21100	2535	25.53	19.36	6.17	≤13	PASS
		21425	2567.5	25.73	19.59	6.14	≤13	PASS
	10	20800	2505	27.13	21.24	5.89	≤13	PASS
		21100	2535	26.11	19.95	6.16	≤13	PASS
		21400	2565	26.20	20.17	6.03	≤13	PASS
	15	20825	2507.5	27.55	21.65	5.90	≤13	PASS
		21100	2535	26.70	20.48	6.22	≤13	PASS
		21375	2562.5	26.95	20.85	6.10	≤13	PASS
	20	20850	2510	27.36	21.43	5.93	≤13	PASS
		21100	2535	26.60	20.39	6.21	≤13	PASS
		21350	2560	27.42	21.28	6.14	≤13	PASS
64QAM	5	20775	2502.5	26.53	20.65	5.88	≤13	PASS
		21100	2535	25.06	18.87	6.19	≤13	PASS
		21425	2567.5	25.27	19.18	6.09	≤13	PASS
	10	20800	2505	26.64	20.80	5.84	≤13	PASS
		21100	2535	25.52	19.37	6.15	≤13	PASS
		21400	2565	25.71	19.70	6.01	≤13	PASS
	15	20825	2507.5	26.79	20.91	5.88	≤13	PASS

		21100	2535	25.86	19.67	6.19	≤13	PASS
		21375	2562.5	26.23	20.14	6.09	≤13	PASS
	20	20850	2510	26.68	20.79	5.89	≤13	PASS
		21100	2535	25.76	19.56	6.20	≤13	PASS
		21350	2560	26.63	20.51	6.12	≤13	PASS

LTE Band 38								
Modulation	**Bandwidth (MHz)**	**Channel**	**Frequency (MHz)**	**Peak (dBm)**	**Avg (dBm)**	**PAPR (dB)**	**Limit (dB)**	**Conclusion**
QPSK	5	37775	2572.5	28.11	18.72	9.39	≤13	PASS
		38000	2595	27.28	18.37	8.91	≤13	PASS
		38225	2617.5	27.01	18.06	8.95	≤13	PASS
	10	37800	2575	28.31	19.42	8.89	≤13	PASS
		38000	2595	27.79	18.65	9.14	≤13	PASS
		38200	2615	26.98	18.30	8.68	≤13	PASS
	15	37825	2577.5	28.59	18.92	9.67	≤13	PASS
		38000	2595	28.13	18.92	9.21	≤13	PASS
		38175	2612.5	27.36	17.93	9.43	≤13	PASS
	20	37850	2580	28.20	19.50	8.70	≤13	PASS
		38000	2595	27.70	18.53	9.17	≤13	PASS
		38150	2610	26.86	17.01	9.85	≤13	PASS
16QAM	5	37775	2572.5	27.46	16.89	10.57	≤13	PASS
		38000	2595	27.02	16.99	10.03	≤13	PASS
		38225	2617.5	26.54	16.12	10.42	≤13	PASS
	10	37800	2575	27.93	18.53	9.40	≤13	PASS
		38000	2595	27.25	17.78	9.47	≤13	PASS
		38200	2615	26.88	17.75	9.13	≤13	PASS
	15	37825	2577.5	28.07	18.90	9.17	≤13	PASS
		38000	2595	27.14	15.17	11.97	≤13	PASS
		38175	2612.5	26.86	16.30	10.56	≤13	PASS
	20	37850	2580	27.73	16.29	11.44	≤13	PASS
		38000	2595	27.13	17.22	9.91	≤13	PASS
		38150	2610	26.70	17.34	9.36	≤13	PASS
64QAM	5	37775	2572.5	27.48	18.15	9.33	≤13	PASS

		38000	2595	26.99	17.87	9.12	≤13	PASS
		38225	2617.5	26.45	17.23	9.22	≤13	PASS
	10	37800	2575	27.79	18.36	9.43	≤13	PASS
		38000	2595	26.96	16.59	10.37	≤13	PASS
		38200	2615	26.55	17.23	9.32	≤13	PASS
	15	37825	2577.5	27.83	18.32	9.51	≤13	PASS
		38000	2595	27.24	18.03	9.21	≤13	PASS
		38175	2612.5	26.71	17.45	9.26	≤13	PASS
	20	37850	2580	27.57	18.14	9.43	≤13	PASS
		38000	2595	27.01	18.14	8.87	≤13	PASS
		38150	2610	26.58	17.91	8.67	≤13	PASS

LTE Band 41								
Modulation	**Bandwidth ((MHz))**	**Channel**	**Frequency (MHz)**	**Peak (dBm)**	**Avg (dBm)**	**PAPR (dB)**	**Limit (dB)**	**Conclusion**
QPSK	5	39675	2498.5	28.62	19.29	9.33	≤13	PASS
		40620	2593	28.05	20.06	7.99	≤13	PASS
		41565	2687.5	28.27	19.04	9.23	≤13	PASS
	10	39700	2501	28.76	20.82	7.94	≤13	PASS
		40620	2593	28.28	19.23	9.05	≤13	PASS
		41540	2685	28.56	20.55	8.01	≤13	PASS
	15	39725	2503.5	28.99	19.57	9.42	≤13	PASS
		40620	2593	28.68	19.44	9.24	≤13	PASS
		41515	2682.5	28.64	17.86	10.78	≤13	PASS
	20	39750	2506	28.66	19.51	9.15	≤13	PASS
		40620	2593	28.02	17.45	10.57	≤13	PASS
		41490	2680	28.58	19.57	9.01	≤13	PASS
16QAM	5	39675	2498.5	28.32	18.80	9.52	≤13	PASS
		40620	2593	27.60	17.30	10.30	≤13	PASS
		41565	2687.5	27.71	18.11	9.60	≤13	PASS
	10	39700	2501	28.50	18.94	9.56	≤13	PASS
		40620	2593	27.77	18.40	9.37	≤13	PASS
		41540	2685	28.39	19.07	9.32	≤13	PASS
	15	39725	2503.5	28.52	17.50	11.02	≤13	PASS

		40620	2593	27.99	18.40	9.59	≤13	PASS
		41515	2682.5	28.49	19.40	9.09	≤13	PASS
	20	39750	2506	28.57	19.39	9.18	≤13	PASS
		40620	2593	27.68	17.66	10.02	≤13	PASS
		41490	2680	28.35	19.28	9.07	≤13	PASS
64QAM	5	39675	2498.5	27.70	18.31	9.39	≤13	PASS
		40620	2593	27.08	18.28	8.80	≤13	PASS
		41565	2687.5	27.16	17.92	9.24	≤13	PASS
	10	39700	2501	28.05	20.26	7.79	≤13	PASS
		40620	2593	27.39	17.31	10.08	≤13	PASS
		41540	2685	27.90	18.63	9.27	≤13	PASS
	15	39725	2503.5	28.15	18.61	9.54	≤13	PASS
		40620	2593	27.65	18.38	9.27	≤13	PASS
		41515	2682.5	28.11	18.73	9.38	≤13	PASS
	20	39750	2506	28.09	19.23	8.86	≤13	PASS
		40620	2593	27.48	18.36	9.12	≤13	PASS
		41490	2680	27.98	18.52	9.46	≤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 -30°C to +50°C in 10°C step size.

(1)With all power removed, the temperature was decreased to -10°C and permitted to stabilize for three hours.

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

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

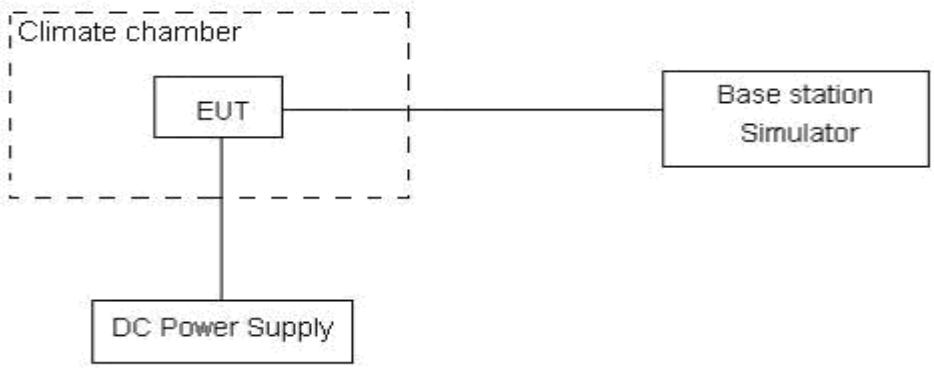
Frequency Stability (Voltage Variation)

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

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

This transceiver is specified to operate with an input voltage of between 10.2 V and 13.8 V, with a nominal voltage of 12V.

Test setup



Limits

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

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 7								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	5MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	13.66	5.83	10.23	0.00727	0.00310	0.00544	PASS
Extreme（50℃）		3.61	3.26	7.80	0.00192	0.00173	0.00415	PASS
Extreme（40℃）		16.00	8.96	10.01	0.00851	0.00477	0.00532	PASS
Extreme（30℃）		1.39	15.46	9.53	0.00074	0.00822	0.00507	PASS
Extreme（20℃）		3.82	9.44	8.43	0.00203	0.00502	0.00449	PASS
Extreme（10℃）		14.36	6.87	10.86	0.00764	0.00365	0.00577	PASS
Extreme（0℃）		14.94	13.51	13.20	0.00795	0.00718	0.00702	PASS
Extrem（-10℃）		17.72	3.16	16.51	0.00943	0.00168	0.00878	PASS
Extrem（-20℃）		4.06	3.46	12.02	0.00216	0.00184	0.00640	PASS
Extrem（-30℃）		10.23	14.74	13.68	0.00544	0.00784	0.00728	PASS
25℃	LV	14.48	5.07	1.48	0.00770	0.00270	0.00078	PASS
	HV	6.84	5.61	13.27	0.00364	0.00298	0.00706	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability （ppm）	Frequency Stability （ppm）	Frequency Stability （ppm）	Verdict
BANDWIDTH	10MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	13.12	2.64	5.39	0.00698	0.00141	0.00287	PASS
Extreme（50℃）		1.19	16.52	14.82	0.00063	0.00878	0.00789	PASS
Extreme（40℃）		7.09	16.09	1.50	0.00377	0.00856	0.00080	PASS
Extreme（30℃）		4.00	12.58	7.31	0.00213	0.00669	0.00389	PASS
Extreme（20℃）		10.25	15.77	7.60	0.00545	0.00839	0.00404	PASS
Extreme（10℃）		6.78	6.52	10.21	0.00361	0.00347	0.00543	PASS
Extreme（0℃）		8.06	6.52	13.50	0.00429	0.00347	0.00718	PASS
Extrem（-10℃）		2.95	11.80	14.33	0.00157	0.00628	0.00762	PASS
Extrem（-20℃）		10.81	15.91	1.85	0.00575	0.00846	0.00099	PASS
Extrem（-30℃）		7.94	6.60	2.69	0.00423	0.00351	0.00143	PASS
25℃	LV	17.81	14.61	6.67	0.00947	0.00777	0.00355	PASS
	HV	14.02	13.24	17.46	0.00746	0.00704	0.00929	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	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	16.47	12.24	7.42	0.00876	0.00651	0.00394	PASS

Extreme（50℃）		15.14	17.11	12.80	0.00806	0.00910	0.00681	PASS
Extreme（40℃）		12.38	10.07	10.32	0.00658	0.00536	0.00549	PASS
Extreme（30℃）		2.77	6.09	3.47	0.00147	0.00324	0.00184	PASS
Extreme（20℃）		3.10	16.13	6.29	0.00165	0.00858	0.00335	PASS
Extreme（10℃）		2.41	16.01	11.22	0.00128	0.00852	0.00597	PASS
Extreme（0℃）		9.42	15.76	14.53	0.00501	0.00838	0.00773	PASS
Extrem（-10℃）		10.53	2.05	5.42	0.00560	0.00109	0.00288	PASS
Extrem（-20℃）		14.61	11.15	10.78	0.00777	0.00593	0.00574	PASS
Extrem（-30℃）		17.46	13.76	11.50	0.00929	0.00732	0.00612	PASS
25℃	LV	3.72	13.26	6.47	0.00198	0.00706	0.00344	PASS
	HV	11.00	10.40	7.75	0.00585	0.00553	0.00412	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	20MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	16.71	16.45	13.50	0.00889	0.00875	0.00718	PASS
Extreme（50℃）		17.11	9.02	13.14	0.00910	0.00480	0.00699	PASS
Extreme（40℃）		3.29	6.89	3.21	0.00175	0.00367	0.00171	PASS
Extreme（30℃）		2.93	13.59	4.88	0.00156	0.00723	0.00260	PASS
Extreme（20℃）		15.26	16.93	11.98	0.00812	0.00901	0.00637	PASS
Extreme（10℃）		5.69	3.08	2.61	0.00303	0.00164	0.00139	PASS
Extreme（0℃）		11.94	15.39	12.65	0.00635	0.00818	0.00673	PASS
Extrem（-10℃）		16.06	8.12	17.01	0.00854	0.00432	0.00905	PASS
Extrem（-20℃）		11.90	7.75	15.79	0.00633	0.00412	0.00840	PASS
Extrem（-30℃）		11.27	3.45	14.20	0.00600	0.00184	0.00755	PASS
25℃	LV	16.12	4.61	2.08	0.00857	0.00245	0.00111	PASS
	HV	3.90	17.52	16.59	0.00207	0.00932	0.00883	PASS

LTE Band 38								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	12.81	2.84	11.71	0.00681	0.00151	0.00623	PASS
Extreme（50℃）		16.49	3.20	3.31	0.00877	0.00170	0.00176	PASS
Extreme（40℃）		10.01	7.29	8.94	0.00533	0.00388	0.00476	PASS
Extreme（30℃）		12.28	15.28	2.04	0.00653	0.00813	0.00109	PASS
Extreme（20℃）		2.38	1.16	7.06	0.00127	0.00062	0.00376	PASS
Extreme（10℃）		6.63	3.18	15.40	0.00353	0.00169	0.00819	PASS
Extreme（0℃）		9.65	12.09	11.42	0.00513	0.00643	0.00608	PASS
Extrem（-10℃）		15.41	15.20	12.01	0.00820	0.00809	0.00639	PASS
Extrem（-20℃）		11.50	12.99	6.40	0.00612	0.00691	0.00340	PASS
Extrem（-30℃）		11.58	2.04	14.96	0.00616	0.00109	0.00796	PASS
25℃	LV	2.96	7.04	7.96	0.00157	0.00374	0.00424	PASS
	HV	12.89	13.26	2.08	0.00686	0.00705	0.00111	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	7.46	4.63	11.62	0.00397	0.00246	0.00618	PASS
Extreme（50℃）		17.56	17.28	14.26	0.00934	0.00919	0.00759	PASS
Extreme（40℃）		3.27	6.99	15.11	0.00174	0.00372	0.00804	PASS
Extreme（30℃）		4.86	10.14	2.25	0.00259	0.00539	0.00120	PASS
Extreme（20℃）		5.83	12.88	3.35	0.00310	0.00685	0.00178	PASS
Extreme（10℃）		2.15	17.22	6.63	0.00114	0.00916	0.00353	PASS
Extreme（0℃）		14.22	17.54	5.25	0.00757	0.00933	0.00279	PASS
Extrem（-10℃）		5.99	4.88	15.09	0.00318	0.00260	0.00803	PASS
Extrem（-20℃）		15.23	5.71	2.33	0.00810	0.00304	0.00124	PASS
Extrem（-30℃）		12.53	4.39	8.20	0.00666	0.00233	0.00436	PASS
25℃	LV	7.40	11.62	9.04	0.00393	0.00618	0.00481	PASS
	HV	9.04	11.97	14.16	0.00481	0.00636	0.00753	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	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	14.15	6.36	17.20	0.00753	0.00338	0.00915	PASS
Extreme（50℃）		16.52	16.61	17.54	0.00879	0.00883	0.00933	PASS
Extreme（40℃）		1.77	3.78	4.03	0.00094	0.00201	0.00214	PASS

Extreme（30℃）		12.44	9.45	4.92	0.00662	0.00502	0.00262	PASS
Extreme（20℃）		4.45	10.97	1.52	0.00237	0.00583	0.00081	PASS
Extreme（10℃）		12.40	2.84	7.89	0.00660	0.00151	0.00420	PASS
Extreme（0℃）		14.13	17.89	4.36	0.00751	0.00952	0.00232	PASS
Extrem（-10℃）		11.96	11.38	17.28	0.00636	0.00605	0.00919	PASS
Extrem（-20℃）		16.37	3.35	13.19	0.00871	0.00178	0.00702	PASS
Extrem（-30℃）		16.83	8.24	5.61	0.00895	0.00438	0.00299	PASS
25℃	LV	11.93	11.94	2.43	0.00635	0.00635	0.00129	PASS
	HV	10.49	9.03	16.45	0.00558	0.00480	0.00875	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	20MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	12.04	15.95	17.18	0.00641	0.00849	0.00914	PASS
Extreme（50℃）		17.54	2.39	13.55	0.00933	0.00127	0.00721	PASS
Extreme（40℃）		16.17	11.56	1.13	0.00860	0.00615	0.00060	PASS
Extreme（30℃）		12.35	2.42	7.36	0.00657	0.00129	0.00392	PASS
Extreme（20℃）		4.42	4.87	13.11	0.00235	0.00259	0.00698	PASS
Extreme（10℃）		16.08	7.72	5.38	0.00856	0.00411	0.00286	PASS
Extreme（0℃）		7.63	14.96	10.75	0.00406	0.00796	0.00572	PASS
Extrem（-10℃）		16.27	6.54	10.96	0.00866	0.00348	0.00583	PASS
Extrem（-20℃）		10.20	10.81	6.46	0.00543	0.00575	0.00344	PASS
Extrem（-30℃）		8.66	8.26	14.51	0.00461	0.00439	0.00772	PASS
25℃	LV	12.94	9.69	11.54	0.00688	0.00516	0.00614	PASS
	HV	16.73	5.45	1.19	0.00890	0.00290	0.00063	PASS

LTE Band 41								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	17.06	7.89	11.14	0.00907	0.00420	0.00593	PASS
Extreme（50℃）		5.04	12.52	9.66	0.00268	0.00666	0.00514	PASS
Extreme（40℃）		1.04	10.81	8.76	0.00055	0.00575	0.00466	PASS
Extreme（30℃）		1.47	6.47	9.41	0.00078	0.00344	0.00501	PASS
Extreme（20℃）		6.31	13.21	6.90	0.00336	0.00703	0.00367	PASS
Extreme（10℃）		11.74	2.86	1.76	0.00625	0.00152	0.00093	PASS
Extreme（0℃）		7.06	2.91	1.35	0.00375	0.00155	0.00072	PASS
Extrem（-10℃）		11.08	15.01	17.14	0.00589	0.00798	0.00912	PASS
Extrem（-20℃）		8.39	16.17	3.91	0.00446	0.00860	0.00208	PASS
Extrem（-30℃）		13.99	17.81	5.63	0.00744	0.00947	0.00300	PASS
25℃	LV	5.32	1.60	16.94	0.00283	0.00085	0.00901	PASS
	HV	6.33	3.85	13.93	0.00337	0.00205	0.00741	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	17.32	17.08	5.10	0.00921	0.00909	0.00271	PASS
Extreme（50℃）		7.04	5.36	5.96	0.00374	0.00285	0.00317	PASS
Extreme（40℃）		17.07	12.25	6.78	0.00908	0.00652	0.00360	PASS
Extreme（30℃）		8.15	7.59	8.54	0.00434	0.00404	0.00454	PASS
Extreme（20℃）		6.47	13.48	13.61	0.00344	0.00717	0.00724	PASS
Extreme（10℃）		10.26	9.78	13.13	0.00546	0.00520	0.00698	PASS
Extreme（0℃）		8.06	16.91	12.00	0.00429	0.00899	0.00638	PASS
Extrem（-10℃）		11.20	9.50	7.57	0.00596	0.00505	0.00403	PASS
Extrem（-20℃）		8.52	10.64	3.38	0.00453	0.00566	0.00180	PASS
Extrem（-30℃）		5.75	12.16	5.03	0.00306	0.00647	0.00268	PASS
25℃	LV	11.96	10.97	4.28	0.00636	0.00583	0.00228	PASS
	HV	10.18	5.55	14.04	0.00541	0.00295	0.00747	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	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	16.20	2.93	13.87	0.00862	0.00156	0.00738	PASS
Extreme（50℃）		10.15	17.32	16.97	0.00540	0.00921	0.00902	PASS
Extreme（40℃）		4.45	13.64	17.55	0.00237	0.00726	0.00933	PASS

Extreme（30℃）		16.97	1.21	11.05	0.00902	0.00064	0.00588	PASS
Extreme（20℃）		4.73	11.39	15.99	0.00252	0.00606	0.00850	PASS
Extreme（10℃）		16.65	2.91	1.80	0.00886	0.00155	0.00096	PASS
Extreme（0℃）		9.75	9.46	7.73	0.00518	0.00503	0.00411	PASS
Extrem（-10℃）		10.16	6.43	11.16	0.00541	0.00342	0.00593	PASS
Extrem（-20℃）		16.59	2.14	16.07	0.00882	0.00114	0.00855	PASS
Extrem（-30℃）		3.08	12.88	1.19	0.00164	0.00685	0.00063	PASS
25℃	LV	12.36	16.98	2.78	0.00657	0.00903	0.00148	PASS
	HV	17.07	10.76	16.08	0.00908	0.00572	0.00855	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability（ppm）	Frequency Stability（ppm）	Frequency Stability（ppm）	Verdict
BANDWIDTH	20MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal（25℃）	Normal	13.34	7.27	4.58	0.00709	0.00387	0.00244	PASS
Extreme（50℃）		3.32	7.00	16.86	0.00177	0.00372	0.00897	PASS
Extreme（40℃）		4.91	3.49	9.18	0.00261	0.00185	0.00488	PASS
Extreme（30℃）		16.21	4.21	10.39	0.00862	0.00224	0.00553	PASS
Extreme（20℃）		8.67	2.23	2.83	0.00461	0.00119	0.00150	PASS
Extreme（10℃）		6.48	8.69	16.11	0.00345	0.00462	0.00857	PASS
Extreme（0℃）		15.40	3.91	4.26	0.00819	0.00208	0.00227	PASS
Extrem（-10℃）		7.96	3.99	1.38	0.00423	0.00212	0.00073	PASS
Extrem（-20℃）		4.08	17.31	11.20	0.00217	0.00921	0.00596	PASS
Extrem（-30℃）		14.80	7.37	9.43	0.00787	0.00392	0.00501	PASS
25℃	LV	4.19	3.49	13.75	0.00223	0.00185	0.00732	PASS
	HV	15.70	5.69	11.95	0.00835	0.00302	0.00636	PASS

5.6 Spurious Emissions at Antenna Terminals

Ambient condition

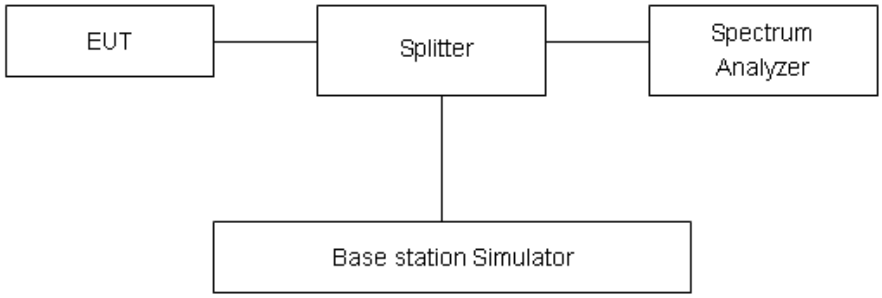
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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 is set to 1 kHz (0.009MHz~ 0.15 MHz),
RBW is set to 10 kHz (0.15 MHz~ 30 MHz)
RBW is set to 100 kHz (30MHz~1000 MHz)
RBW is set to 1000 kHz (above 1000MHz)

Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup



Limits

Rule Part 27.53(m) 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section.

Part 27.53(m) Limit	-25 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.

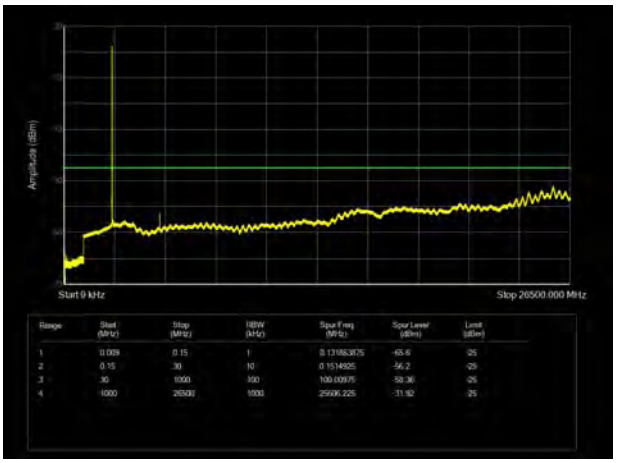
Frequency	Uncertainty
9kHz-1GHz	0.684 dB
1GHz-27GHz	1.407 dB

Test Result

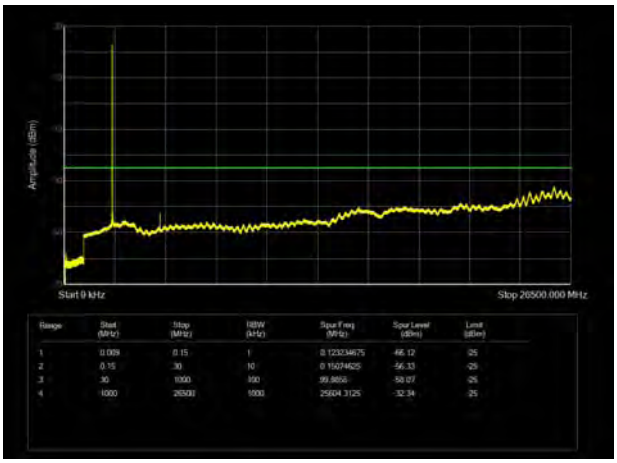
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported.

The signal beyond the limit is carrier.

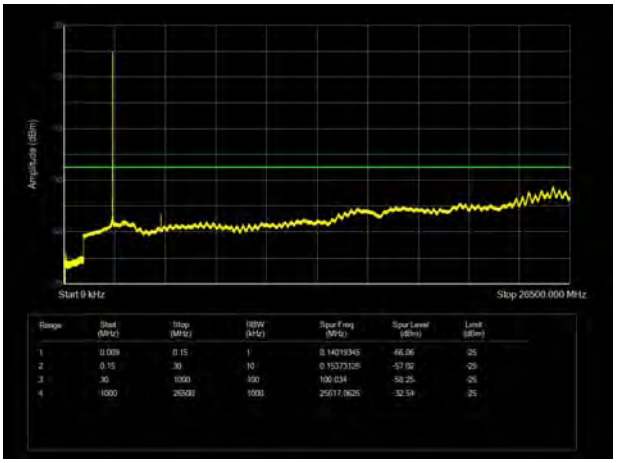
LTE Band 7 5MHz CH-Low 9kHz~26.5GHz



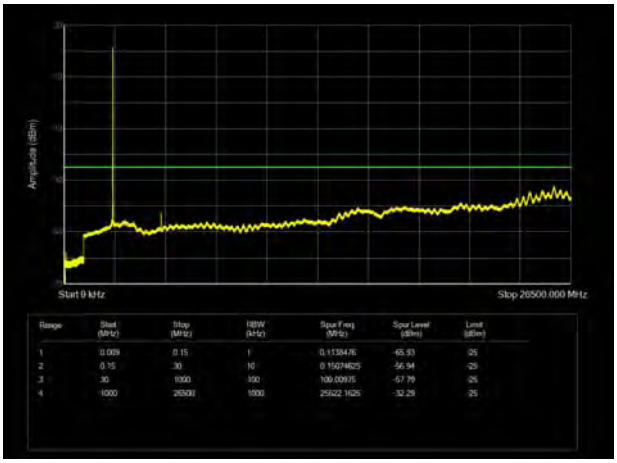
LTE Band 7 10MHz CH- Low 9kHz~26.5GHz



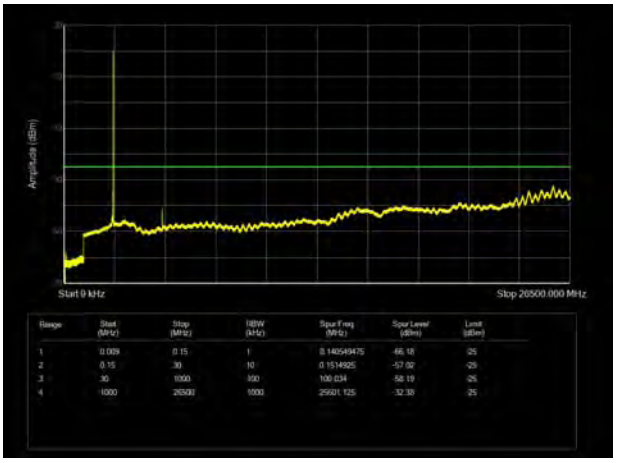
LTE Band 7 5MHz CH- Middle 9kHz~26.5GHz



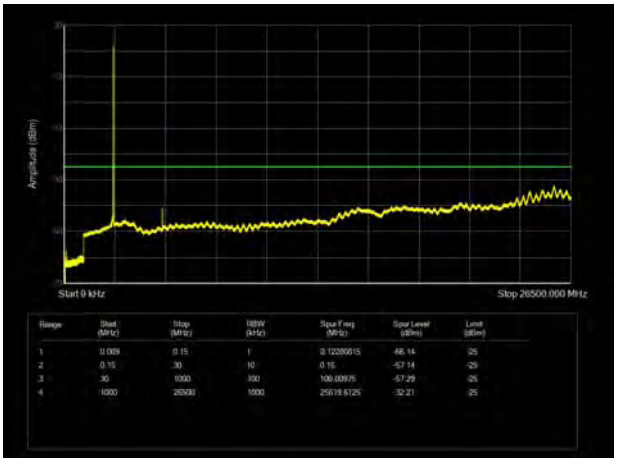
LTE Band 7 10MHz CH- Middle 9kHz~26.5GHz



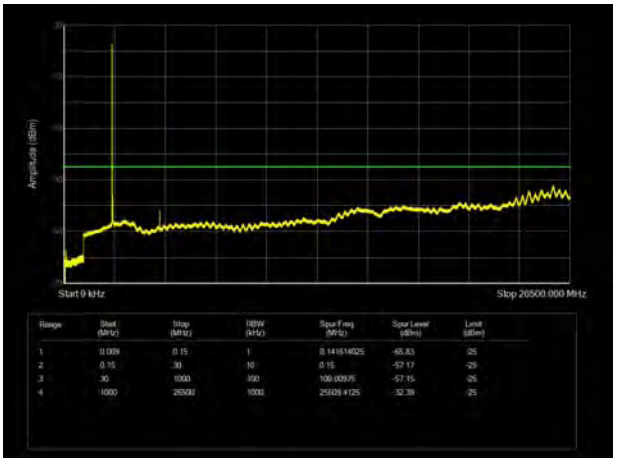
LTE Band 7 5MHz CH- High 9kHz~26.5GHz



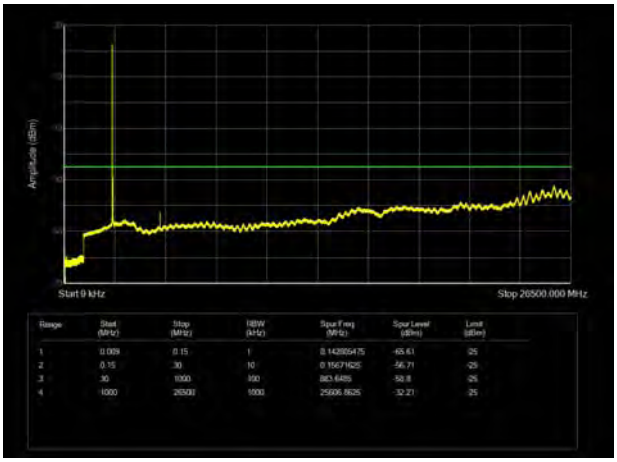
LTE Band 710MHz CH-High 9kHz~26.5GHz



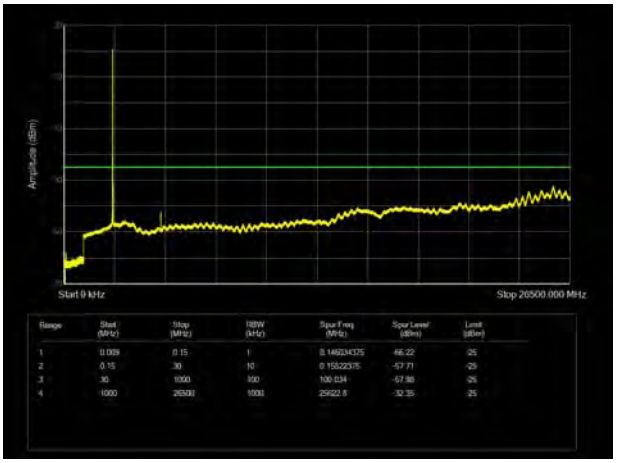
LTE Band 7 15MHz CH- Low 9kHz~26.5GHz



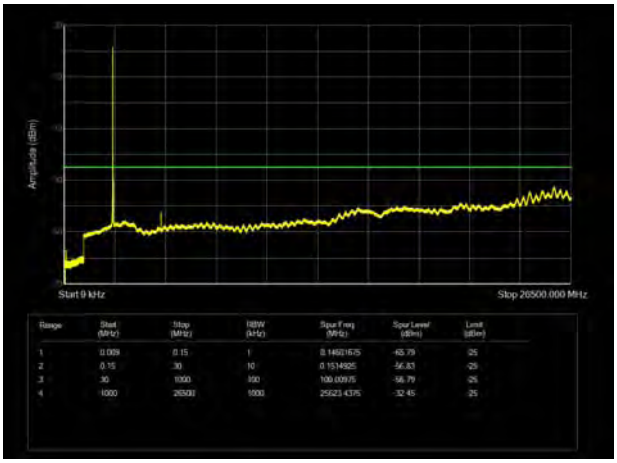
LTE Band 7 20MHz CH-Low 9kHz~26.5Hz



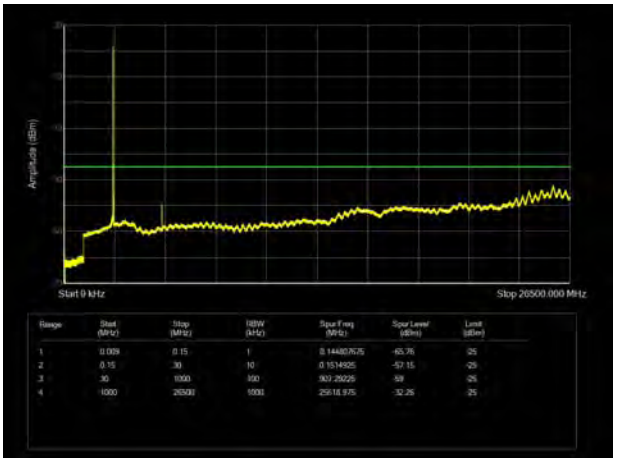
LTE Band 7 15MHz CH- Middle 9kHz~26.5GHz



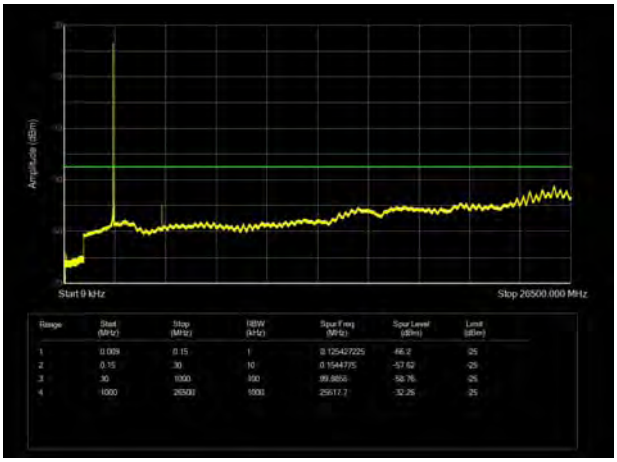
LTE Band 7 20MHz CH- Middle 9kHz~26.5GHz



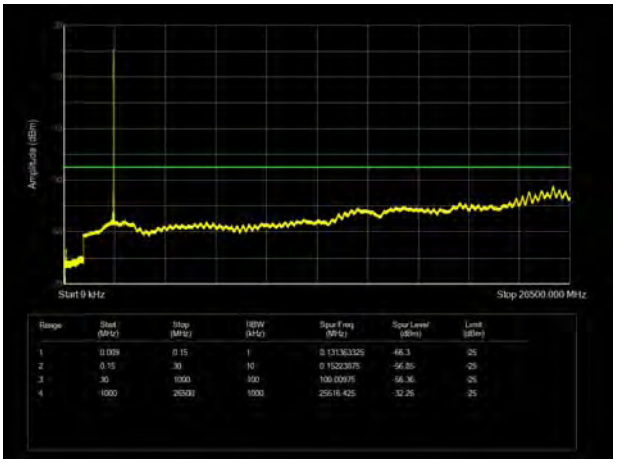
LTE Band 7 15MHz CH-High 9kHz~26.5GHz



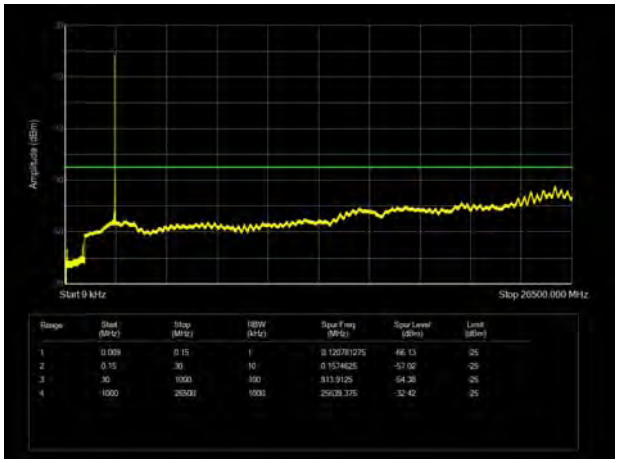
LTE Band 7 20MHz CH- High 9kHz~26.5GHz



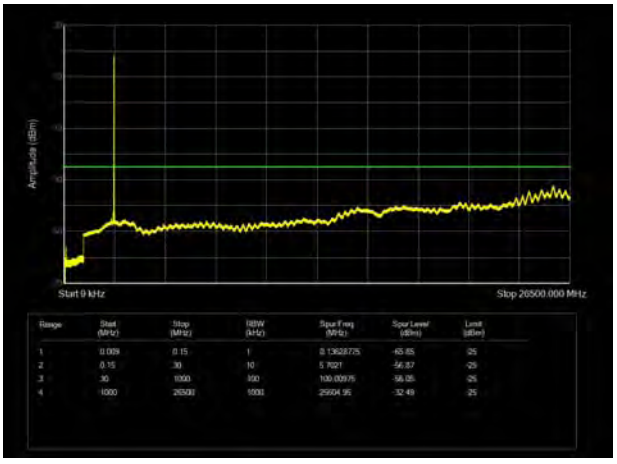
LTE Band 38 5MHz CH-Low 9kHz~26.5GHz



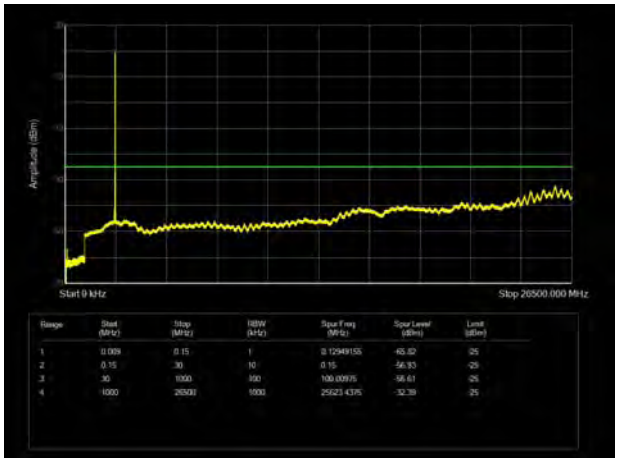
LTE Band 38 10MHz CH- Low 9kHz~26.5GHz



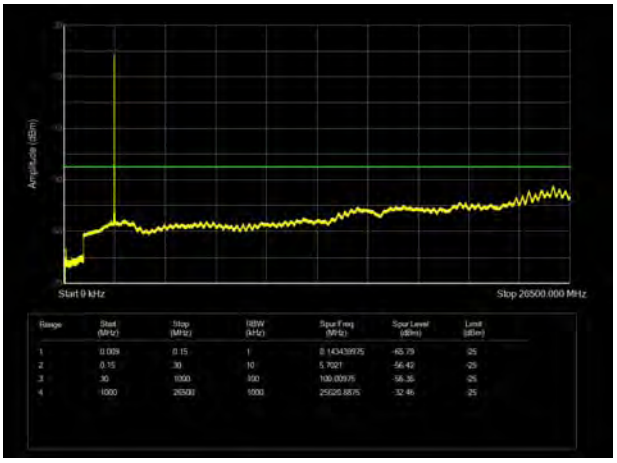
LTE Band 38 5MHz CH- Middle 9kHz~26.5GHz



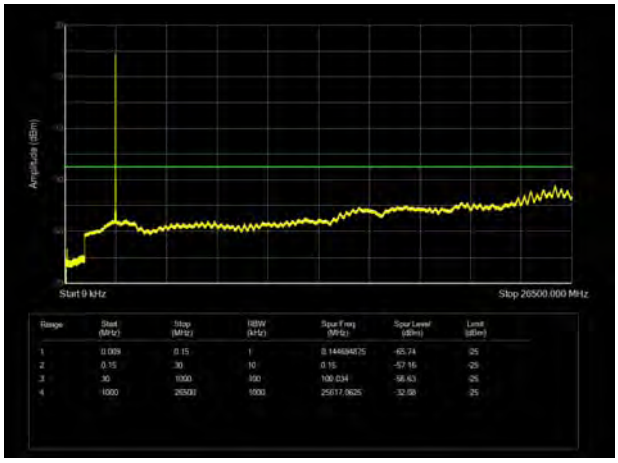
LTE Band 38 10MHz CH- Middle 9kHz~26.5GHz



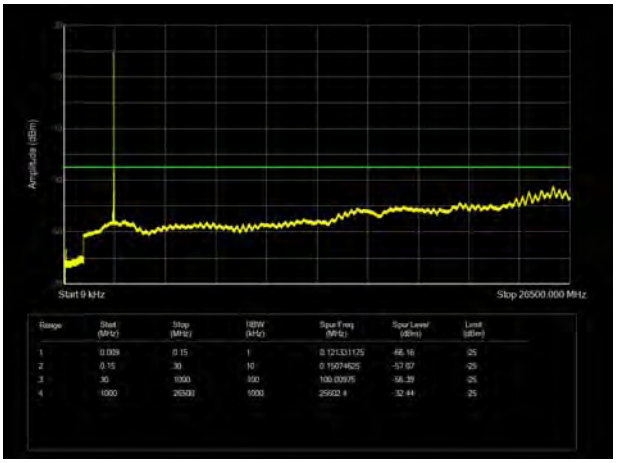
LTE Band 38 5MHz CH- High 9kHz~26.5GHz



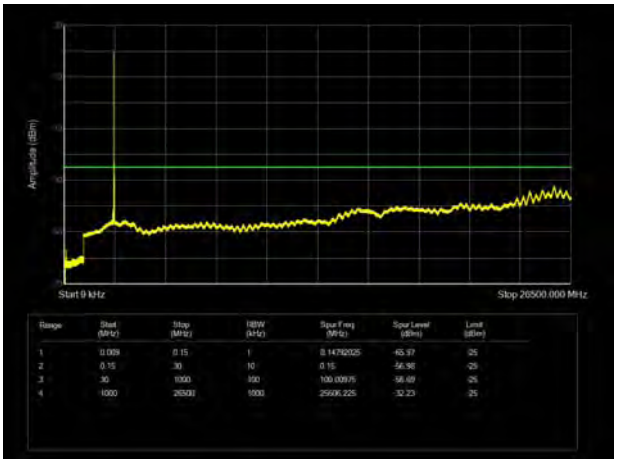
LTE Band 38 10MHz CH-High 9kHz~26.5GHz



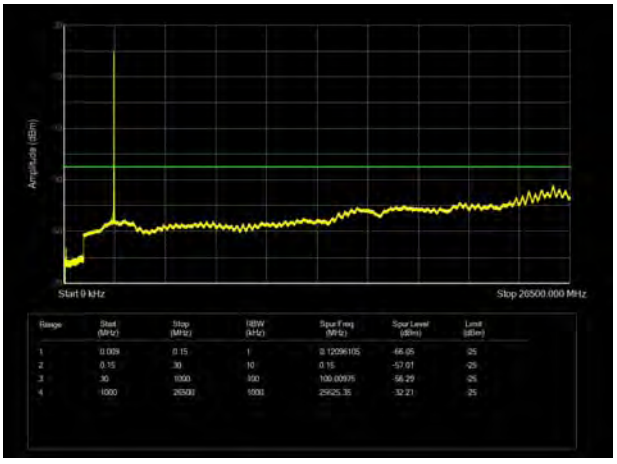
LTE Band 38 15MHz CH- Low 9kHz~26.5GHz



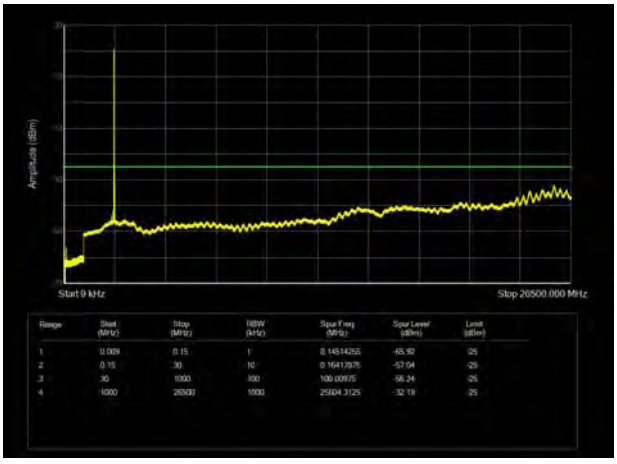
LTE Band 38 20MHz CH-Low 9kHz~26.5GHz



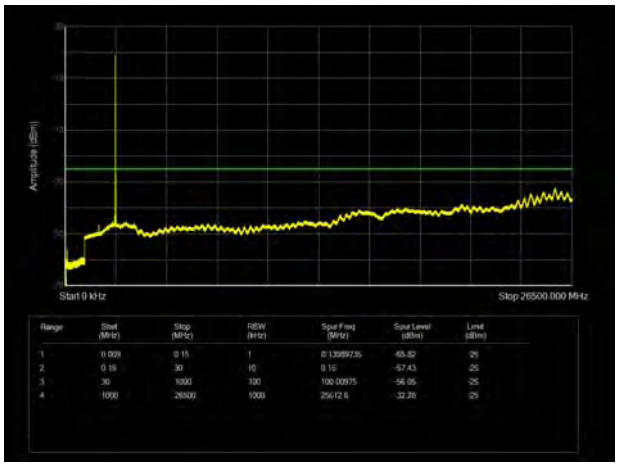
LTE Band 38 15MHz CH- Middle 9kHz~26.5GHz



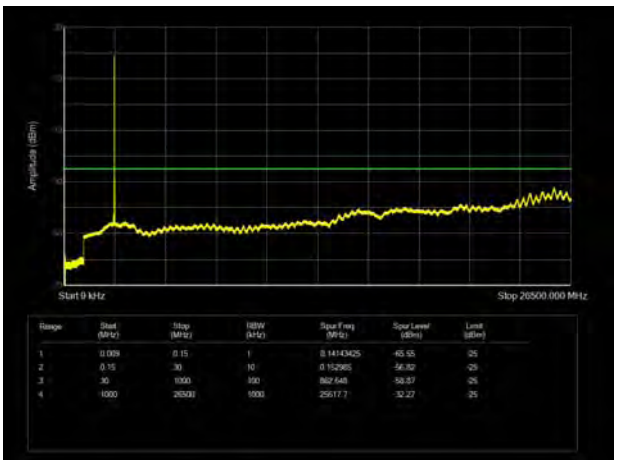
LTE Band 38 20MHz CH- Middle 9kHz~26.5GHz



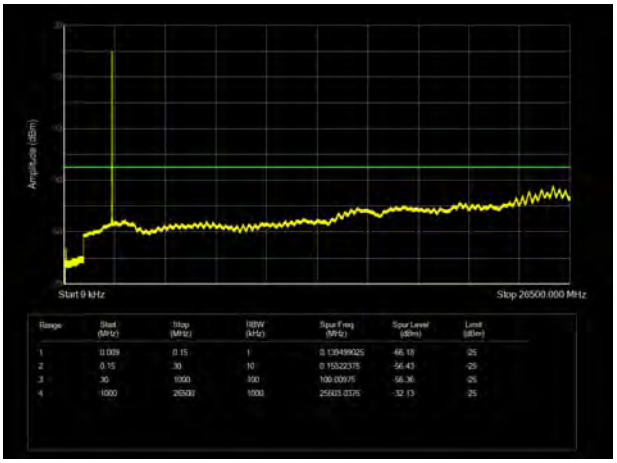
LTE Band 3815MHz CH-High 9kHz~26.5GHz



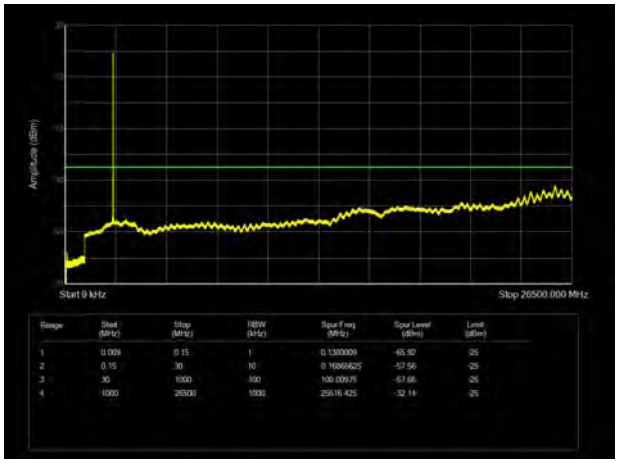
LTE Band 38 20MHz CH- High 9kHz~26.5GHz



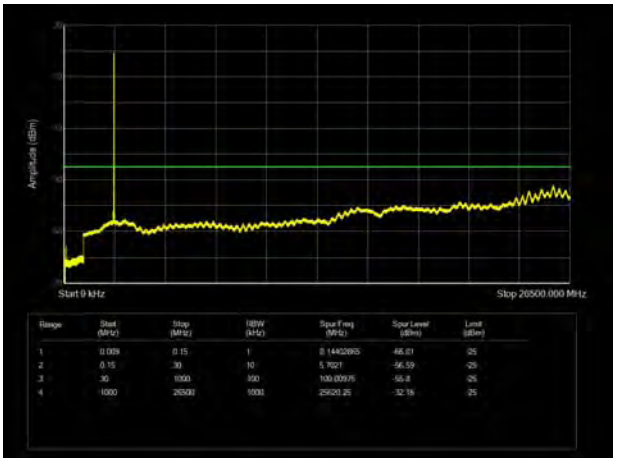
LTE Band 41 5MHz CH-Low 9kHz~26.5GHz



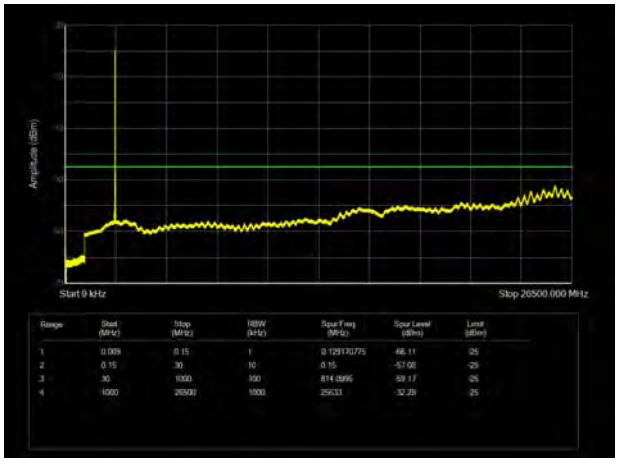
LTE Band 41 10MHz CH- Low 9kHz~26.5GHz



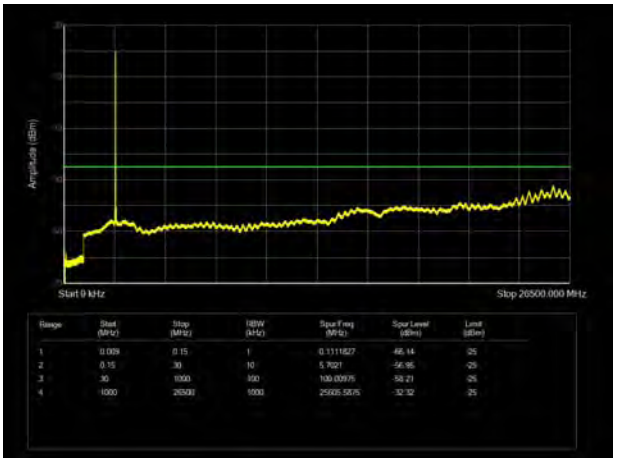
LTE Band 41 5MHz CH- Middle 9kHz~26.5GHz



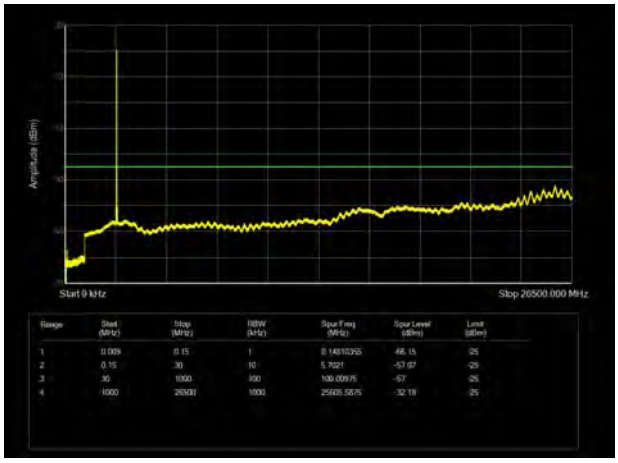
LTE Band 41 10MHz CH- Middle 9kHz~26.5GHz



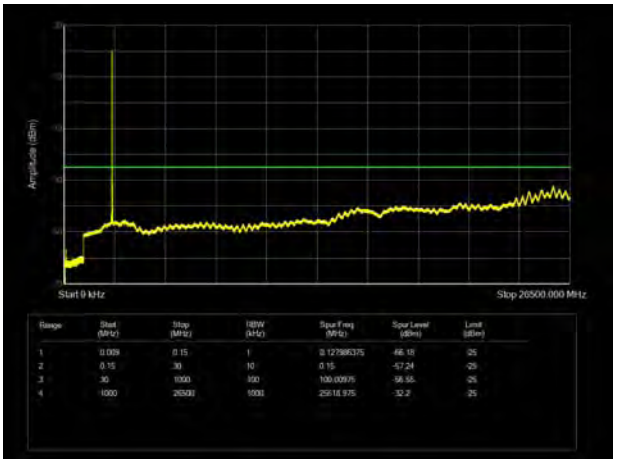
LTE Band 41 5MHz CH- High 9kHz~26.5GHz



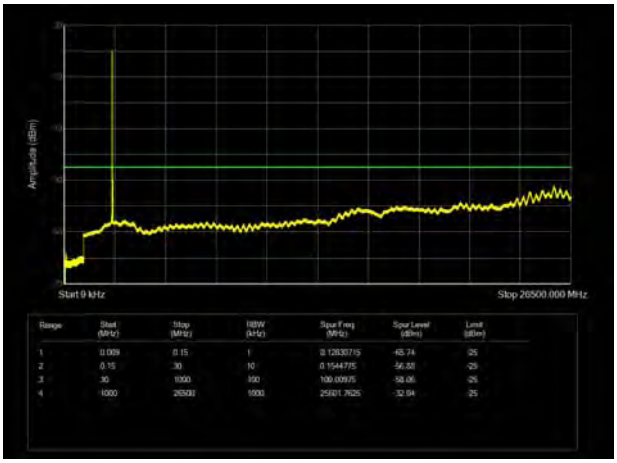
LTE Band 41 10MHz CH-High 9kHz~26.5GHz



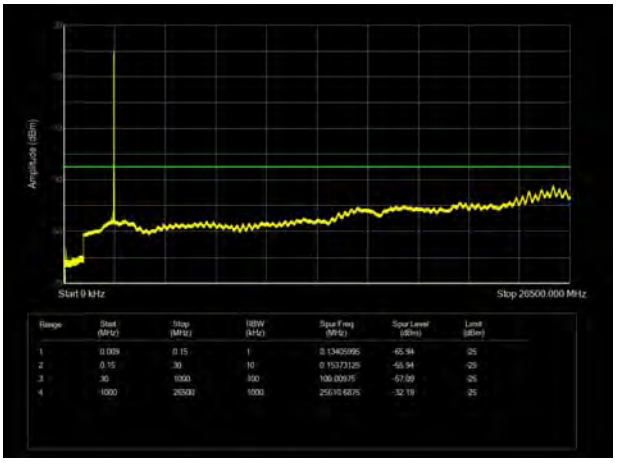
LTE Band 41 15MHz CH- Low 9kHz~26.5GHz



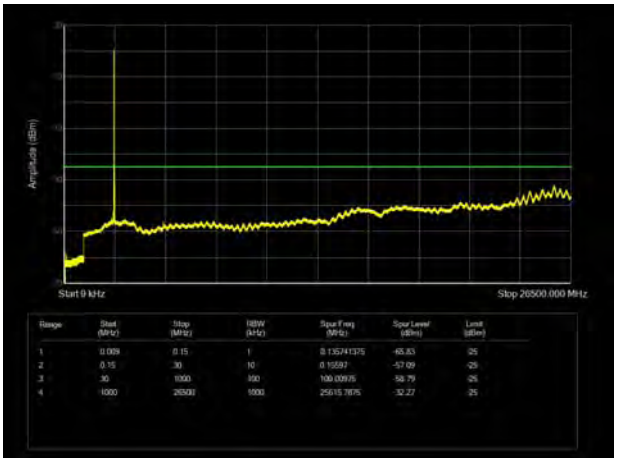
LTE Band 41 20MHz CH-Low 9kHz~26.5GHz



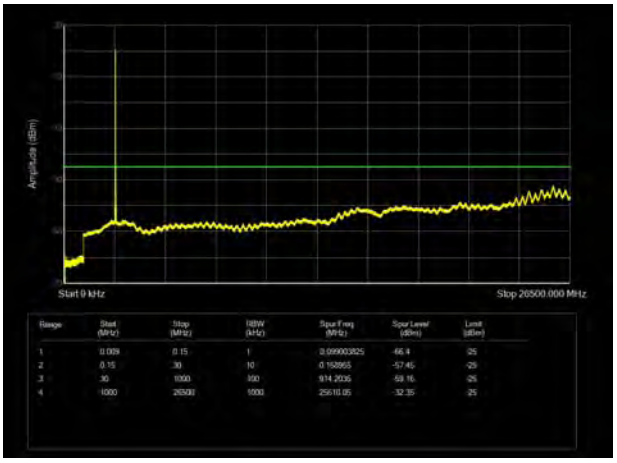
LTE Band 41 15MHz CH- Middle 9kHz~26.5GHz



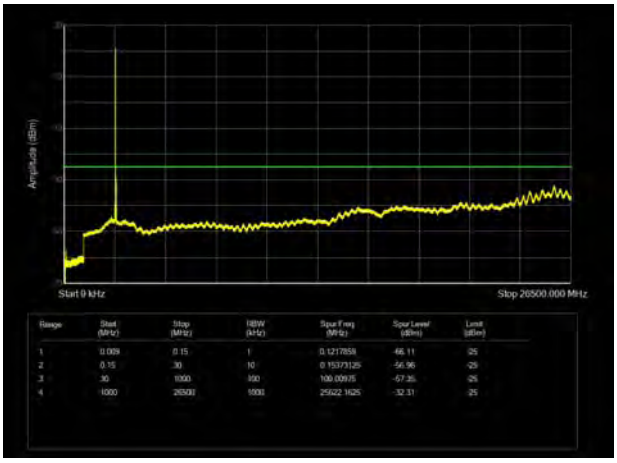
LTE Band 41 20MHz CH- Middle 9kHz~26.5GHz



LTE Band 41 15MHz CH-High 9kHz~26.5GHz



LTE Band 41 20MHz CH- High 9kHz~26.5Hz



5.7 Radiates Spurious Emission

Ambient condition

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

Method of Measurement

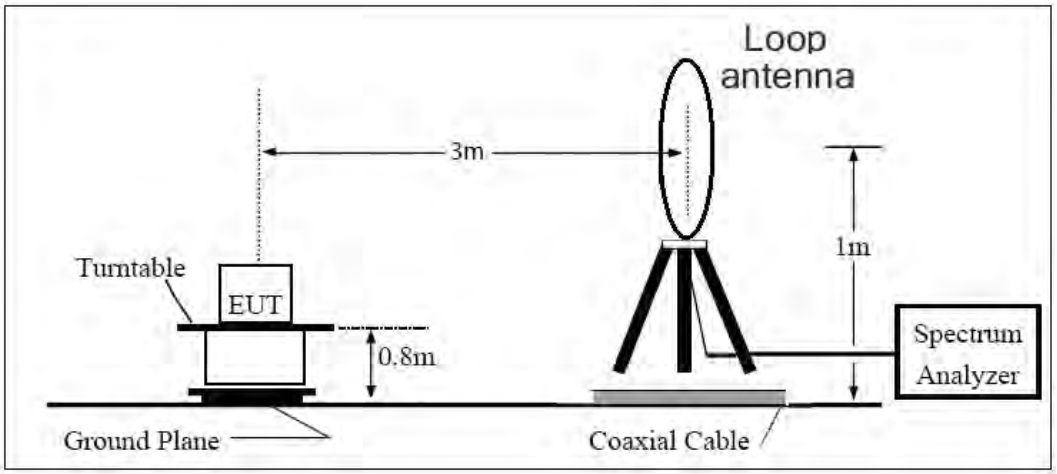
1. The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI C63.26 (2015).
2. Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable 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 9kHz-150kHz , 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.

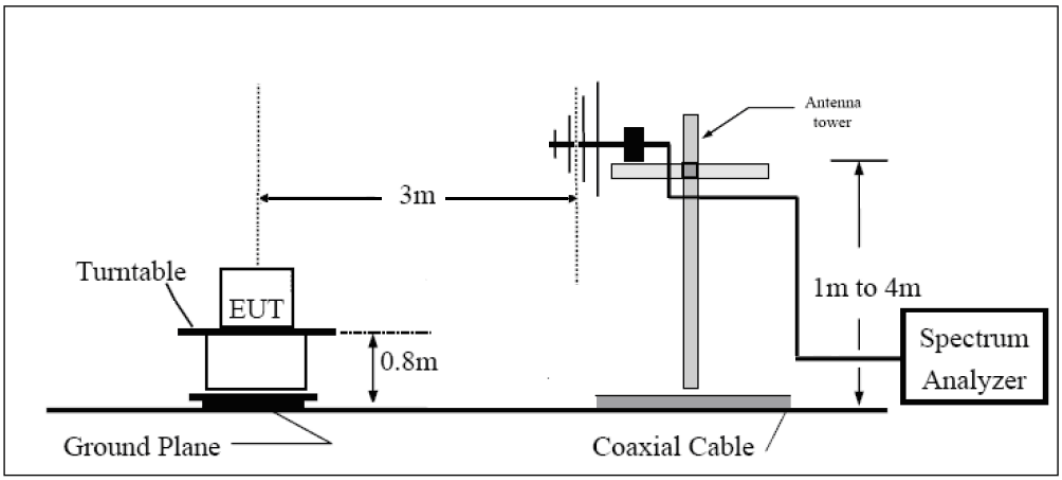
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

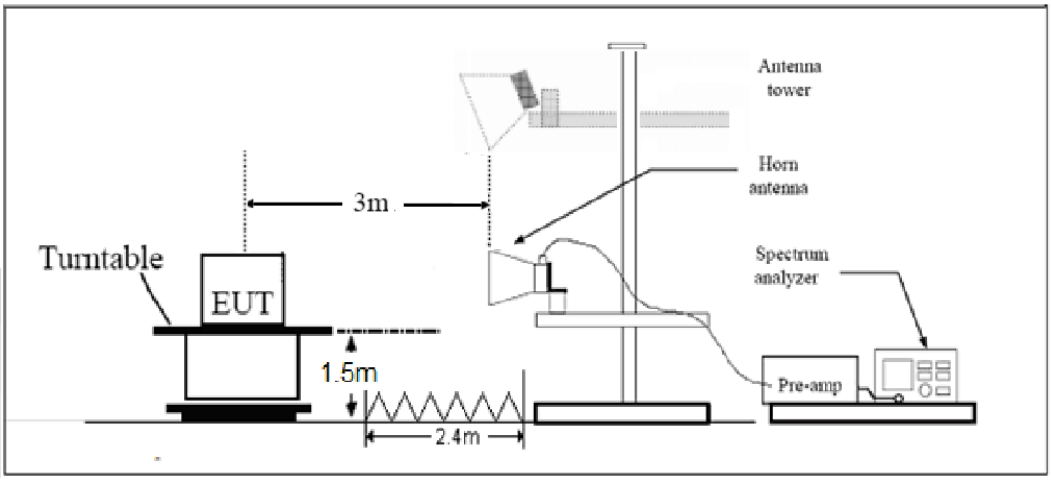
9KHz ~ 30MHz



30MHz ~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits

Rule Part 27.53(m) 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section.

Part 27.53(m) Limit	-25 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 7 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5070.00	-43.14	2.00	9.15	Horizontal	-35.99	-25.0	10.99	315
3	7605.00	-41.88	2.50	11.35	Horizontal	-33.03	-25.0	8.03	135
4	10140.00	-47.55	4.20	12.05	Horizontal	-39.70	-25.0	14.70	180
5	12675.00	-44.62	5.20	12.85	Horizontal	-36.97	-25.0	11.97	225
6	15210.00	-53.29	5.50	14.23	Horizontal	-44.56	-25.0	19.56	45
7	17745.00	-51.12	5.70	14.15	Horizontal	-42.67	-25.0	17.67	0
8	20280.00	--	--	--	--	--	--	--	--
9	22815.00	--	--	--	--	--	--	--	--
10	25350.00	--	--	--	--	--	--	--	--
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 7 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5070.00	-45.27	2.00	10.15	Horizontal	-37.12	-25.0	12.12	0
3	7605.00	-55.76	2.50	11.35	Horizontal	-46.91	-25.0	21.91	135
4	10140.00	-50.51	4.20	12.05	Horizontal	-42.66	-25.0	17.66	90
5	12675.00	-51.30	5.20	14.85	Horizontal	-41.65	-25.0	16.65	225
6	15210.00	-54.96	5.50	13.23	Horizontal	-47.23	-25.0	22.23	180
7	17745.00	-47.83	5.70	12.15	Horizontal	-41.38	-25.0	16.38	45
8	20280.00	--	--	--	--	--	--	--	--
9	22815.00	--	--	--	--	--	--	--	--
10	25350.00	--	--	--	--	--	--	--	--
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 38 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dB m)	Margin (dB)	Azimuth (deg)
2	5190.00	-40.37	2.00	9.15	Horizontal	-33.22	-25.0	8.22	45
3	7785.00	-40.38	2.50	11.35	Horizontal	-31.53	-25.0	6.53	135
4	10380.00	-45.99	4.20	12.05	Horizontal	-38.14	-25.0	13.14	180
5	12975.00	-40.86	5.20	12.85	Horizontal	-33.21	-25.0	8.21	225
6	15570.00	-55.99	5.50	14.23	Horizontal	-47.26	-25.0	22.26	315
7	18165.0	--	--	--	--	--	--	--	--
8	20760.0	--	--	--	--	--	--	--	--
9	23355.0	--	--	--	--	--	--	--	--
10	25950.0	--	--	--	--	--	--	--	--
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 38 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dB m)	Margin (dB)	Azimuth (deg)
2	5190.00	-40.46	2.00	10.15	Horizontal	-32.31	-25.0	7.31	225
3	7785.00	-39.31	2.50	11.35	Horizontal	-30.46	-25.0	5.46	315
4	10380.00	-45.74	4.20	12.05	Horizontal	-37.89	-25.0	12.89	90
5	12975.00	-43.17	5.20	14.85	Horizontal	-33.52	-25.0	8.52	45
6	15570.00	-54.89	5.50	13.23	Horizontal	-47.16	-25.0	22.16	0
7	18165.0	--	--	--	--	--	--	--	--
8	20760.0	--	--	--	--	--	--	--	--
9	23355.0	--	--	--	--	--	--	--	--
10	25950.0	--	--	--	--	--	--	--	--
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 41 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5186.00	-39.68	2.00	9.15	Horizontal	-32.53	-25.0	7.53	45
3	7779.00	-40.38	2.50	11.35	Horizontal	-31.53	-25.0	6.53	315
4	10372.00	-53.47	4.20	12.05	Horizontal	-45.62	-25.0	20.62	180
5	12965.00	-40.88	5.20	12.85	Horizontal	-33.23	-25.0	8.23	90
6	15558.00	-48.30	5.50	14.23	Horizontal	-39.57	-25.0	14.57	225
7	18151.00	--	--	--	--	--	--	--	--
8	20744.00	--	--	--	--	--	--	--	--
9	23337.00	--	--	--	--	--	--	--	--
10	25930.00	--	--	--	--	--	--	--	--
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 41 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5186.00	-40.03	2.00	10.15	Horizontal	-31.88	-25.0	6.88	180
3	7779.00	-40.33	2.50	11.35	Horizontal	-31.48	-25.0	6.48	0
4	10372.00	-44.88	4.20	12.05	Horizontal	-37.03	-25.0	12.03	45
5	12965.00	-42.98	5.20	14.85	Horizontal	-33.33	-25.0	8.33	315
6	15558.00	-54.94	5.50	13.23	Horizontal	-47.21	-25.0	22.21	270
7	18151.00	--	--	--	--	--	--	--	--
8	20744.00	--	--	--	--	--	--	--	--
9	23337.00	--	--	--	--	--	--	--	--
10	25930.00	--	--	--	--	--	--	--	--
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	2020-05-18	2021-05-17
Power Splitter	Hua Xiang	SHX-GF2-2-13	10120101	/	/
Spectrum Analyzer	Key sight	N9010A	MY50210259	2020-05-18	2021-05-17
Signal Analyzer	R&S	FSV30	100815	2020-12-13	2021-12-12
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2020-04-02	2023-04-01
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	391	2019-12-16	2021-12-15
Horn Antenna	R&S	HF907	102723	2018-08-11	2021-08-10
Horn Antenna	ETS-Lindgren	3160-09	00102643	2018-06-20	2021-06-19
Signal generator	R&S	SMB 100A	102594	2020-05-18	2021-05-17
Climatic Chamber	ESPEC	SU-242	93000506	2020/12/13	2021/12/12
Preampflier	R&S	SCU18	102327	2020-05-18	2021-05-17
MOB COMMS DC SUPPLY	Keysight	66319D	MY43004105	2020-05-18	2021-05-17
RF Cable	Agilent	SMA 15cm	0001	2020-12-10	2021-06-09
Software	R&S	EMC32	9.26.0	/	/

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

ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.