



RF TEST REPORT

Applicant	Honor Device Co., Ltd.
FCC ID	2AYGCHJC-LX3
Product	Smart Phone
Model	HJC-LX3
Report No.	R2009H0246-R2V1
Issue Date	January 28, 2021

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2019)/ FCC CFR 47 Part 24E (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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Version	Revision description	Issue Date
Rev.0	Initial issue of report.	December 18, 2020
Rev.1	Update FCC ID.	January 28, 2021
Note: This revised report (Report No. R2009H0246-R2V1) supersedes and replaces the previously issued report (Report No. R2009H0246-R2). Please discard or destroy the previously issued report and dispose of it accordingly.		

Summary of measurement results

No.	Test Case	Clause in FCC rules	Verdict
1	RF Power Output and Effective Isotropic Radiated Power	2.1046 24.232(c)	PASS
2	Occupied Bandwidth	2.1049	PASS
3	Band Edge Compliance	2.1051 / 24.238(a)	PASS
4	Peak-to-Average Power Ratio	24.232/KDB 971168 D01(5.7)	PASS
5	Frequency Stability	2.1055 / 24.235	PASS
6	Spurious Emissions at Antenna Terminals	2.1051 / 24.238(a)	PASS
7	Radiates Spurious Emission	2.1053 / 24.238(a)	PASS
Date of Testing: September 11, 2020~ October 22, 2020			
Date of Sample Received: September 10, 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.			

HJC-LX3 (Report No.: R2009H0246-R2V1) is a variant model of HJC-LX9 (Report No.: R2009H0243-R2V1). The variant adds LTE band 12/17/66/CA-7C and removed NFC function. There is only tested LTE Band 2 for variant in this report. Other test values duplicated from Original for variant. The detailed product change description please refers to the *Difference Declaration Letter*.

1. Test Laboratory

1.1. Notes of the test report

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

1.2. Test facility

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

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

A2LA (Certificate Number: 3857.01)

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

1.3. Testing Location

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

2.3. Applicant and Manufacturer Information

Applicant	Honor Device Co., Ltd.
Applicant address	Suite 3401, Unit A, Building 6, Shum Yip Sky Park, No. 8089, Hongli West Road, Xiangmihu Street, Futian District, Shenzhen, Guangdong 518040, People's Republic of China
Manufacturer	Honor Device Co., Ltd.
Manufacturer address	Suite 3401, Unit A, Building 6, Shum Yip Sky Park, No. 8089, Hongli West Road, Xiangmihu Street, Futian District, Shenzhen, Guangdong 518040, People's Republic of China

2.4. General information

EUT Description				
Model	HJC-LX3			
SN	TRV0120825000058			
Hardware Version	HL3JSCM			
Software Version	10.1.1.111(C900E01R1P1)			
Power Supply	Battery/AC adapter			
Antenna Type	Internal Antenna			
Antenna Gain	Band	Frequency (MHz)	Main Antenna (dBi)	Second Antenna (dBi)
	GSM1900 /WCDMA Band II /LTE Band 2	1850	-3.3	-3.4
		1860	-3.0	-3.0
		1870	-2.7	-2.7
		1880	-2.6	-2.4
		1890	-2.5	-2.4
		1900	-2.4	-2.2
		1910	-2.3	-2.2
Test Mode(s)	GSM1900; WCDMA Band II; LTE Band 2;			
Test Modulation	(GSM/GPRS)GMSK, (EGPRS) GMSK/ 8PSK; (WCDMA) BPSK, QPSK, 16QAM; (LTE)QPSK, 16QAM, 64QAM			
GPRS Multislot Class	12			
EGPRS Multislot Class	12			
LTE Category	7			
Maximum E.I.R.P	GSM 1900:		27.35dBm	
	WCDMA Band II:		21.10dBm	
	LTE Band 2:		20.62dBm	



Rated Power Supply Voltage	3.8V		
Extreme Voltage	Minimum: 3.23V Maximum: 4.37V		
Extreme Temperature	Lowest: -30°C Highest: +50°C		
Operating Voltage	Minimum: 3.6V Maximum: 4.4V		
Operating Temperature	Lowest: 0°C Highest: +35°C		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	GSM1900	1850 ~ 1910	1930 ~ 1990
	WCDMA Band II	1850 ~ 1910	1930 ~ 1990
	LTE Band 2	1850 ~ 1910	1930 ~ 1990
EUT Accessory			
Accessory	Model	Manufacture	No.
Adapter	HW-110600E00	Honor Device Co., Ltd.	1
	HW-110600B00	Honor Device Co., Ltd.	2
	HW-110600U00	Honor Device Co., Ltd.	3
	HW-110600A00	Honor Device Co., Ltd.	4
	HW-110600E02	Honor Device Co., Ltd.	5
	HW-110600B02	Honor Device Co., Ltd.	6
	HW-110600U02	Honor Device Co., Ltd.	7
	HW-110600A02	Honor Device Co., Ltd.	8
	HW-110600C02	Honor Device Co., Ltd.	9
Battery	HB426589EEW	Honor Device Co., Ltd. (Manufacturer: SCUD (FUJIAN) Electronics Co., Ltd.)	1
	HB426589EEW	Honor Device Co., Ltd. (Manufacturer: Sunwoda Electronic Co., Ltd.)	2
USB Cable	213-01011-0	MING JI ELECTRONICS CO., LTD.	1
	L99UC139-CS-H	LUXSHARE Precision Industry Co., Ltd	2
Earphone	MEND1532B528 A11	Jiangxi Lianchuang Hongsheng Electronic Co. ,LTD	1
	EPAB542-2WH0 5-DH	FOXCONN INTERCONNECT TECHNOLOGY LIMITED	2
	1293-3283-3.5m m-339	Boluo County Quancheng Electronic Co. ,LTD	3
Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant. 2. There is more than one Adapter/USB cable/ Battery/Earphone, each one should be applied throughout the compliance test respectively, and however, only the worst case (Adapter 1/USB cable 2/ Battery 2/Earphone 1) will be recorded in this report.			

3. Applied Standards

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

Test standards:

FCC CFR 47 Part 24E (2019)

ANSI C63.26 (2015)

Reference standard:

FCC CFR47 Part 2 (2019)

KDB 971168 D01 Power Meas License Digital Systems v03r01

4. Test Configuration

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

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

All mode and data rates and positions and RB size and modulations were investigated.

Subsequently, only the worst case emissions are reported.

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

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

Test items	Modes/Modulation	
	GSM 1900	WCDMA Band II
RF Power Output and Effective Isotropic Radiated Power	GSM GPRS EGPRS	RMC HSDPA/HSUPA DC-HSDPA/HSPA+
Occupied Bandwidth	GSM GPRS(1Tx slot) EGPRS(1Tx slot)	RMC
Band Edge Compliance	GSM GPRS(1Tx slot) EGPRS(1Tx slot)	RMC
Peak-to-Average Power Ratio	GSM GPRS(1Tx slot) EGPRS(1Tx slot)	RMC
Frequency Stability	GSM GPRS(1Tx slot) EGPRS(1Tx slot)	RMC
Spurious Emissions at Antenna Terminals	GSM	RMC
Radiates Spurious Emission	GSM	RMC



Test modes are chosen to be reported as the worst case configuration below for LTE Band 2:

Test items	Bandwidth (MHz)						Modulation		RB			Test Channel		
	1.4	3	5	10	15	20	QPSK	16QAM	1	50%	100%	L	M	H
RF Power Output and Effective Isotropic Radiated Power	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Occupied Bandwidth	O	O	O	O	O	O	O	O	-	-	O	O	O	O
Band Edge Compliance	O	O	O	O	O	O	O	O	O	-	O	O	-	O
Peak-to-Average Power Ratio	O	O	O	O	O	O	O	O	-	-	O	O	O	O
Frequency Stability	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Conducted Spurious Emissions	O	O	O	O	O	O	O	-	O	-	-	O	O	O
Radiates Spurious Emission	O	-	O	-	-	O	O	-	O	-	-	-	O	-
Note	1. The mark "O" means that this configuration is chosen for testing. 2. The mark "-" means that this configuration is not testing.													

5. Test Case 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.

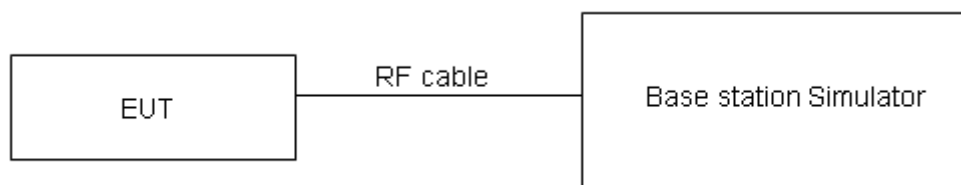
ERP can then be calculated as follows:

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

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

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

Test Setup



Limits

No specific RF power output requirements in part 2.1046.

Rule Part 24.232(c) Mobile and portable stations are limited to 2 watts EIRP.

Rule Part 24.232(e) Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

Limit	$\leq 2 \text{ W}$ (33 dBm)
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Measurement Uncertainty

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

Test Results
Original

GSM 1900		Maximum Output Power (dBm)			EIRP (dBm) Main Antenna			EIRP (dBm) Second Antenna		
		Channel 512	Channel 661	Channel 810	Channel 512	Channel 661	Channel 810	Channel 512	Channel 661	Channel 810
		1850.2 (MHz)	1880 (MHz)	1909.8 (MHz)	1850.2 (MHz)	1880 (MHz)	1909.8 (MHz)	1850.2 (MHz)	1880 (MHz)	1909.8 (MHz)
GSM(GMSK)	Results	29.55	29.56	29.55	26.25	26.96	27.25	26.15	27.16	27.35
GPRS (GMSK)	1TXslot	29.44	29.63	29.48	26.14	27.03	27.18	26.04	27.23	27.28
	2TXslots	26.11	26.39	26.30	22.81	23.79	24.00	22.71	23.99	24.10
	3TXslots	24.06	24.26	24.32	20.76	21.66	22.02	20.66	21.86	22.12
	4TXslots	22.54	22.70	22.68	19.24	20.10	20.38	19.14	20.30	20.48
EGPRS (8PSK)	1TXslot	25.71	25.67	25.58	22.41	23.07	23.28	22.31	23.27	23.38
	2TXslots	22.36	22.33	22.43	19.06	19.73	20.13	18.96	19.93	20.23
	3TXslots	20.62	20.50	20.49	17.32	17.90	18.19	17.22	18.10	18.29
	4TXslots	19.30	19.26	19.33	16.00	16.66	17.03	15.90	16.86	17.13

WCDMA Band II		Maximum Output Power (dBm)			EIRP (dBm) Main Antenna			EIRP (dBm) Second Antenna		
		Channel 9262	Channel 9400	Channel 9538	Channel 9262	Channel 9400	Channel 9538	Channel 9262	Channel 9400	Channel 9538
		1852.4 (MHz)	1880 (MHz)	1907.6 (MHz)	1852.4 (MHz)	1880 (MHz)	1907.6 (MHz)	1852.4 (MHz)	1880 (MHz)	1907.6 (MHz)
RMC		23.24	23.28	23.30	19.94	20.68	21.00	19.84	20.88	21.10
HSDPA	Sub - Test 1	22.66	22.70	22.72	19.36	20.10	20.42	19.26	20.30	20.52
	Sub - Test 2	22.15	22.19	22.21	18.85	19.59	19.91	18.75	19.79	20.01
	Sub - Test 3	21.64	21.68	21.70	18.34	19.08	19.40	18.24	19.28	19.50
	Sub - Test 4	21.63	21.67	21.69	18.33	19.07	19.39	18.23	19.27	19.49
HSUPA	Sub - Test 1	21.32	21.36	21.38	18.02	18.76	19.08	17.92	18.96	19.18
	Sub - Test 2	18.61	18.65	18.67	15.31	16.05	16.37	15.21	16.25	16.47
	Sub - Test 3	20.09	20.14	20.16	16.79	17.54	17.86	16.69	17.74	17.96
	Sub - Test 4	19.08	19.13	19.15	15.78	16.53	16.85	15.68	16.73	16.95
	Sub - Test 5	22.07	22.12	22.14	18.77	19.52	19.84	18.67	19.72	19.94
DC-HSDPA	Sub - Test 1	22.58	22.64	22.64	19.28	20.04	20.34	19.18	20.24	20.44
	Sub - Test 2	22.07	22.13	22.13	18.77	19.53	19.83	18.67	19.73	19.93
	Sub - Test 3	21.65	21.62	21.64	18.35	19.02	19.34	18.25	19.22	19.44
	Sub - Test 4	21.64	21.61	21.63	18.34	19.01	19.33	18.24	19.21	19.43
HSPA+	16QAM	21.13	21.19	21.21	17.83	18.59	18.91	17.73	18.79	19.01

Variant

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	EIRP (dBm) Main Antenna	EIRP (dBm) Second Antenna	Verdict
LTE Band2	1.4	18607	1	#0	QPSK	22.59	19.29	19.19	PASS
LTE Band2	1.4	18607	1	#Mid	QPSK	22.78	19.48	19.38	PASS
LTE Band2	1.4	18607	1	#Max	QPSK	22.60	19.30	19.20	PASS
LTE Band2	1.4	18607	3	#0	QPSK	22.55	19.25	19.15	PASS
LTE Band2	1.4	18607	3	#Mid	QPSK	22.57	19.27	19.17	PASS
LTE Band2	1.4	18607	3	#Max	QPSK	22.56	19.26	19.16	PASS
LTE Band2	1.4	18607	6	#0	QPSK	21.59	18.29	18.19	PASS
LTE Band2	1.4	18607	1	#0	QAM16	21.49	18.19	18.09	PASS
LTE Band2	1.4	18607	1	#Mid	QAM16	21.75	18.45	18.35	PASS
LTE Band2	1.4	18607	1	#Max	QAM16	21.50	18.20	18.10	PASS
LTE Band2	1.4	18607	3	#0	QAM16	21.66	18.36	18.26	PASS
LTE Band2	1.4	18607	3	#Mid	QAM16	21.64	18.34	18.24	PASS
LTE Band2	1.4	18607	3	#Max	QAM16	21.72	18.42	18.32	PASS
LTE Band2	1.4	18607	6	#0	QAM16	20.54	17.24	17.14	PASS
LTE Band2	1.4	18607	1	#0	QAM64	21.48	18.18	18.08	PASS
LTE Band2	1.4	18607	1	#Mid	QAM64	21.75	18.45	18.35	PASS
LTE Band2	1.4	18607	1	#Max	QAM64	21.52	18.22	18.12	PASS
LTE Band2	1.4	18607	3	#0	QAM64	21.63	18.33	18.23	PASS
LTE Band2	1.4	18607	3	#Mid	QAM64	21.66	18.36	18.26	PASS
LTE Band2	1.4	18607	3	#Max	QAM64	21.67	18.37	18.27	PASS
LTE Band2	1.4	18607	6	#0	QAM64	20.55	17.25	17.15	PASS
LTE Band2	1.4	18900	1	#0	QPSK	22.37	19.77	19.97	PASS
LTE Band2	1.4	18900	1	#Mid	QPSK	22.55	19.95	20.15	PASS
LTE Band2	1.4	18900	1	#Max	QPSK	22.35	19.75	19.95	PASS
LTE Band2	1.4	18900	3	#0	QPSK	22.45	19.85	20.05	PASS
LTE Band2	1.4	18900	3	#Mid	QPSK	22.44	19.84	20.04	PASS
LTE Band2	1.4	18900	3	#Max	QPSK	22.44	19.84	20.04	PASS
LTE Band2	1.4	18900	6	#0	QPSK	21.47	18.87	19.07	PASS
LTE Band2	1.4	18900	1	#0	QAM16	21.54	18.94	19.14	PASS
LTE Band2	1.4	18900	1	#Mid	QAM16	21.67	19.07	19.27	PASS
LTE Band2	1.4	18900	1	#Max	QAM16	21.58	18.98	19.18	PASS
LTE Band2	1.4	18900	3	#0	QAM16	21.41	18.81	19.01	PASS
LTE Band2	1.4	18900	3	#Mid	QAM16	21.39	18.79	18.99	PASS
LTE Band2	1.4	18900	3	#Max	QAM16	21.42	18.82	19.02	PASS
LTE Band2	1.4	18900	6	#0	QAM16	20.38	17.78	17.98	PASS
LTE Band2	1.4	18900	1	#0	QAM64	21.51	18.91	19.11	PASS
LTE Band2	1.4	18900	1	#Mid	QAM64	21.80	19.20	19.40	PASS
LTE Band2	1.4	18900	1	#Max	QAM64	21.58	18.98	19.18	PASS



LTE Band2	1.4	18900	3	#0	QAM64	21.41	18.81	19.01	PASS
LTE Band2	1.4	18900	3	#Mid	QAM64	21.44	18.84	19.04	PASS
LTE Band2	1.4	18900	3	#Max	QAM64	21.44	18.84	19.04	PASS
LTE Band2	1.4	18900	6	#0	QAM64	20.38	17.78	17.98	PASS
LTE Band2	1.4	19193	1	#0	QPSK	22.58	20.28	20.38	PASS
LTE Band2	1.4	19193	1	#Mid	QPSK	22.82	20.52	20.62	PASS
LTE Band2	1.4	19193	1	#Max	QPSK	22.61	20.31	20.41	PASS
LTE Band2	1.4	19193	3	#0	QPSK	22.55	20.25	20.35	PASS
LTE Band2	1.4	19193	3	#Mid	QPSK	22.56	20.26	20.36	PASS
LTE Band2	1.4	19193	3	#Max	QPSK	22.55	20.25	20.35	PASS
LTE Band2	1.4	19193	6	#0	QPSK	21.57	19.27	19.37	PASS
LTE Band2	1.4	19193	1	#0	QAM16	21.36	19.06	19.16	PASS
LTE Band2	1.4	19193	1	#Mid	QAM16	21.48	19.18	19.28	PASS
LTE Band2	1.4	19193	1	#Max	QAM16	21.38	19.08	19.18	PASS
LTE Band2	1.4	19193	3	#0	QAM16	21.46	19.16	19.26	PASS
LTE Band2	1.4	19193	3	#Mid	QAM16	21.44	19.14	19.24	PASS
LTE Band2	1.4	19193	3	#Max	QAM16	21.45	19.15	19.25	PASS
LTE Band2	1.4	19193	6	#0	QAM16	20.50	18.20	18.30	PASS
LTE Band2	1.4	19193	1	#0	QAM64	21.35	19.05	19.15	PASS
LTE Band2	1.4	19193	1	#Mid	QAM64	21.54	19.24	19.34	PASS
LTE Band2	1.4	19193	1	#Max	QAM64	21.38	19.08	19.18	PASS
LTE Band2	1.4	19193	3	#0	QAM64	21.45	19.15	19.25	PASS
LTE Band2	1.4	19193	3	#Mid	QAM64	21.46	19.16	19.26	PASS
LTE Band2	1.4	19193	3	#Max	QAM64	21.46	19.16	19.26	PASS
LTE Band2	1.4	19193	6	#0	QAM64	20.52	18.22	18.32	PASS
LTE Band2	3	18615	1	#0	QPSK	22.62	19.32	19.22	PASS
LTE Band2	3	18615	1	#Mid	QPSK	22.62	19.32	19.22	PASS
LTE Band2	3	18615	1	#Max	QPSK	22.67	19.37	19.27	PASS
LTE Band2	3	18615	8	#0	QPSK	21.57	18.27	18.17	PASS
LTE Band2	3	18615	8	#Mid	QPSK	21.58	18.28	18.18	PASS
LTE Band2	3	18615	8	#Max	QPSK	21.59	18.29	18.19	PASS
LTE Band2	3	18615	15	#0	QPSK	21.51	18.21	18.11	PASS
LTE Band2	3	18615	1	#0	QAM16	21.43	18.13	18.03	PASS
LTE Band2	3	18615	1	#Mid	QAM16	21.41	18.11	18.01	PASS
LTE Band2	3	18615	1	#Max	QAM16	21.41	18.11	18.01	PASS
LTE Band2	3	18615	8	#0	QAM16	20.53	17.23	17.13	PASS
LTE Band2	3	18615	8	#Mid	QAM16	20.54	17.24	17.14	PASS
LTE Band2	3	18615	8	#Max	QAM16	20.56	17.26	17.16	PASS
LTE Band2	3	18615	15	#0	QAM16	20.48	17.18	17.08	PASS
LTE Band2	3	18615	1	#0	QAM64	21.40	18.10	18.00	PASS
LTE Band2	3	18615	1	#Mid	QAM64	21.43	18.13	18.03	PASS
LTE Band2	3	18615	1	#Max	QAM64	21.40	18.10	18.00	PASS
LTE Band2	3	18615	8	#0	QAM64	20.57	17.27	17.17	PASS



LTE Band2	3	18615	8	#Mid	QAM64	20.52	17.22	17.12	PASS
LTE Band2	3	18615	8	#Max	QAM64	20.57	17.27	17.17	PASS
LTE Band2	3	18615	15	#0	QAM64	20.47	17.17	17.07	PASS
LTE Band2	3	18900	1	#0	QPSK	22.44	19.84	20.04	PASS
LTE Band2	3	18900	1	#Mid	QPSK	22.39	19.79	19.99	PASS
LTE Band2	3	18900	1	#Max	QPSK	22.41	19.81	20.01	PASS
LTE Band2	3	18900	8	#0	QPSK	21.49	18.89	19.09	PASS
LTE Band2	3	18900	8	#Mid	QPSK	21.46	18.86	19.06	PASS
LTE Band2	3	18900	8	#Max	QPSK	21.51	18.91	19.11	PASS
LTE Band2	3	18900	15	#0	QPSK	21.42	18.82	19.02	PASS
LTE Band2	3	18900	1	#0	QAM16	21.72	19.12	19.32	PASS
LTE Band2	3	18900	1	#Mid	QAM16	21.65	19.05	19.25	PASS
LTE Band2	3	18900	1	#Max	QAM16	21.61	19.01	19.21	PASS
LTE Band2	3	18900	8	#0	QAM16	20.48	17.88	18.08	PASS
LTE Band2	3	18900	8	#Mid	QAM16	20.46	17.86	18.06	PASS
LTE Band2	3	18900	8	#Max	QAM16	20.47	17.87	18.07	PASS
LTE Band2	3	18900	15	#0	QAM16	20.36	17.76	17.96	PASS
LTE Band2	3	18900	1	#0	QAM64	21.68	19.08	19.28	PASS
LTE Band2	3	18900	1	#Mid	QAM64	21.65	19.05	19.25	PASS
LTE Band2	3	18900	1	#Max	QAM64	21.69	19.09	19.29	PASS
LTE Band2	3	18900	8	#0	QAM64	20.48	17.88	18.08	PASS
LTE Band2	3	18900	8	#Mid	QAM64	20.49	17.89	18.09	PASS
LTE Band2	3	18900	8	#Max	QAM64	20.50	17.90	18.10	PASS
LTE Band2	3	18900	15	#0	QAM64	20.36	17.76	17.96	PASS
LTE Band2	3	19185	1	#0	QPSK	22.51	20.21	20.31	PASS
LTE Band2	3	19185	1	#Mid	QPSK	22.48	20.18	20.28	PASS
LTE Band2	3	19185	1	#Max	QPSK	22.53	20.23	20.33	PASS
LTE Band2	3	19185	8	#0	QPSK	21.60	19.30	19.40	PASS
LTE Band2	3	19185	8	#Mid	QPSK	21.58	19.28	19.38	PASS
LTE Band2	3	19185	8	#Max	QPSK	21.61	19.31	19.41	PASS
LTE Band2	3	19185	15	#0	QPSK	21.51	19.21	19.31	PASS
LTE Band2	3	19185	1	#0	QAM16	21.69	19.39	19.49	PASS
LTE Band2	3	19185	1	#Mid	QAM16	21.62	19.32	19.42	PASS
LTE Band2	3	19185	1	#Max	QAM16	21.62	19.32	19.42	PASS
LTE Band2	3	19185	8	#0	QAM16	20.52	18.22	18.32	PASS
LTE Band2	3	19185	8	#Mid	QAM16	20.51	18.21	18.31	PASS
LTE Band2	3	19185	8	#Max	QAM16	20.53	18.23	18.33	PASS
LTE Band2	3	19185	15	#0	QAM16	20.36	18.06	18.16	PASS
LTE Band2	3	19185	1	#0	QAM64	21.69	19.39	19.49	PASS
LTE Band2	3	19185	1	#Mid	QAM64	21.64	19.34	19.44	PASS
LTE Band2	3	19185	1	#Max	QAM64	21.64	19.34	19.44	PASS
LTE Band2	3	19185	8	#0	QAM64	20.54	18.24	18.34	PASS
LTE Band2	3	19185	8	#Mid	QAM64	20.53	18.23	18.33	PASS



LTE Band2	3	19185	8	#Max	QAM64	20.56	18.26	18.36	PASS
LTE Band2	3	19185	15	#0	QAM64	20.37	18.07	18.17	PASS
LTE Band2	5	18625	1	#0	QPSK	22.49	19.19	19.09	PASS
LTE Band2	5	18625	1	#Mid	QPSK	22.57	19.27	19.17	PASS
LTE Band2	5	18625	1	#Max	QPSK	22.47	19.17	19.07	PASS
LTE Band2	5	18625	12	#0	QPSK	21.47	18.17	18.07	PASS
LTE Band2	5	18625	12	#Mid	QPSK	21.51	18.21	18.11	PASS
LTE Band2	5	18625	12	#Max	QPSK	21.57	18.27	18.17	PASS
LTE Band2	5	18625	25	#0	QPSK	21.52	18.22	18.12	PASS
LTE Band2	5	18625	1	#0	QAM16	21.71	18.41	18.31	PASS
LTE Band2	5	18625	1	#Mid	QAM16	21.81	18.51	18.41	PASS
LTE Band2	5	18625	1	#Max	QAM16	21.68	18.38	18.28	PASS
LTE Band2	5	18625	12	#0	QAM16	20.42	17.12	17.02	PASS
LTE Band2	5	18625	12	#Mid	QAM16	20.41	17.11	17.01	PASS
LTE Band2	5	18625	12	#Max	QAM16	20.53	17.23	17.13	PASS
LTE Band2	5	18625	25	#0	QAM16	20.50	17.20	17.10	PASS
LTE Band2	5	18625	1	#0	QAM64	21.73	18.43	18.33	PASS
LTE Band2	5	18625	1	#Mid	QAM64	21.81	18.51	18.41	PASS
LTE Band2	5	18625	1	#Max	QAM64	21.71	18.41	18.31	PASS
LTE Band2	5	18625	12	#0	QAM64	20.45	17.15	17.05	PASS
LTE Band2	5	18625	12	#Mid	QAM64	20.44	17.14	17.04	PASS
LTE Band2	5	18625	12	#Max	QAM64	20.50	17.20	17.10	PASS
LTE Band2	5	18625	25	#0	QAM64	20.51	17.21	17.11	PASS
LTE Band2	5	18900	1	#0	QPSK	22.44	19.84	20.04	PASS
LTE Band2	5	18900	1	#Mid	QPSK	22.50	19.90	20.10	PASS
LTE Band2	5	18900	1	#Max	QPSK	22.46	19.86	20.06	PASS
LTE Band2	5	18900	12	#0	QPSK	21.50	18.90	19.10	PASS
LTE Band2	5	18900	12	#Mid	QPSK	21.50	18.90	19.10	PASS
LTE Band2	5	18900	12	#Max	QPSK	21.53	18.93	19.13	PASS
LTE Band2	5	18900	25	#0	QPSK	21.55	18.95	19.15	PASS
LTE Band2	5	18900	1	#0	QAM16	21.62	19.02	19.22	PASS
LTE Band2	5	18900	1	#Mid	QAM16	21.66	19.06	19.26	PASS
LTE Band2	5	18900	1	#Max	QAM16	21.57	18.97	19.17	PASS
LTE Band2	5	18900	12	#0	QAM16	20.41	17.81	18.01	PASS
LTE Band2	5	18900	12	#Mid	QAM16	20.40	17.80	18.00	PASS
LTE Band2	5	18900	12	#Max	QAM16	20.44	17.84	18.04	PASS
LTE Band2	5	18900	25	#0	QAM16	20.43	17.83	18.03	PASS
LTE Band2	5	18900	1	#0	QAM64	21.57	18.97	19.17	PASS
LTE Band2	5	18900	1	#Mid	QAM64	21.65	19.05	19.25	PASS
LTE Band2	5	18900	1	#Max	QAM64	21.59	18.99	19.19	PASS
LTE Band2	5	18900	12	#0	QAM64	20.39	17.79	17.99	PASS
LTE Band2	5	18900	12	#Mid	QAM64	20.41	17.81	18.01	PASS
LTE Band2	5	18900	12	#Max	QAM64	20.45	17.85	18.05	PASS



LTE Band2	5	18900	25	#0	QAM64	20.46	17.86	18.06	PASS
LTE Band2	5	19175	1	#0	QPSK	22.33	20.03	20.13	PASS
LTE Band2	5	19175	1	#Mid	QPSK	22.48	20.18	20.28	PASS
LTE Band2	5	19175	1	#Max	QPSK	22.44	20.14	20.24	PASS
LTE Band2	5	19175	12	#0	QPSK	21.50	19.20	19.30	PASS
LTE Band2	5	19175	12	#Mid	QPSK	21.53	19.23	19.33	PASS
LTE Band2	5	19175	12	#Max	QPSK	21.54	19.24	19.34	PASS
LTE Band2	5	19175	25	#0	QPSK	21.52	19.22	19.32	PASS
LTE Band2	5	19175	1	#0	QAM16	21.62	19.32	19.42	PASS
LTE Band2	5	19175	1	#Mid	QAM16	21.73	19.43	19.53	PASS
LTE Band2	5	19175	1	#Max	QAM16	21.66	19.36	19.46	PASS
LTE Band2	5	19175	12	#0	QAM16	20.51	18.21	18.31	PASS
LTE Band2	5	19175	12	#Mid	QAM16	20.51	18.21	18.31	PASS
LTE Band2	5	19175	12	#Max	QAM16	20.54	18.24	18.34	PASS
LTE Band2	5	19175	25	#0	QAM16	20.49	18.19	18.29	PASS
LTE Band2	5	19175	1	#0	QAM64	21.61	19.31	19.41	PASS
LTE Band2	5	19175	1	#Mid	QAM64	21.75	19.45	19.55	PASS
LTE Band2	5	19175	1	#Max	QAM64	21.66	19.36	19.46	PASS
LTE Band2	5	19175	12	#0	QAM64	20.45	18.15	18.25	PASS
LTE Band2	5	19175	12	#Mid	QAM64	20.47	18.17	18.27	PASS
LTE Band2	5	19175	12	#Max	QAM64	20.55	18.25	18.35	PASS
LTE Band2	5	19175	25	#0	QAM64	20.49	18.19	18.29	PASS
LTE Band2	10	18650	1	#0	QPSK	22.59	19.59	19.59	PASS
LTE Band2	10	18650	1	#Mid	QPSK	22.67	19.67	19.67	PASS
LTE Band2	10	18650	1	#Max	QPSK	22.49	19.49	19.49	PASS
LTE Band2	10	18650	25	#0	QPSK	21.56	18.56	18.56	PASS
LTE Band2	10	18650	25	#Mid	QPSK	21.53	18.53	18.53	PASS
LTE Band2	10	18650	25	#Max	QPSK	21.61	18.61	18.61	PASS
LTE Band2	10	18650	50	#0	QPSK	21.57	18.57	18.57	PASS
LTE Band2	10	18650	1	#0	QAM16	21.82	18.82	18.82	PASS
LTE Band2	10	18650	1	#Mid	QAM16	21.91	18.91	18.91	PASS
LTE Band2	10	18650	1	#Max	QAM16	21.74	18.74	18.74	PASS
LTE Band2	10	18650	25	#0	QAM16	20.59	17.59	17.59	PASS
LTE Band2	10	18650	25	#Mid	QAM16	20.57	17.57	17.57	PASS
LTE Band2	10	18650	25	#Max	QAM16	20.67	17.67	17.67	PASS
LTE Band2	10	18650	50	#0	QAM16	20.51	17.51	17.51	PASS
LTE Band2	10	18650	1	#0	QAM64	21.82	18.82	18.82	PASS
LTE Band2	10	18650	1	#Mid	QAM64	21.87	18.87	18.87	PASS
LTE Band2	10	18650	1	#Max	QAM64	21.73	18.73	18.73	PASS
LTE Band2	10	18650	25	#0	QAM64	20.59	17.59	17.59	PASS
LTE Band2	10	18650	25	#Mid	QAM64	20.57	17.57	17.57	PASS
LTE Band2	10	18650	25	#Max	QAM64	20.70	17.70	17.70	PASS
LTE Band2	10	18650	50	#0	QAM64	20.53	17.53	17.53	PASS



LTE Band2	10	18900	1	#0	QPSK	22.51	19.91	20.11	PASS
LTE Band2	10	18900	1	#Mid	QPSK	22.64	20.04	20.24	PASS
LTE Band2	10	18900	1	#Max	QPSK	22.49	19.89	20.09	PASS
LTE Band2	10	18900	25	#0	QPSK	21.54	18.94	19.14	PASS
LTE Band2	10	18900	25	#Mid	QPSK	21.55	18.95	19.15	PASS
LTE Band2	10	18900	25	#Max	QPSK	21.59	18.99	19.19	PASS
LTE Band2	10	18900	50	#0	QPSK	21.54	18.94	19.14	PASS
LTE Band2	10	18900	1	#0	QAM16	21.69	19.09	19.29	PASS
LTE Band2	10	18900	1	#Mid	QAM16	21.75	19.15	19.35	PASS
LTE Band2	10	18900	1	#Max	QAM16	21.64	19.04	19.24	PASS
LTE Band2	10	18900	25	#0	QAM16	20.50	17.90	18.10	PASS
LTE Band2	10	18900	25	#Mid	QAM16	20.54	17.94	18.14	PASS
LTE Band2	10	18900	25	#Max	QAM16	20.59	17.99	18.19	PASS
LTE Band2	10	18900	50	#0	QAM16	20.48	17.88	18.08	PASS
LTE Band2	10	18900	1	#0	QAM64	21.68	19.08	19.28	PASS
LTE Band2	10	18900	1	#Mid	QAM64	21.78	19.18	19.38	PASS
LTE Band2	10	18900	1	#Max	QAM64	21.68	19.08	19.28	PASS
LTE Band2	10	18900	25	#0	QAM64	20.54	17.94	18.14	PASS
LTE Band2	10	18900	25	#Mid	QAM64	20.52	17.92	18.12	PASS
LTE Band2	10	18900	25	#Max	QAM64	20.58	17.98	18.18	PASS
LTE Band2	10	18900	50	#0	QAM64	20.51	17.91	18.11	PASS
LTE Band2	10	19150	1	#0	QPSK	22.55	20.25	20.35	PASS
LTE Band2	10	19150	1	#Mid	QPSK	22.66	20.36	20.46	PASS
LTE Band2	10	19150	1	#Max	QPSK	22.70	20.40	20.50	PASS
LTE Band2	10	19150	25	#0	QPSK	21.55	19.25	19.35	PASS
LTE Band2	10	19150	25	#Mid	QPSK	21.54	19.24	19.34	PASS
LTE Band2	10	19150	25	#Max	QPSK	21.61	19.31	19.41	PASS
LTE Band2	10	19150	50	#0	QPSK	21.55	19.25	19.35	PASS
LTE Band2	10	19150	1	#0	QAM16	21.33	19.03	19.13	PASS
LTE Band2	10	19150	1	#Mid	QAM16	21.47	19.17	19.27	PASS
LTE Band2	10	19150	1	#Max	QAM16	21.42	19.12	19.22	PASS
LTE Band2	10	19150	25	#0	QAM16	20.49	18.19	18.29	PASS
LTE Band2	10	19150	25	#Mid	QAM16	20.50	18.20	18.30	PASS
LTE Band2	10	19150	25	#Max	QAM16	20.57	18.27	18.37	PASS
LTE Band2	10	19150	50	#0	QAM16	20.49	18.19	18.29	PASS
LTE Band2	10	19150	1	#0	QAM64	21.31	19.01	19.11	PASS
LTE Band2	10	19150	1	#Mid	QAM64	21.50	19.20	19.30	PASS
LTE Band2	10	19150	1	#Max	QAM64	21.45	19.15	19.25	PASS
LTE Band2	10	19150	25	#0	QAM64	20.49	18.19	18.29	PASS
LTE Band2	10	19150	25	#Mid	QAM64	20.54	18.24	18.34	PASS
LTE Band2	10	19150	25	#Max	QAM64	20.57	18.27	18.37	PASS
LTE Band2	10	19150	50	#0	QAM64	20.47	18.17	18.27	PASS
LTE Band2	15	18675	1	#0	QPSK	22.53	19.53	19.53	PASS



LTE Band2	15	18675	1	#Mid	QPSK	22.50	19.50	19.50	PASS
LTE Band2	15	18675	1	#Max	QPSK	22.36	19.36	19.36	PASS
LTE Band2	15	18675	36	#0	QPSK	21.62	18.62	18.62	PASS
LTE Band2	15	18675	36	#Mid	QPSK	21.61	18.61	18.61	PASS
LTE Band2	15	18675	36	#Max	QPSK	21.58	18.58	18.58	PASS
LTE Band2	15	18675	75	#0	QPSK	21.58	18.58	18.58	PASS
LTE Band2	15	18675	1	#0	QAM16	21.67	18.67	18.67	PASS
LTE Band2	15	18675	1	#Mid	QAM16	21.68	18.68	18.68	PASS
LTE Band2	15	18675	1	#Max	QAM16	21.58	18.58	18.58	PASS
LTE Band2	15	18675	36	#0	QAM16	20.51	17.51	17.51	PASS
LTE Band2	15	18675	36	#Mid	QAM16	20.53	17.53	17.53	PASS
LTE Band2	15	18675	36	#Max	QAM16	20.50	17.50	17.50	PASS
LTE Band2	15	18675	75	#0	QAM16	20.50	17.50	17.50	PASS
LTE Band2	15	18675	1	#0	QAM64	21.65	18.65	18.65	PASS
LTE Band2	15	18675	1	#Mid	QAM64	21.65	18.65	18.65	PASS
LTE Band2	15	18675	1	#Max	QAM64	21.58	18.58	18.58	PASS
LTE Band2	15	18675	36	#0	QAM64	20.50	17.50	17.50	PASS
LTE Band2	15	18675	36	#Mid	QAM64	20.52	17.52	17.52	PASS
LTE Band2	15	18675	36	#Max	QAM64	20.47	17.47	17.47	PASS
LTE Band2	15	18675	75	#0	QAM64	20.51	17.51	17.51	PASS
LTE Band2	15	18900	1	#0	QPSK	22.53	19.93	20.13	PASS
LTE Band2	15	18900	1	#Mid	QPSK	22.57	19.97	20.17	PASS
LTE Band2	15	18900	1	#Max	QPSK	22.45	19.85	20.05	PASS
LTE Band2	15	18900	36	#0	QPSK	21.58	18.98	19.18	PASS
LTE Band2	15	18900	36	#Mid	QPSK	21.56	18.96	19.16	PASS
LTE Band2	15	18900	36	#Max	QPSK	21.61	19.01	19.21	PASS
LTE Band2	15	18900	75	#0	QPSK	21.60	19.00	19.20	PASS
LTE Band2	15	18900	1	#0	QAM16	21.47	18.87	19.07	PASS
LTE Band2	15	18900	1	#Mid	QAM16	21.54	18.94	19.14	PASS
LTE Band2	15	18900	1	#Max	QAM16	21.45	18.85	19.05	PASS
LTE Band2	15	18900	36	#0	QAM16	20.47	17.87	18.07	PASS
LTE Band2	15	18900	36	#Mid	QAM16	20.49	17.89	18.09	PASS
LTE Band2	15	18900	36	#Max	QAM16	20.51	17.91	18.11	PASS
LTE Band2	15	18900	75	#0	QAM16	20.54	17.94	18.14	PASS
LTE Band2	15	18900	1	#0	QAM64	21.51	18.91	19.11	PASS
LTE Band2	15	18900	1	#Mid	QAM64	21.53	18.93	19.13	PASS
LTE Band2	15	18900	1	#Max	QAM64	21.43	18.83	19.03	PASS
LTE Band2	15	18900	36	#0	QAM64	20.49	17.89	18.09	PASS
LTE Band2	15	18900	36	#Mid	QAM64	20.49	17.89	18.09	PASS
LTE Band2	15	18900	36	#Max	QAM64	20.52	17.92	18.12	PASS
LTE Band2	15	18900	75	#0	QAM64	20.58	17.98	18.18	PASS
LTE Band2	15	19125	1	#0	QPSK	22.40	20.00	20.20	PASS
LTE Band2	15	19125	1	#Mid	QPSK	22.45	20.05	20.25	PASS



LTE Band2	15	19125	1	#Max	QPSK	22.43	20.03	20.23	PASS
LTE Band2	15	19125	36	#0	QPSK	21.55	19.15	19.35	PASS
LTE Band2	15	19125	36	#Mid	QPSK	21.56	19.16	19.36	PASS
LTE Band2	15	19125	36	#Max	QPSK	21.61	19.21	19.41	PASS
LTE Band2	15	19125	75	#0	QPSK	21.56	19.16	19.36	PASS
LTE Band2	15	19125	1	#0	QAM16	21.65	19.25	19.45	PASS
LTE Band2	15	19125	1	#Mid	QAM16	21.72	19.32	19.52	PASS
LTE Band2	15	19125	1	#Max	QAM16	21.62	19.22	19.42	PASS
LTE Band2	15	19125	36	#0	QAM16	20.51	18.11	18.31	PASS
LTE Band2	15	19125	36	#Mid	QAM16	20.50	18.10	18.30	PASS
LTE Band2	15	19125	36	#Max	QAM16	20.54	18.14	18.34	PASS
LTE Band2	15	19125	75	#0	QAM16	20.49	18.09	18.29	PASS
LTE Band2	15	19125	1	#0	QAM64	21.67	19.27	19.47	PASS
LTE Band2	15	19125	1	#Mid	QAM64	21.70	19.30	19.50	PASS
LTE Band2	15	19125	1	#Max	QAM64	21.65	19.25	19.45	PASS
LTE Band2	15	19125	36	#0	QAM64	20.48	18.08	18.28	PASS
LTE Band2	15	19125	36	#Mid	QAM64	20.49	18.09	18.29	PASS
LTE Band2	15	19125	36	#Max	QAM64	20.52	18.12	18.32	PASS
LTE Band2	15	19125	75	#0	QAM64	20.51	18.11	18.31	PASS
LTE Band2	20	18700	1	#0	QPSK	22.51	19.51	19.51	PASS
LTE Band2	20	18700	1	#Mid	QPSK	22.72	19.72	19.72	PASS
LTE Band2	20	18700	1	#Max	QPSK	22.47	19.47	19.47	PASS
LTE Band2	20	18700	50	#0	QPSK	21.44	18.44	18.44	PASS
LTE Band2	20	18700	50	#Mid	QPSK	21.44	18.44	18.44	PASS
LTE Band2	20	18700	50	#Max	QPSK	21.43	18.43	18.43	PASS
LTE Band2	20	18700	100	#0	QPSK	21.38	18.38	18.38	PASS
LTE Band2	20	18700	1	#0	QAM16	21.33	18.33	18.33	PASS
LTE Band2	20	18700	1	#Mid	QAM16	21.44	18.44	18.44	PASS
LTE Band2	20	18700	1	#Max	QAM16	21.28	18.28	18.28	PASS
LTE Band2	20	18700	50	#0	QAM16	20.39	17.39	17.39	PASS
LTE Band2	20	18700	50	#Mid	QAM16	20.40	17.40	17.40	PASS
LTE Band2	20	18700	50	#Max	QAM16	20.39	17.39	17.39	PASS
LTE Band2	20	18700	100	#0	QAM16	20.42	17.42	17.42	PASS
LTE Band2	20	18700	1	#0	QAM64	21.33	18.33	18.33	PASS
LTE Band2	20	18700	1	#Mid	QAM64	21.40	18.40	18.40	PASS
LTE Band2	20	18700	1	#Max	QAM64	21.22	18.22	18.22	PASS
LTE Band2	20	18700	50	#0	QAM64	20.37	17.37	17.37	PASS
LTE Band2	20	18700	50	#Mid	QAM64	20.37	17.37	17.37	PASS
LTE Band2	20	18700	50	#Max	QAM64	20.40	17.40	17.40	PASS
LTE Band2	20	18700	100	#0	QAM64	20.42	17.42	17.42	PASS
LTE Band2	20	18900	1	#0	QPSK	22.42	19.82	20.02	PASS
LTE Band2	20	18900	1	#Mid	QPSK	22.58	19.98	20.18	PASS
LTE Band2	20	18900	1	#Max	QPSK	22.39	19.79	19.99	PASS



LTE Band2	20	18900	50	#0	QPSK	21.50	18.90	19.10	PASS
LTE Band2	20	18900	50	#Mid	QPSK	21.51	18.91	19.11	PASS
LTE Band2	20	18900	50	#Max	QPSK	21.54	18.94	19.14	PASS
LTE Band2	20	18900	100	#0	QPSK	21.52	18.92	19.12	PASS
LTE Band2	20	18900	1	#0	QAM16	21.16	18.56	18.76	PASS
LTE Band2	20	18900	1	#Mid	QAM16	21.35	18.75	18.95	PASS
LTE Band2	20	18900	1	#Max	QAM16	21.12	18.52	18.72	PASS
LTE Band2	20	18900	50	#0	QAM16	20.49	17.89	18.09	PASS
LTE Band2	20	18900	50	#Mid	QAM16	20.48	17.88	18.08	PASS
LTE Band2	20	18900	50	#Max	QAM16	20.50	17.90	18.10	PASS
LTE Band2	20	18900	100	#0	QAM16	20.47	17.87	18.07	PASS
LTE Band2	20	18900	1	#0	QAM64	21.16	18.56	18.76	PASS
LTE Band2	20	18900	1	#Mid	QAM64	21.42	18.82	19.02	PASS
LTE Band2	20	18900	1	#Max	QAM64	21.11	18.51	18.71	PASS
LTE Band2	20	18900	50	#0	QAM64	20.47	17.87	18.07	PASS
LTE Band2	20	18900	50	#Mid	QAM64	20.50	17.90	18.10	PASS
LTE Band2	20	18900	50	#Max	QAM64	20.50	17.90	18.10	PASS
LTE Band2	20	18900	100	#0	QAM64	20.50	17.90	18.10	PASS
LTE Band2	20	19100	1	#0	QPSK	22.33	19.93	20.13	PASS
LTE Band2	20	19100	1	#Mid	QPSK	22.61	20.21	20.41	PASS
LTE Band2	20	19100	1	#Max	QPSK	22.45	20.05	20.25	PASS
LTE Band2	20	19100	50	#0	QPSK	21.41	19.01	19.21	PASS
LTE Band2	20	19100	50	#Mid	QPSK	21.40	19.00	19.20	PASS
LTE Band2	20	19100	50	#Max	QPSK	21.48	19.08	19.28	PASS
LTE Band2	20	19100	100	#0	QPSK	21.44	19.04	19.24	PASS
LTE Band2	20	19100	1	#0	QAM16	21.50	19.10	19.30	PASS
LTE Band2	20	19100	1	#Mid	QAM16	21.71	19.31	19.51	PASS
LTE Band2	20	19100	1	#Max	QAM16	21.55	19.15	19.35	PASS
LTE Band2	20	19100	50	#0	QAM16	20.41	18.01	18.21	PASS
LTE Band2	20	19100	50	#Mid	QAM16	20.37	17.97	18.17	PASS
LTE Band2	20	19100	50	#Max	QAM16	20.43	18.03	18.23	PASS
LTE Band2	20	19100	100	#0	QAM16	20.41	18.01	18.21	PASS
LTE Band2	20	19100	1	#0	QAM64	21.49	19.09	19.29	PASS
LTE Band2	20	19100	1	#Mid	QAM64	21.70	19.30	19.50	PASS
LTE Band2	20	19100	1	#Max	QAM64	21.54	19.14	19.34	PASS
LTE Band2	20	19100	50	#0	QAM64	20.40	18.00	18.20	PASS
LTE Band2	20	19100	50	#Mid	QAM64	20.38	17.98	18.18	PASS
LTE Band2	20	19100	50	#Max	QAM64	20.44	18.04	18.24	PASS
LTE Band2	20	19100	100	#0	QAM64	20.42	18.02	18.22	PASS

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 3kHz, VBW is set to 10kHz for GSM 1900,

RBW is set to 51 kHz, VBW is set to 160kHz for WCDMA Band II,

RBW is set to 30 kHz, VBW is set to 91 kHz for LTE Band 2 (1.4MHz),

RBW is set to 62 kHz, VBW is set to 180 kHz for LTE Band 2 (3MHz),

RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 2 (5MHz),

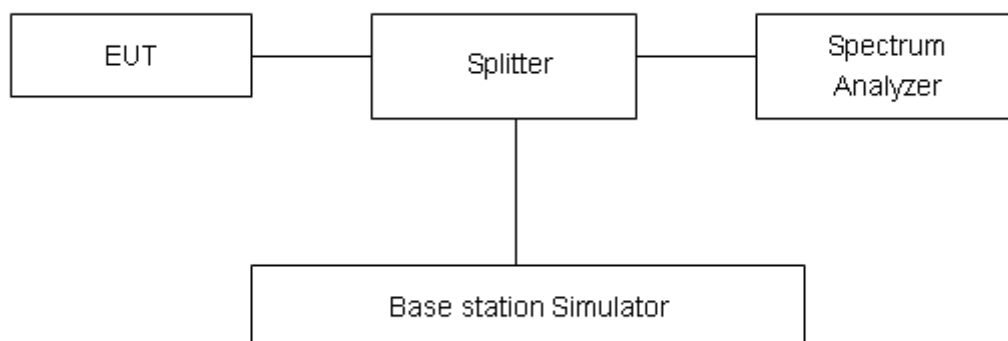
RBW is set to 200 kHz, VBW is set to 620 kHz for LTE Band 2 (10MHz),

RBW is set to 300 kHz,VBW is set to 910 kHz for LTE Band 2 (15MHz).

RBW is set to 430 kHz,VBW is set to 1.2 MHz for LTE Band 2 (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 $k = 2$, $U = 624\text{Hz}$.

Test Result
Original

Mode	Channel	Frequency (MHz)	99% Power Bandwidth (MHz)	-26dBc Bandwidth(MHz)
GSM 1900 (GMSK)	512	1850.2	0.2457	0.3109
	661	1880.0	0.2439	0.3184
	810	1909.8	0.2470	0.3096
GPRS 1900 (GMSK)	512	1850.2	0.2450	0.3102
	661	1880.0	0.2497	0.3208
	810	1909.8	0.2460	0.3113
EGPRS 1900 (8PSK)	512	1850.2	0.2463	0.3052
	661	1880.0	0.2563	0.3140
	810	1909.8	0.2473	0.3167
WCDMA Band II (RMC)	9262	1852.4	4.1632	4.6840
	9400	1880	4.1698	4.6750
	9538	1907.6	4.1677	4.6920

Variant

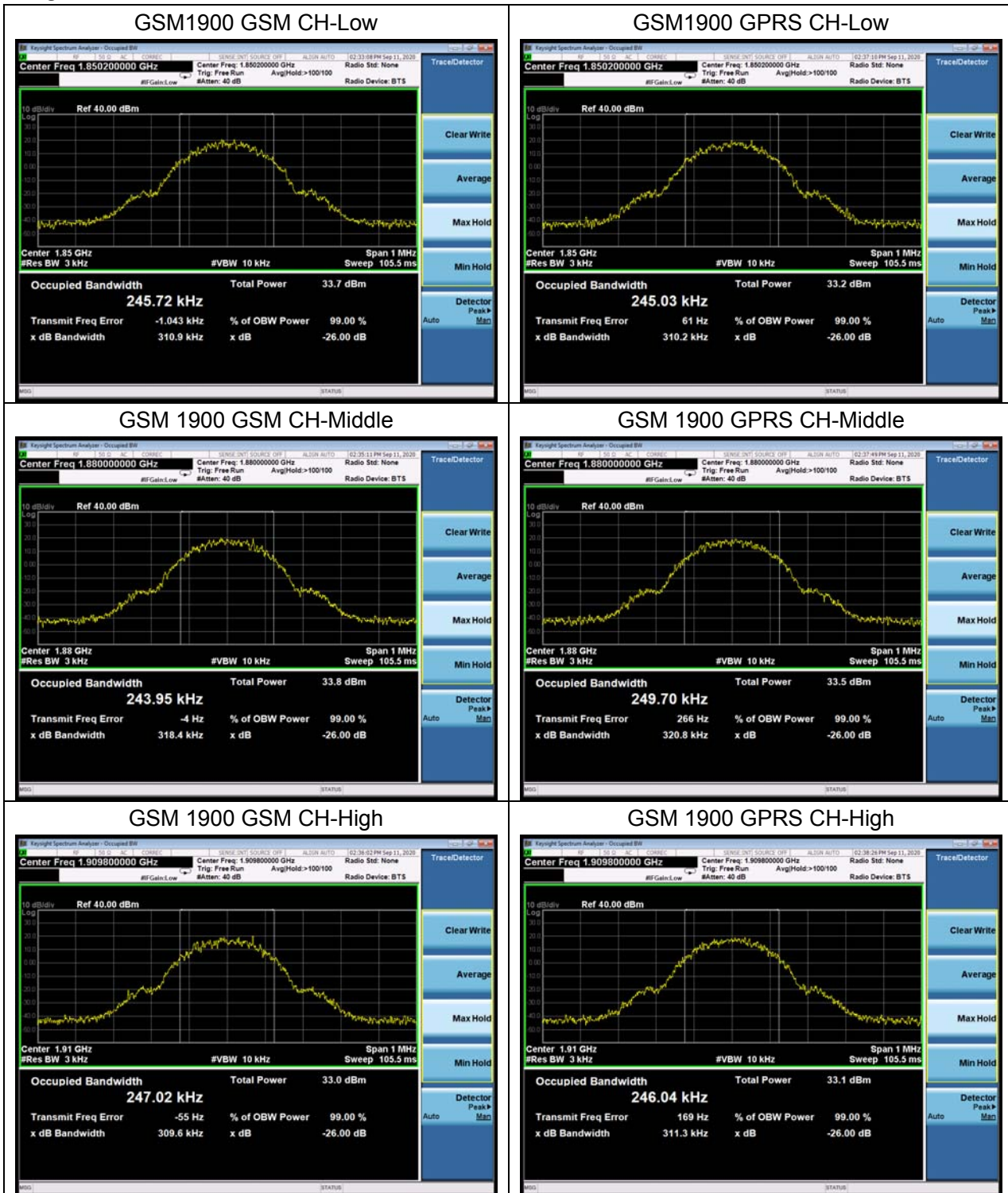
LTE Band 2					
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
QPSK	1.4	18607	1850.7	1.0949	1.2920
		18900	1880.0	1.0957	1.2760
		19193	1909.3	1.0946	1.3250
	3	18615	1851.5	2.6929	2.9150
		18900	1880	2.6929	2.9060
		19185	1908.5	2.6893	2.9150
	5	18625	1852.5	4.5195	4.8730
		18900	1880	4.5049	4.9210
		19175	1907.5	4.4958	4.8640
	10	18650	1855	8.9782	9.6880
		18900	1880	8.9781	9.7460
		19150	1905	8.9605	9.6740
	15	18675	1857.5	13.4610	14.5900
		18900	1880	13.4830	14.5300
		19125	1902.5	13.4510	14.4500



	20	18700	1860	17.9030	19.1100
		18900	1880	17.9990	19.4400
		19100	1900	17.9550	19.2400
16QAM	1.4	18607	1850.7	1.0932	1.2630
		18900	1880.0	1.0978	1.2970
		19193	1909.3	1.0954	1.3080
	3	18615	1851.5	2.6821	2.9180
		18900	1880	2.6928	2.9070
		19185	1908.5	2.6893	2.9260
	5	18625	1852.5	4.5108	4.9030
		18900	1880	4.5147	4.9040
		19175	1907.5	4.5013	4.8340
	10	18650	1855	8.9805	9.7570
		18900	1880	8.9687	9.6490
		19150	1905	8.9873	9.6030
	15	18675	1857.5	13.4490	14.4100
		18900	1880	13.5180	14.5300
		19125	1902.5	13.4710	14.6800
	20	18700	1860	17.9240	19.2900
		18900	1880	17.9370	19.1900
		19100	1900	17.9490	19.2500
64QAM	1.4	18607	1850.7	1.0935	1.2690
		18900	1880.0	1.0956	1.2740
		19193	1909.3	1.1014	1.2970
	3	18615	1851.5	2.6949	2.9300
		18900	1880	2.6842	2.9170
		19185	1908.5	2.6939	2.9060
	5	18625	1852.5	4.5088	4.9130
		18900	1880	4.5147	4.9220
		19175	1907.5	4.5073	4.8580
	10	18650	1855	8.9742	9.7910
		18900	1880	9.0017	9.4690
		19150	1905	9.0067	9.6810
	15	18675	1857.5	13.5110	14.5500
		18900	1880	13.4780	14.5200
		19125	1902.5	13.4630	14.5500
	20	18700	1860	17.9590	19.4000
		18900	1880	17.9360	19.2300
		19100	1900	17.9760	19.2300

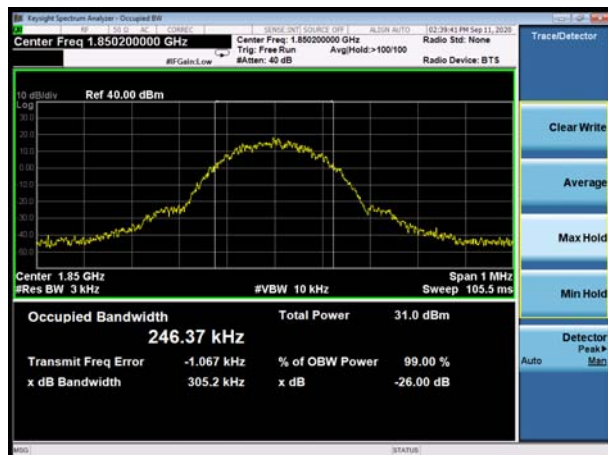


Original





GSM1900 EGPRS CH-Low



WCDMA Band II RMC CH-Low



GSM 1900 EGPRS CH-Middle



WCDMA Band II RMC CH-Middle



GSM 1900 EGPRS CH-High



WCDMA Band II RMC CH-High



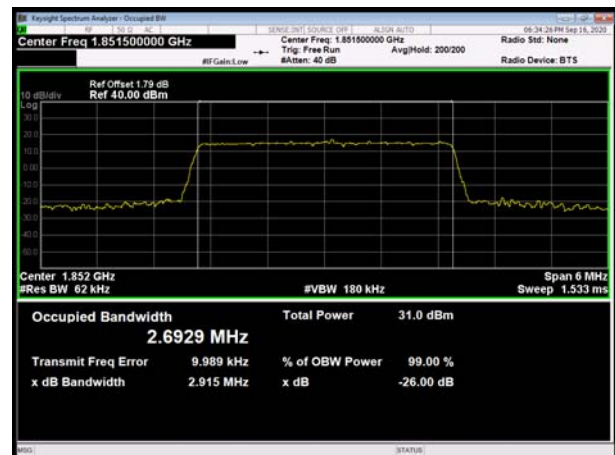


Variant

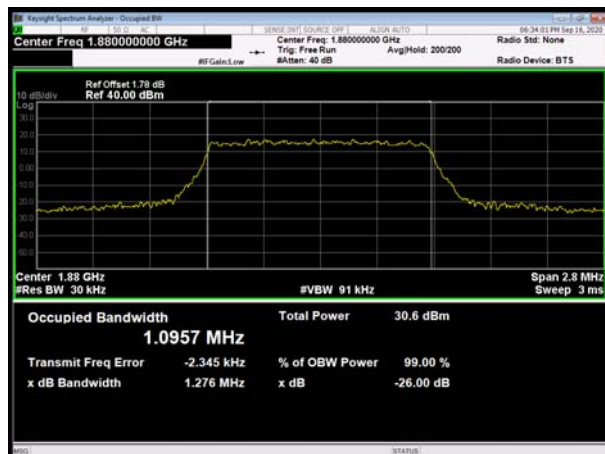
LTE Band 2 1.4MHz QPSK CH-Low



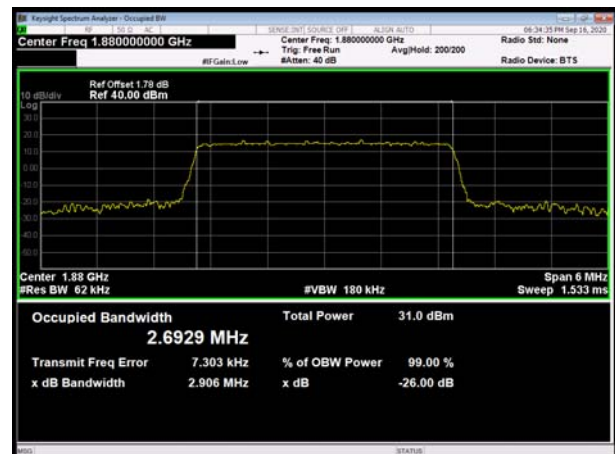
LTE Band 2 3MHz QPSK CH-Low



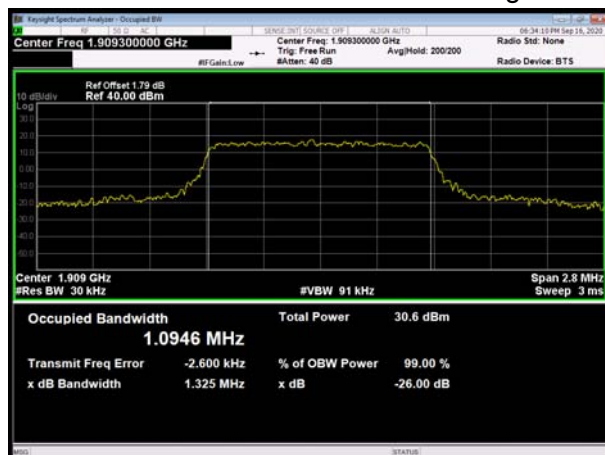
LTE Band 2 1.4MHz QPSK CH-Middle



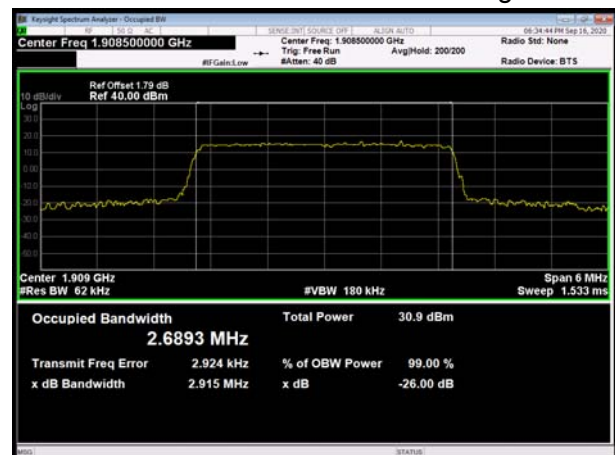
LTE Band 2 3MHz QPSK CH-Middle



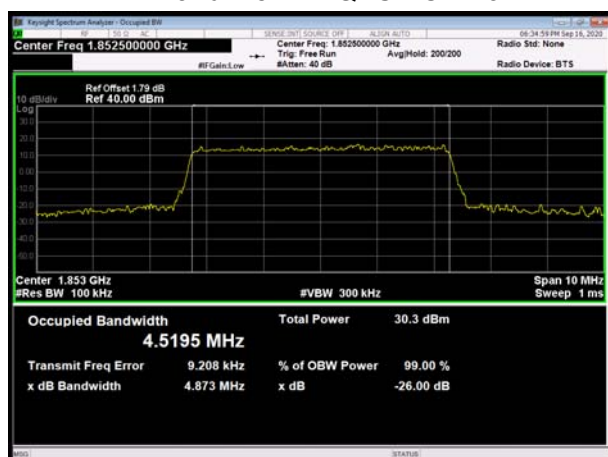
LTE Band 2 1.4MHz QPSK CH-High



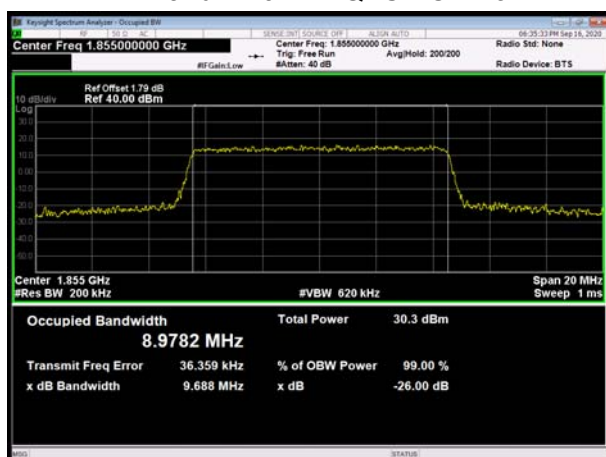
LTE Band 2 3MHz QPSK CH-High



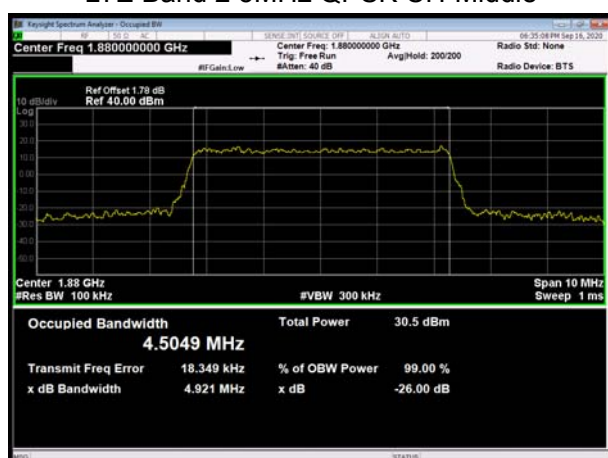
LTE Band 2 5MHz QPSK CH-Low



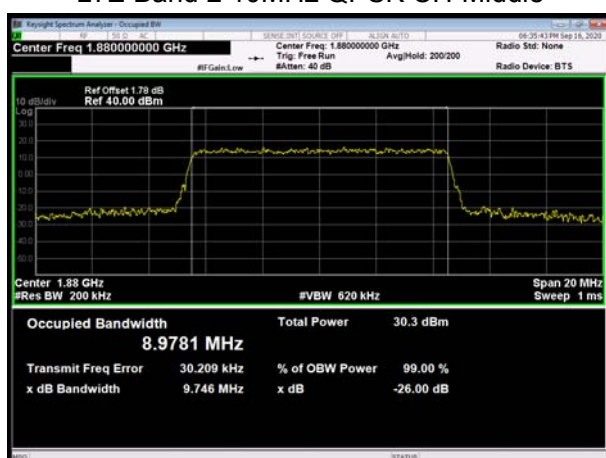
LTE Band 2 10MHz QPSK CH-Low



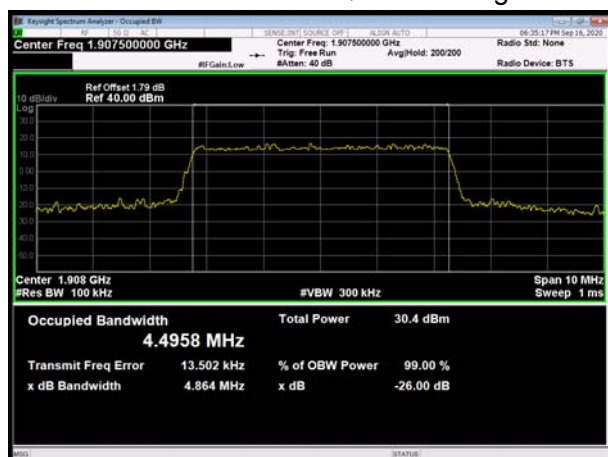
LTE Band 2 5MHz QPSK CH-Middle



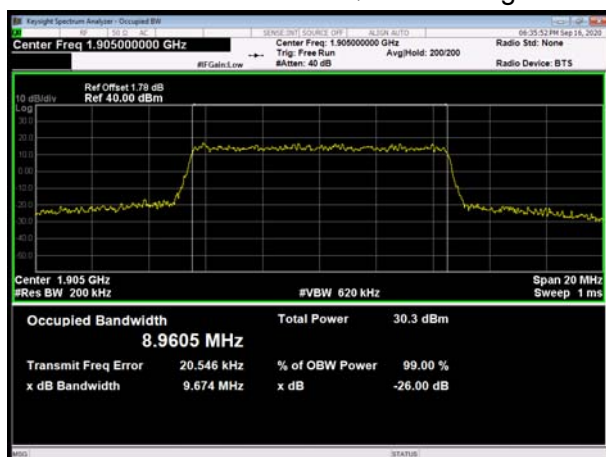
LTE Band 2 10MHz QPSK CH-Middle



LTE Band 2 5MHz QPSK CH-High

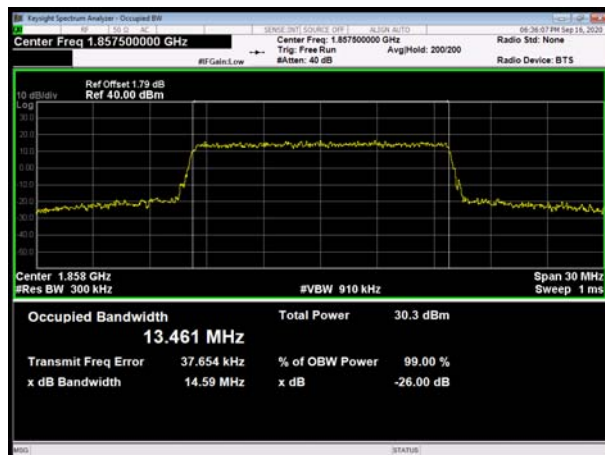


LTE Band 2 10MHz QPSK CH-High

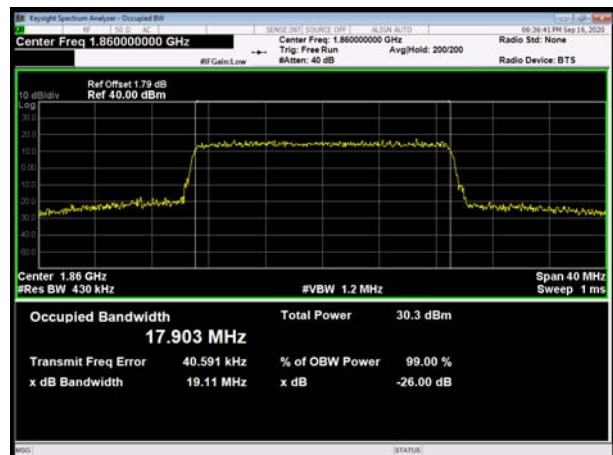




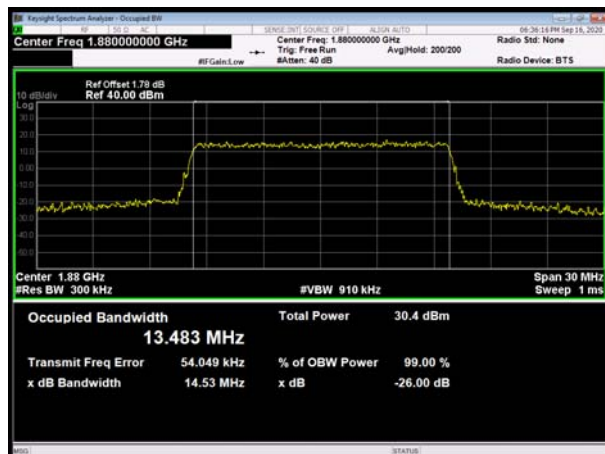
LTE Band 2 15MHz QPSK CH-Low



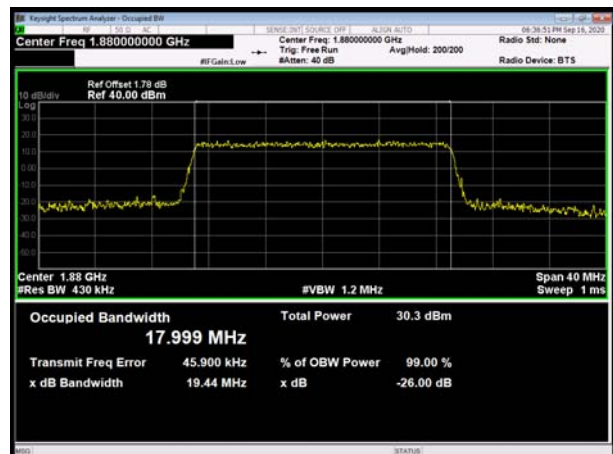
LTE Band 2 20MHz QPSK CH-Low



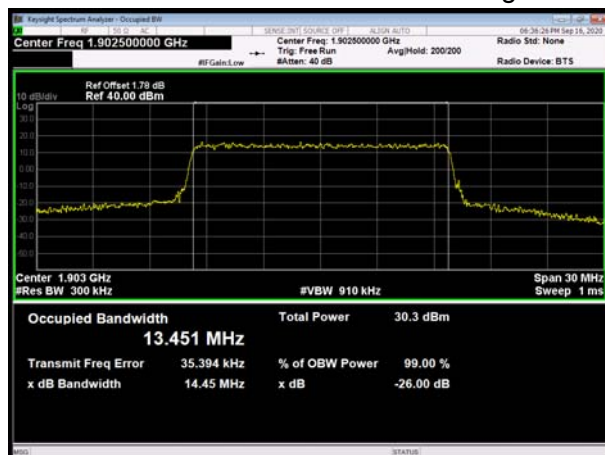
LTE Band 2 15MHz QPSK CH-Middle



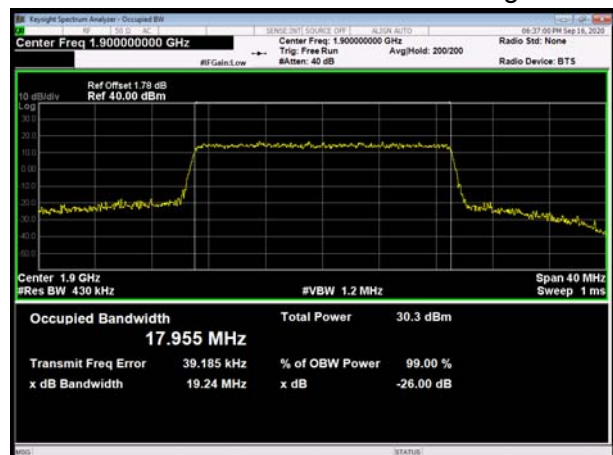
LTE Band 2 20MHz QPSK CH-Middle



LTE Band 2 15MHz QPSK CH-High

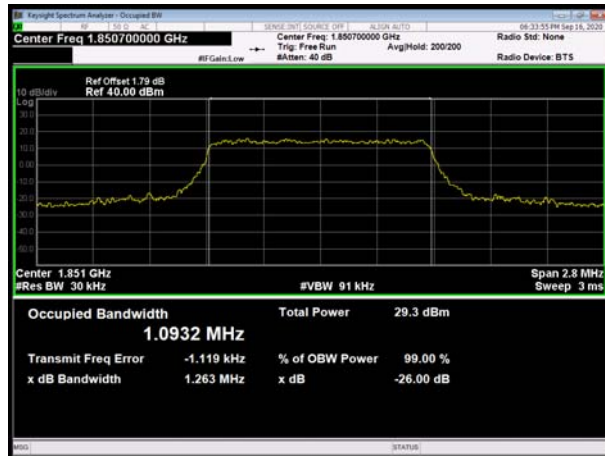


LTE Band 2 20MHz QPSK CH-High

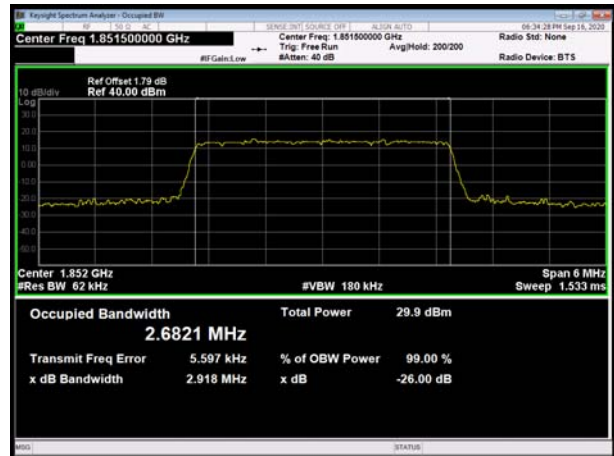




LTE Band 2 1.4MHz 16QAM CH-Low



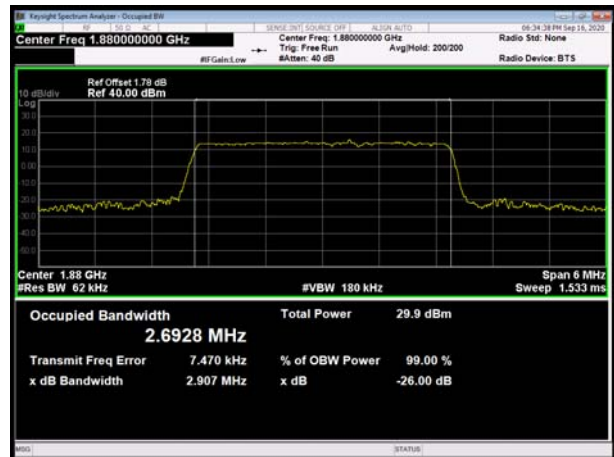
LTE Band 2 3MHz 16QAM CH-Low



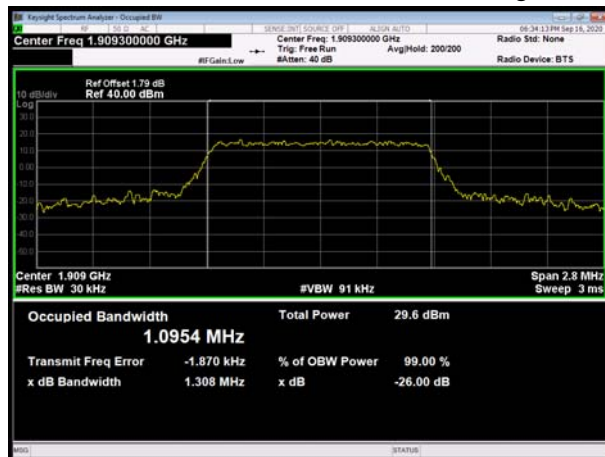
LTE Band 2 1.4MHz 16QAM CH-Middle



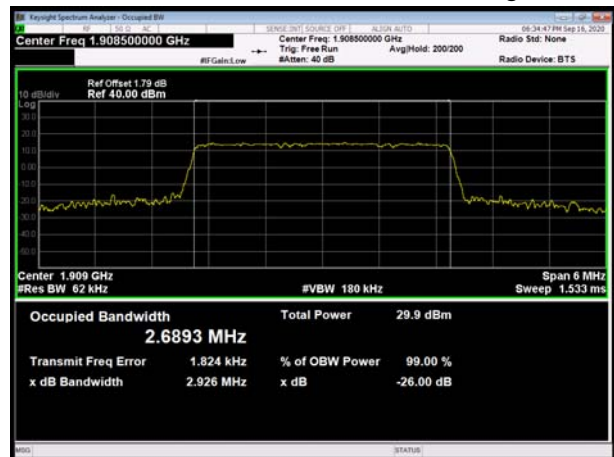
LTE Band 2 3MHz 16QAM CH-Middle



LTE Band 2 1.4MHz 16QAM CH-High

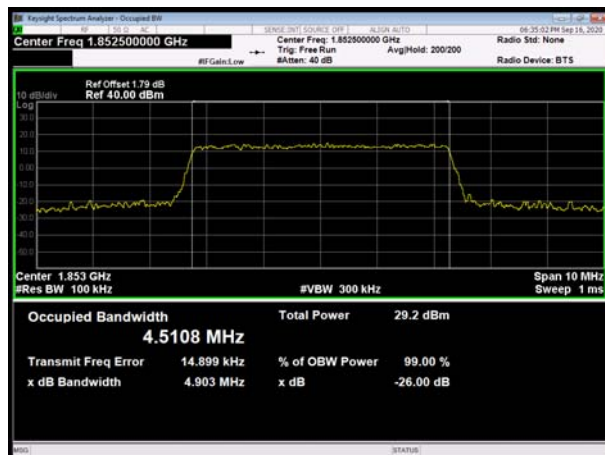


LTE Band 2 3MHz 16QAM CH-High

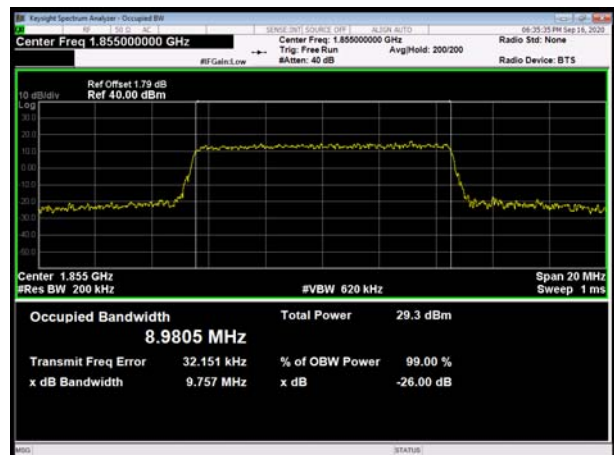




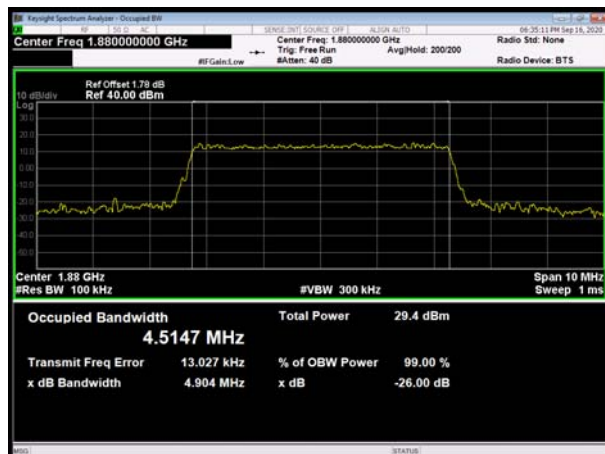
LTE Band 2 5MHz 16QAM CH-Low



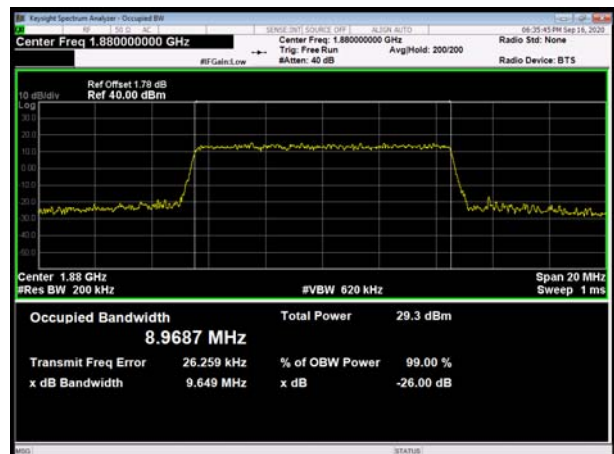
LTE Band 2 10MHz 16QAM CH-Low



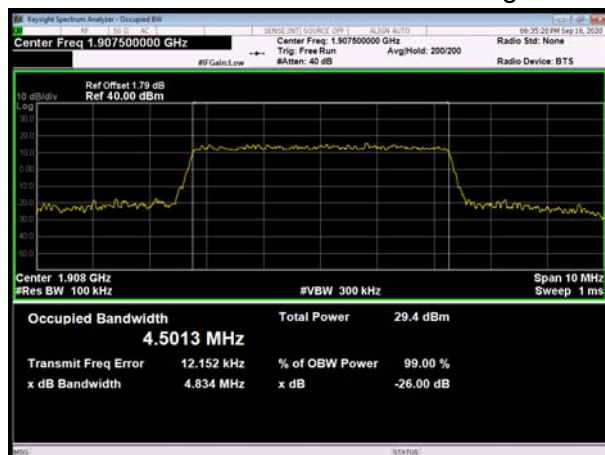
LTE Band 2 5MHz 16QAM CH-Middle



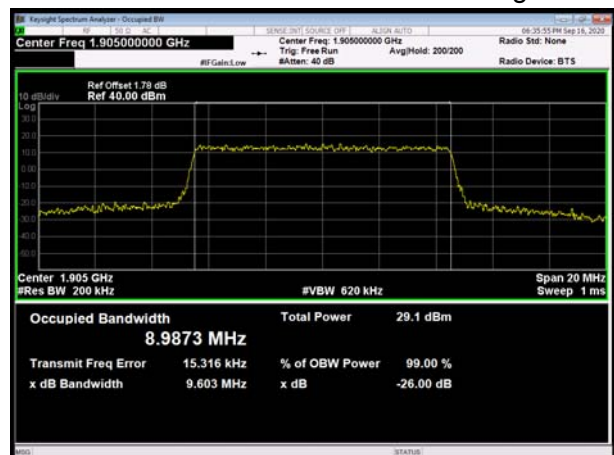
LTE Band 2 10MHz 16QAM CH-Middle



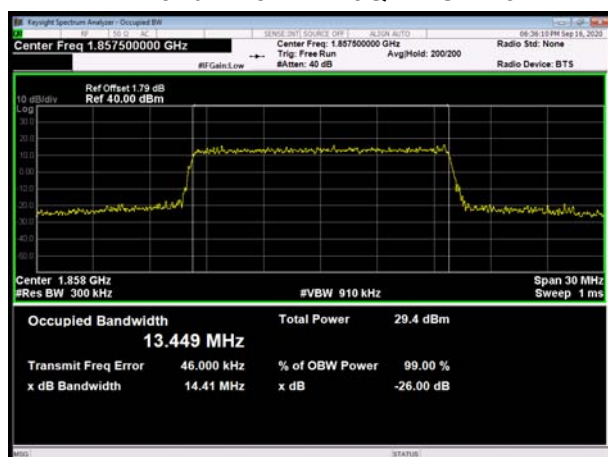
LTE Band 2 5MHz 16QAM CH-High



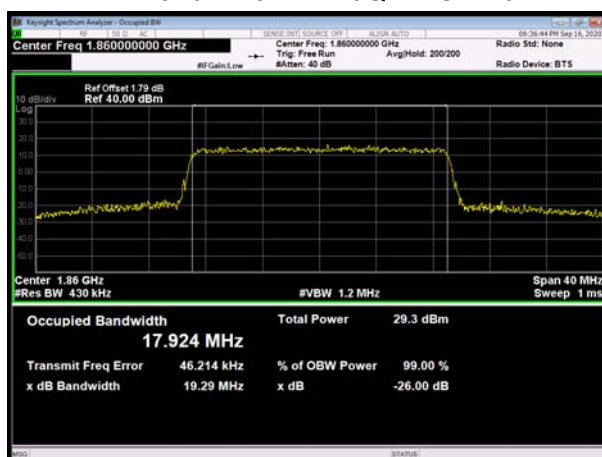
LTE Band 2 10MHz 16QAM CH-High



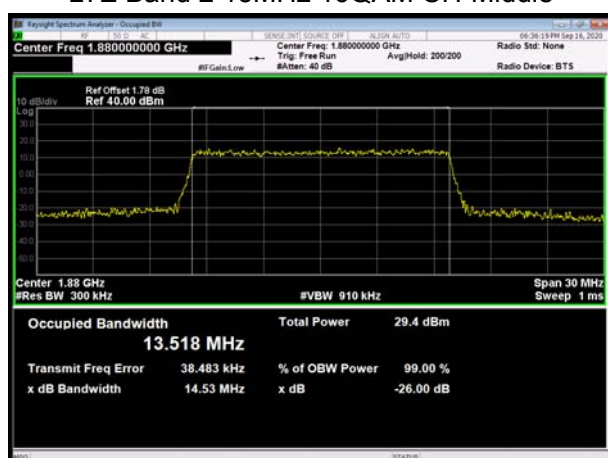
LTE Band 2 15MHz 16QAM CH-Low



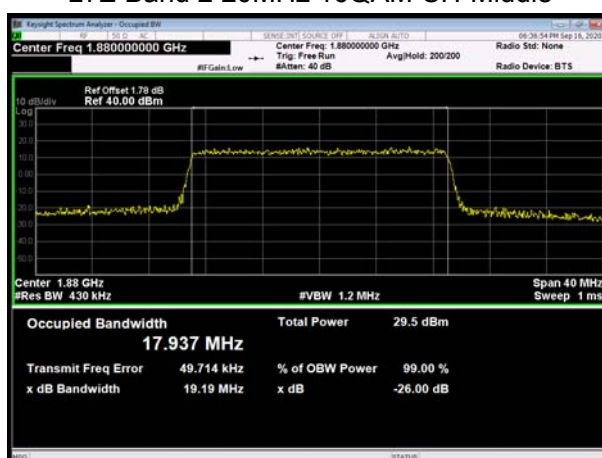
LTE Band 2 20MHz 16QAM CH-Low



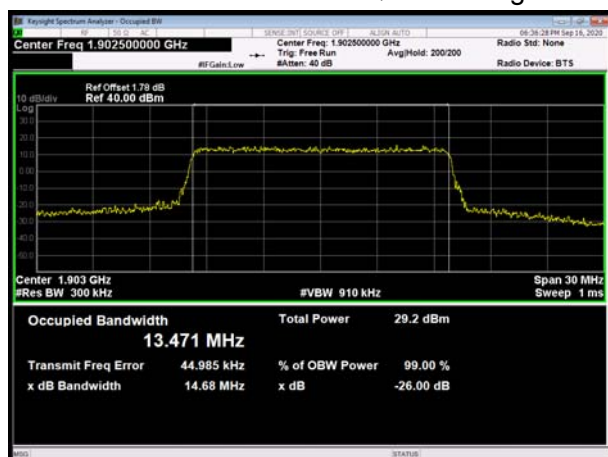
LTE Band 2 15MHz 16QAM CH-Middle



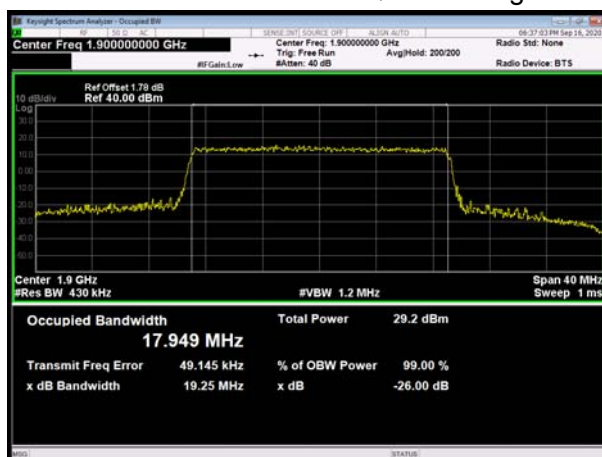
LTE Band 2 20MHz 16QAM CH-Middle



LTE Band 2 15MHz 16QAM CH-High

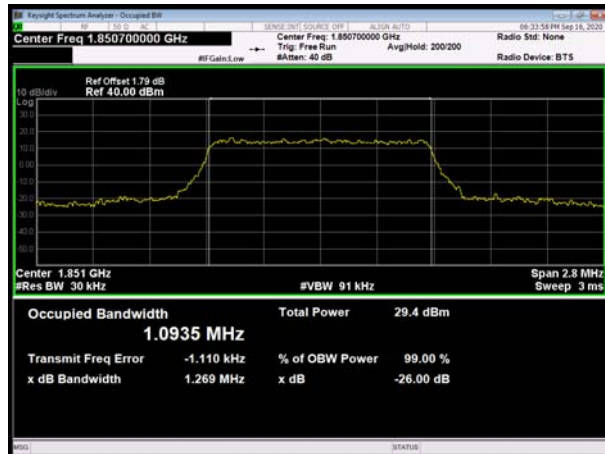


LTE Band 2 20MHz 16QAM CH-High





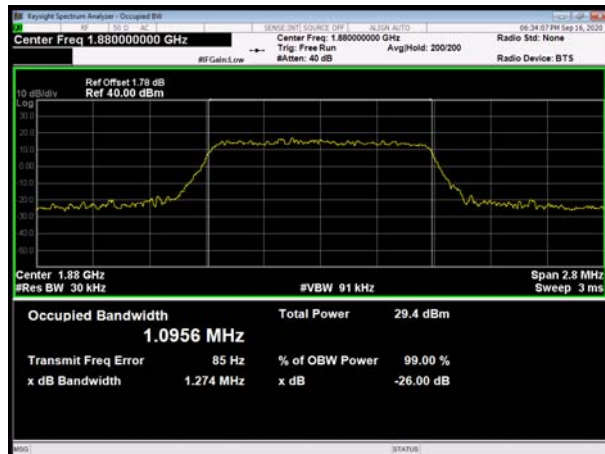
LTE Band 2 1.4MHz 64QAM CH-Low



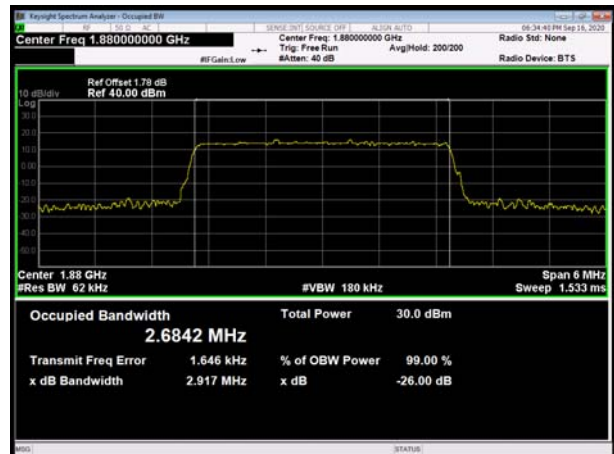
LTE Band 2 3MHz 64QAM CH-Low



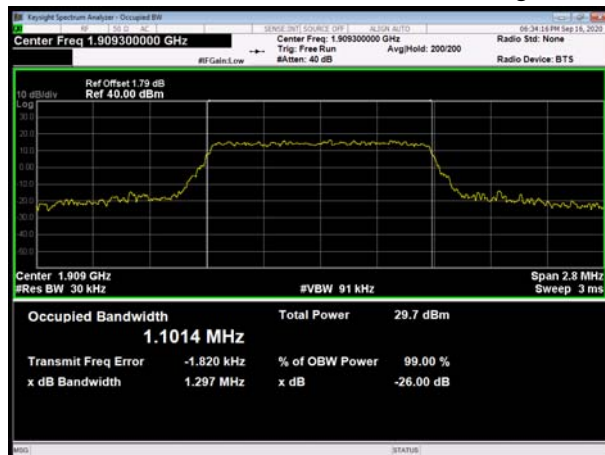
LTE Band 2 1.4MHz 64QAM CH-Middle



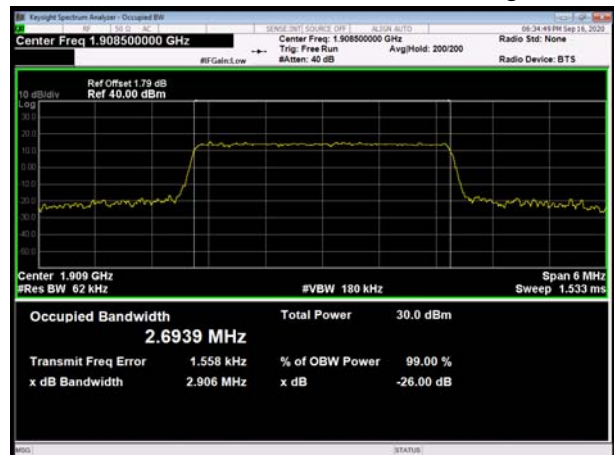
LTE Band 2 3MHz 64QAM CH-Middle



LTE Band 2 1.4MHz 64QAM CH-High

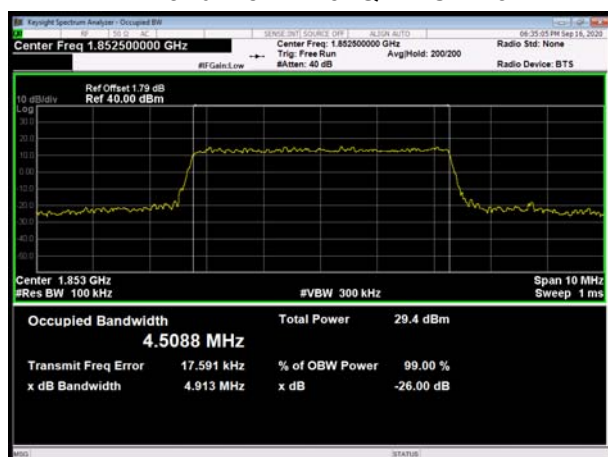


LTE Band 2 3MHz 64QAM CH-High

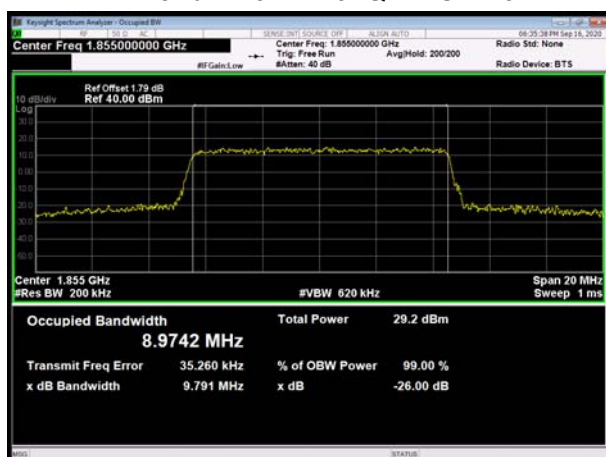




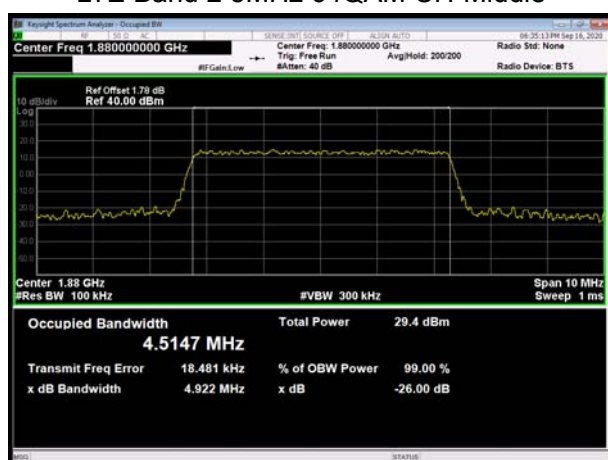
LTE Band 2 5MHz 64QAM CH-Low



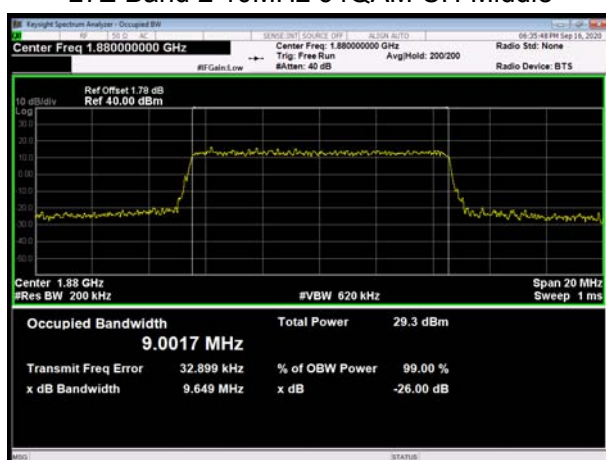
LTE Band 2 10MHz 64QAM CH-Low



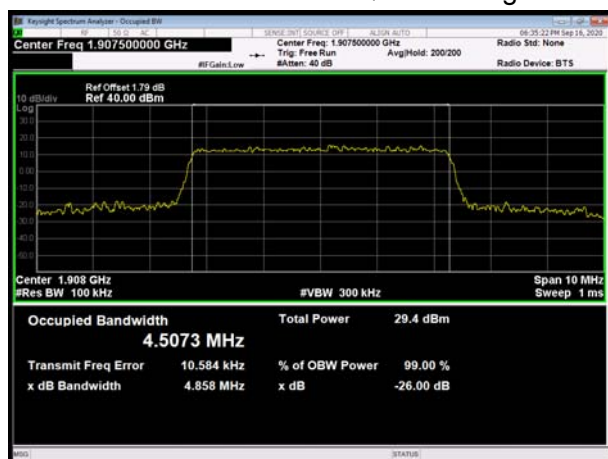
LTE Band 2 5MHz 64QAM CH-Middle



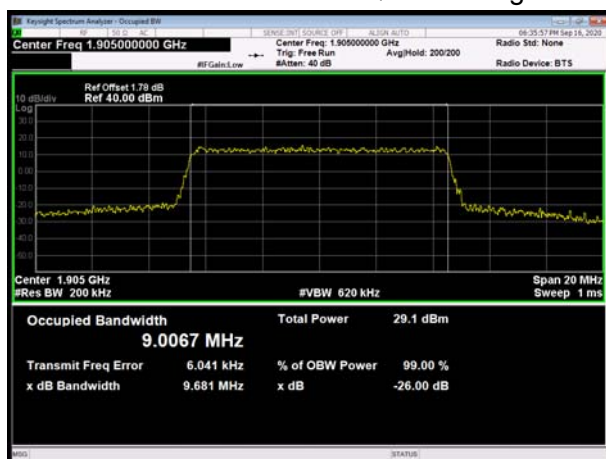
LTE Band 2 10MHz 64QAM CH-Middle



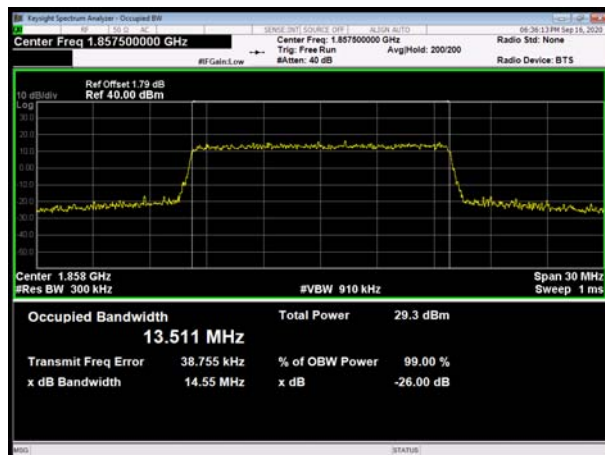
LTE Band 2 5MHz 64QAM CH-High



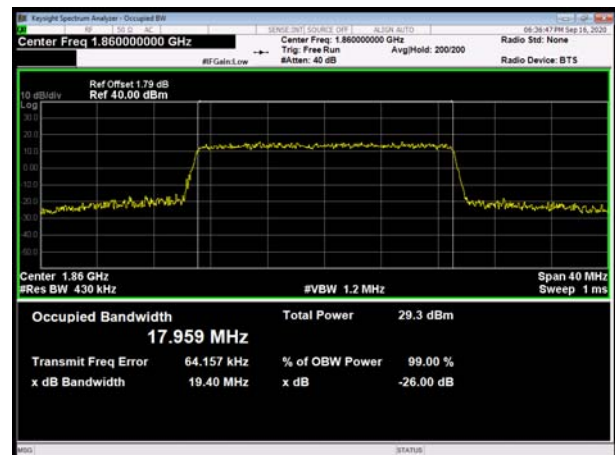
LTE Band 2 10MHz 64QAM CH-High



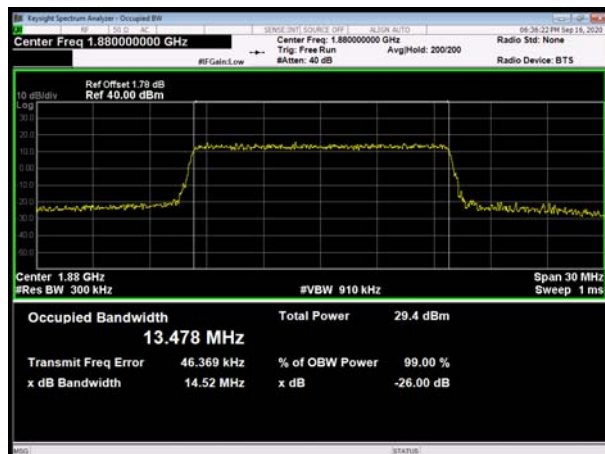
LTE Band 2 15MHz 64QAM CH-Low



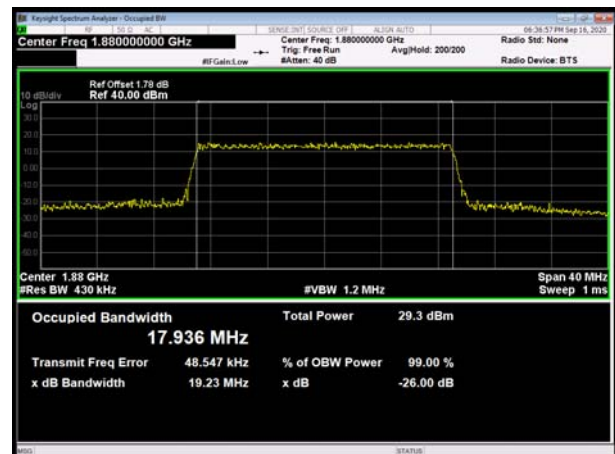
LTE Band 2 20MHz 64QAM CH-Low



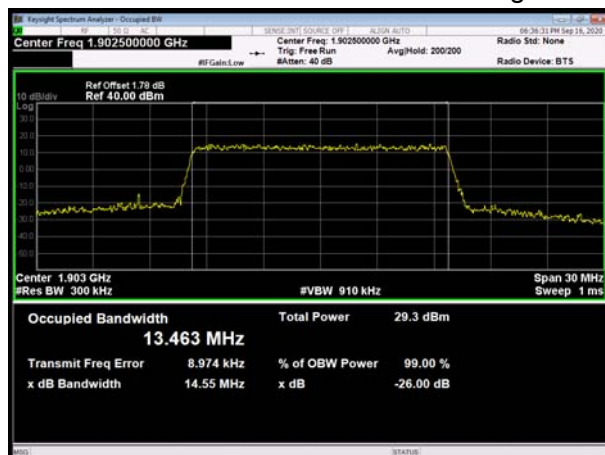
LTE Band 2 15MHz 64QAM CH-Middle



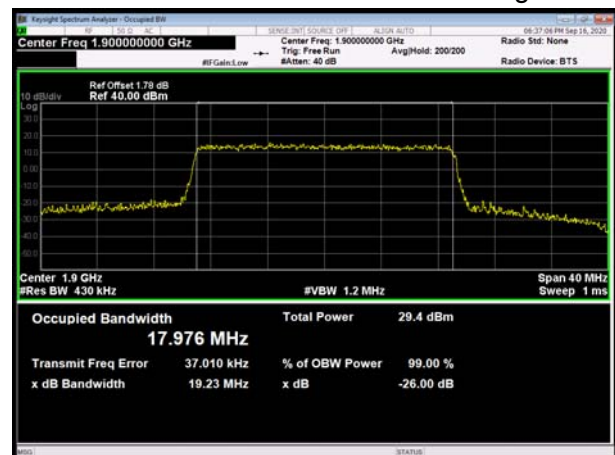
LTE Band 2 20MHz 64QAM CH-Middle



LTE Band 2 15MHz 64QAM CH-High



LTE Band 2 20MHz 64QAM CH-High



5.3.Band Edge Compliance

Ambient condition

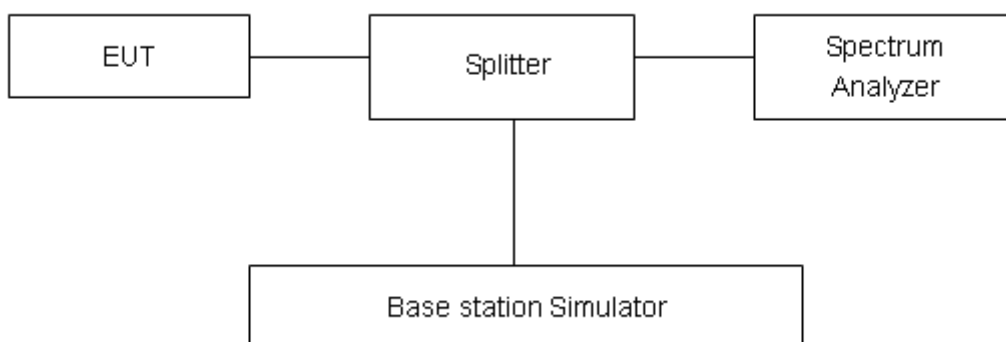
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured. The Average detector is used and RBW is set to 3kHz, VBW is set to 10kHz for GSM 1900, RBW is set to 51kHz, VBW is set to 160kHz for WCDMA Band II, RBW is set to 15kHz, VBW is set to 43kHz for LTE Band 2 (1.4MHz), RBW is set to 30kHz,VBW is set to 91kHz for LTE Band 2 (3MHz), RBW is set to 51kHz,VBW is set to 150kHz for LTE Band 2 (5MHz), RBW is set to 100kHz,VBW is set to 300kHz for LTE Band 2 (10MHz), RBW is set to 150kHz,VBW is set to 470kHz for LTE Band 2 (15MHz), RBW is set to 200kHz,VBW is set to 620kHz for LTE Band 2 (20MHz).

Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

Rule Part 24.238(a) specifies that “on any frequency outside a licensee’s frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10} (P)$ dB.”

Limit	-13 dBm
-------	---------

Measurement Uncertainty

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

Test Result:

Original

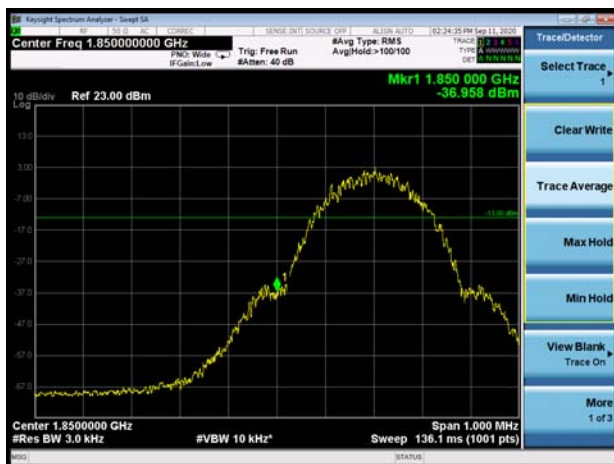
GSM1900 GSM CH-Low



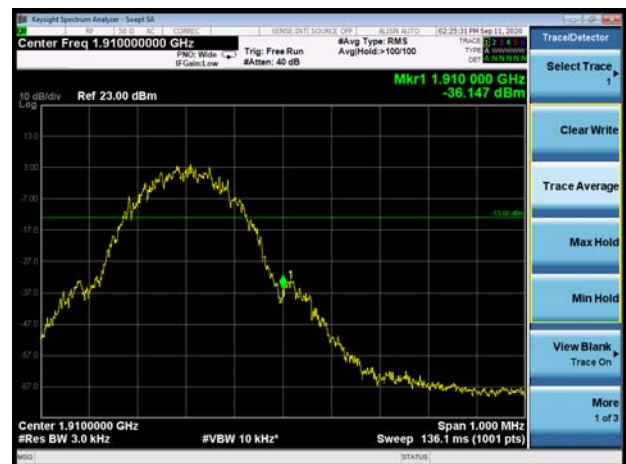
GSM 1900 GSM CH-High



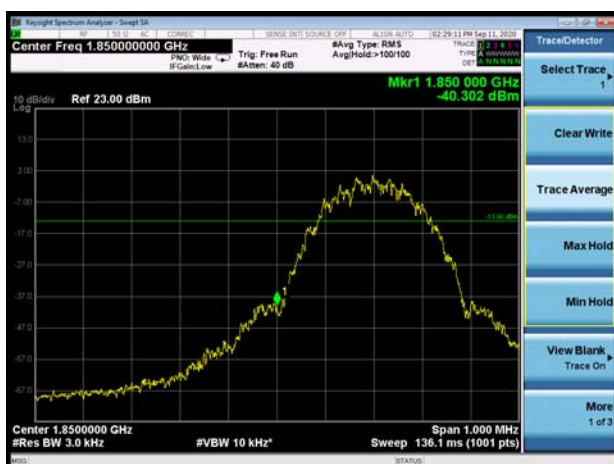
GSM1900 GPRS CH-Low



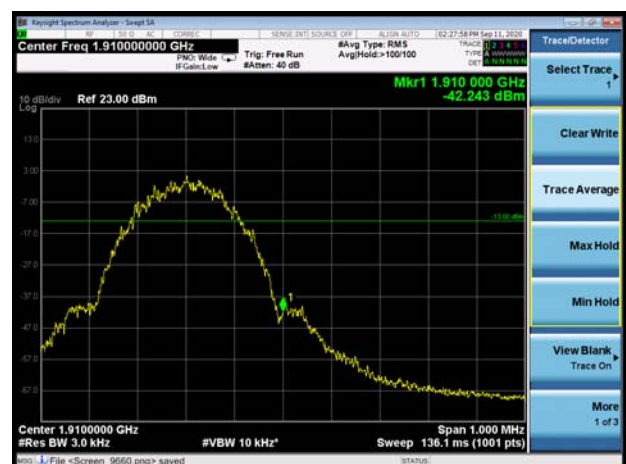
GSM 1900 GPRS CH-High



GSM1900 EGPRS CH-Low



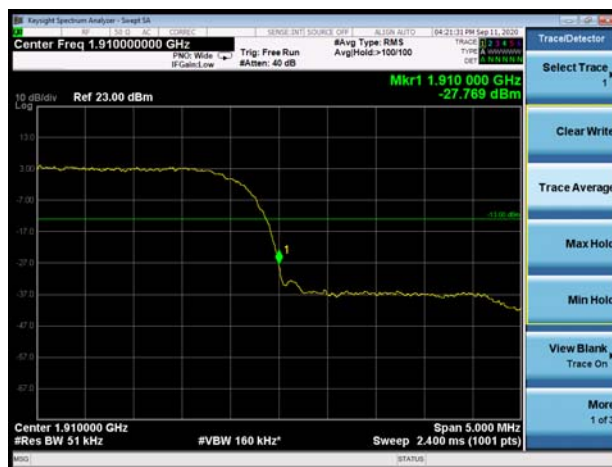
GSM 1900 EGPRS CH-High



WCDMA Band II RMC CH-Low

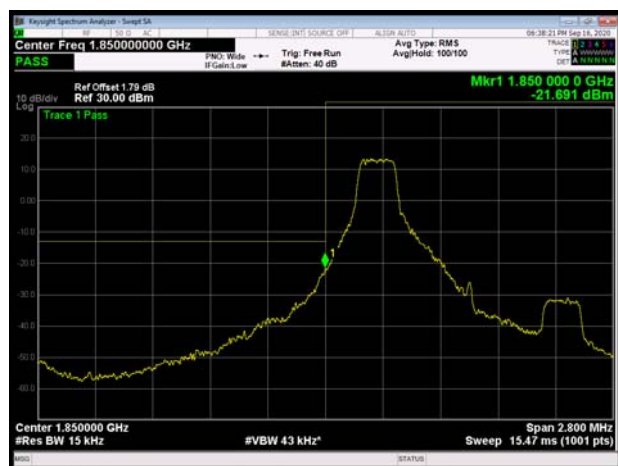


WCDMA Band II RMC CH-High

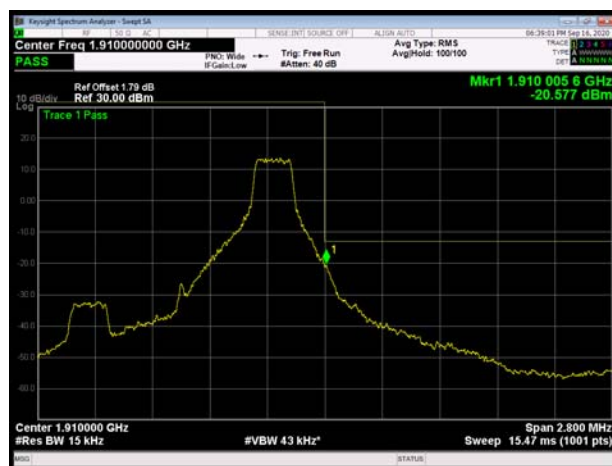


Variant

LTE Band 2 1.4MHz QPSK 1RB CH-Low



LTE Band 2 1.4MHz QPSK 1RB CH-High



LTE Band 2 1.4MHz QPSK 100%RB CH-Low

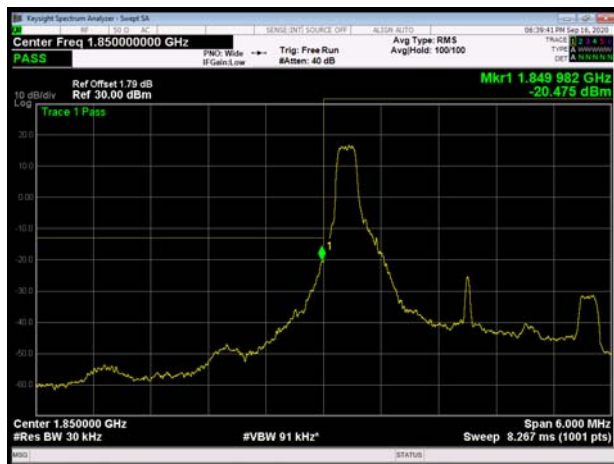


LTE Band 2 1.4MHz QPSK 100%RB CH-High

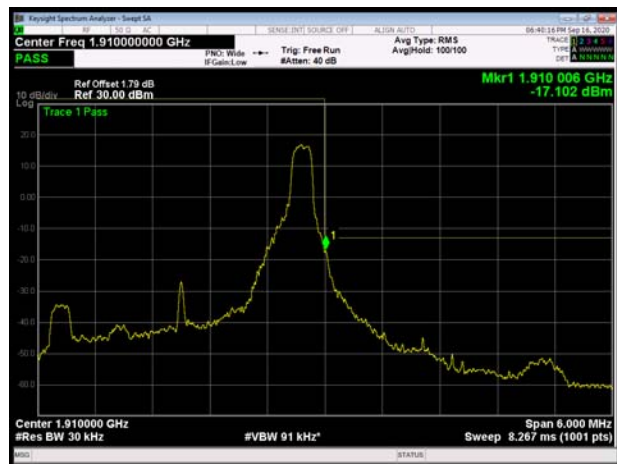




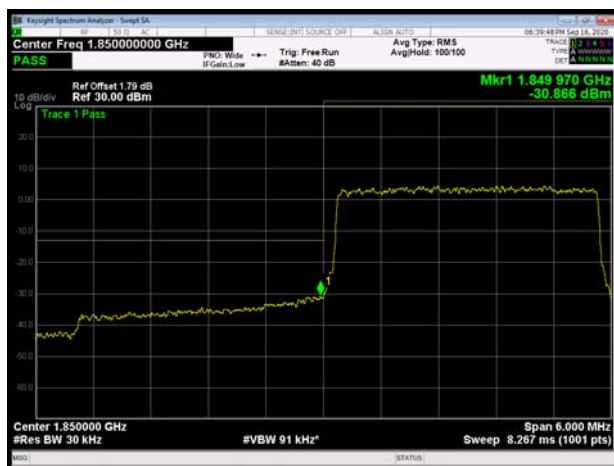
LTE Band 2 3MHz QPSK 1RB CH-Low



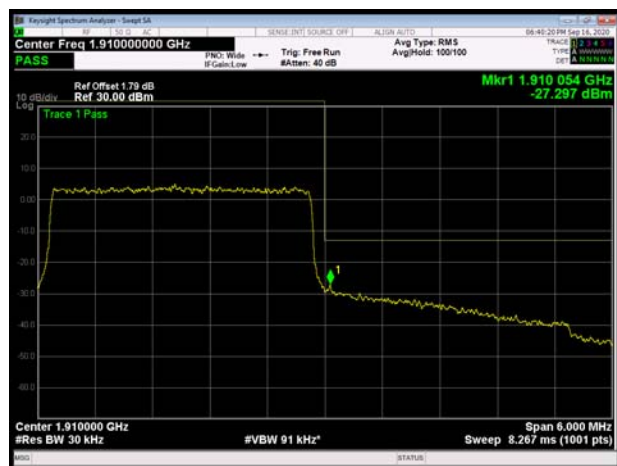
LTE Band 2 3MHz QPSK 1RB CH-High



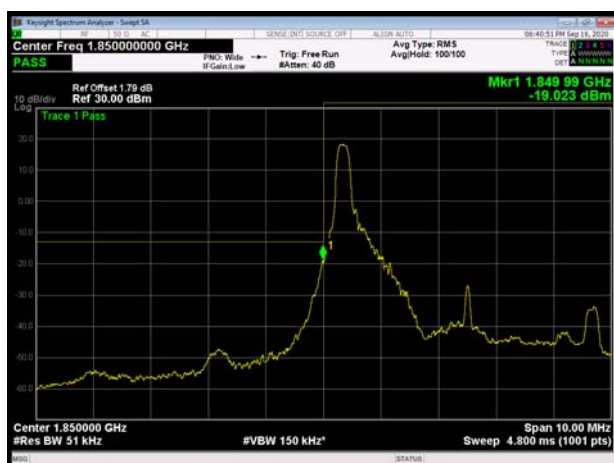
LTE Band 2 3MHz QPSK 100%RB CH-Low



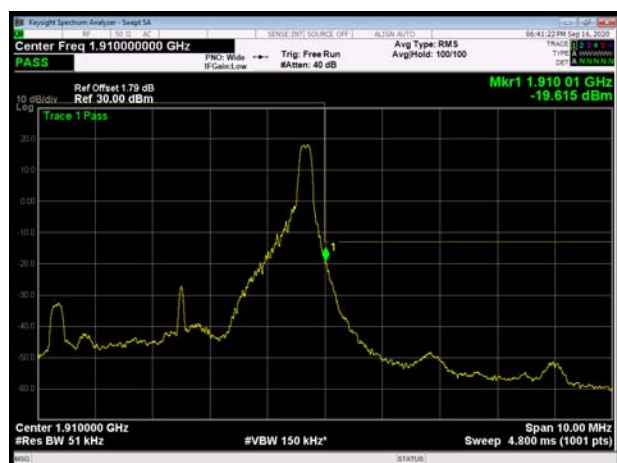
LTE Band 2 3MHz QPSK 100%RB CH-High



LTE Band 2 5MHz QPSK 1RB CH-Low



LTE Band 2 5MHz QPSK 1RB CH-High





LTE Band 2 5MHz QPSK 100%RB CH-Low



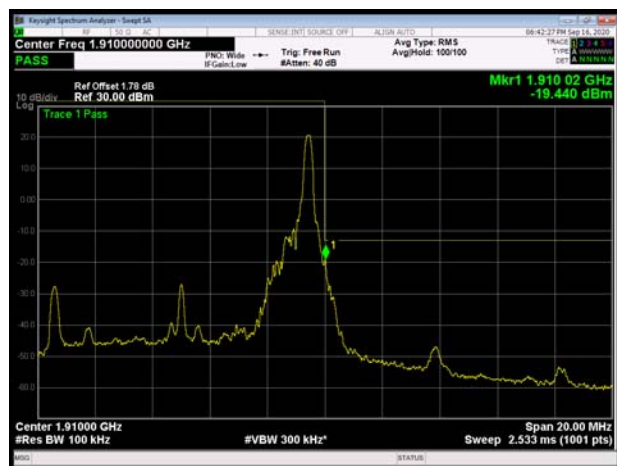
LTE Band 2 5MHz QPSK 100%RB CH-High



LTE Band 2 10MHz QPSK 1RB CH-Low



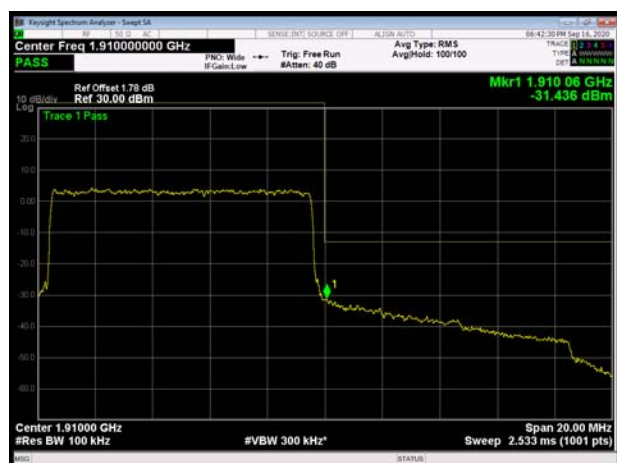
LTE Band 2 10MHz QPSK 1RB CH-High



LTE Band 2 10MHz QPSK 100%RB CH-Low



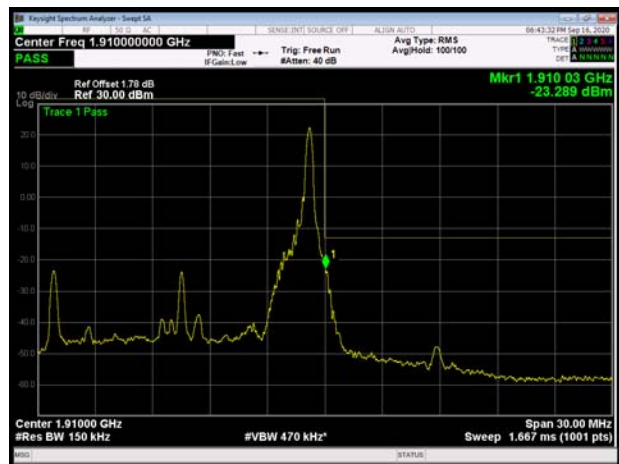
LTE Band 2 10MHz QPSK 100%RB CH-High



LTE Band 2 15MHz QPSK 1RB CH-Low



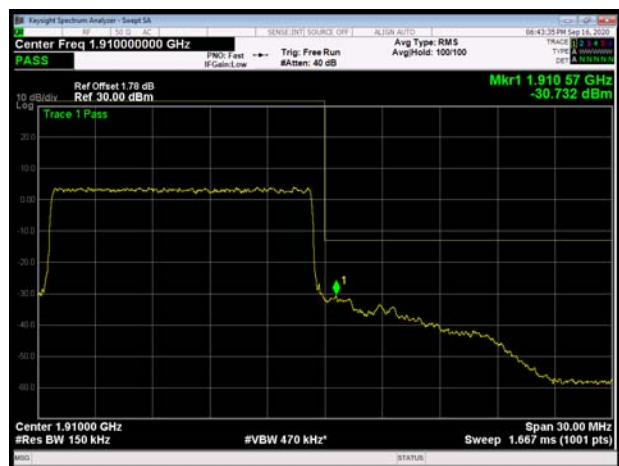
LTE Band 2 15MHz QPSK 1RB CH-High



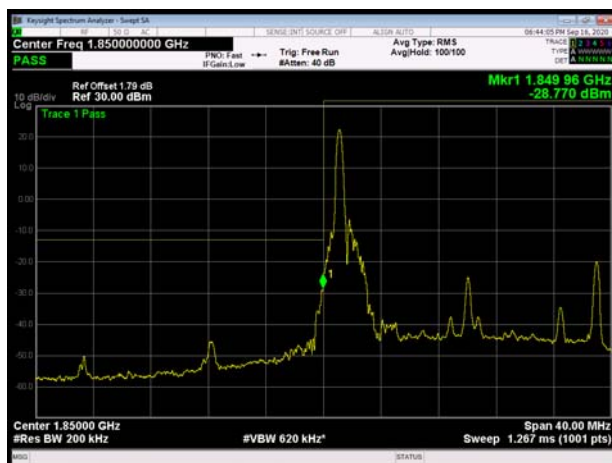
LTE Band 2 15MHz QPSK 100%RB CH-Low



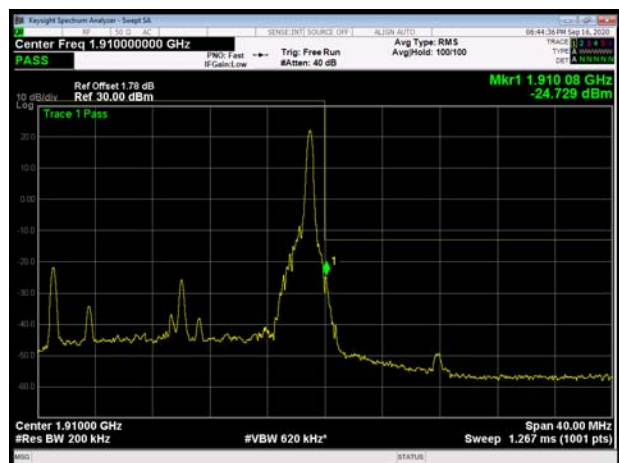
LTE Band 2 15MHz QPSK 100%RB CH-High



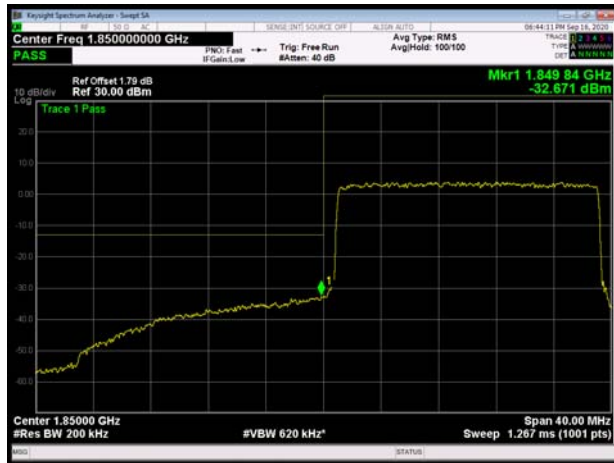
LTE Band 2 20MHz QPSK 1RB CH-Low



LTE Band 2 20MHz QPSK 1RB CH-High



LTE Band 2 20MHz QPSK 100%RB CH-Low



LTE Band 2 20MHz QPSK 100%RB CH-High



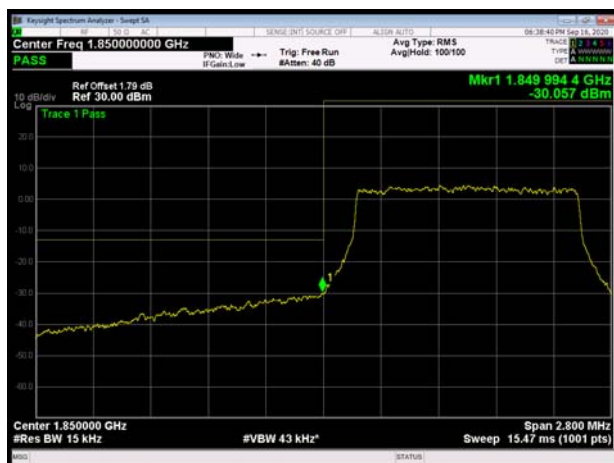
LTE Band 2 1.4MHz 16QAM 1RB CH-Low



LTE Band 2 1.4MHz 16QAM 1RB CH-High



LTE Band 2 1.4MHz 16QAM 100%RB CH-Low

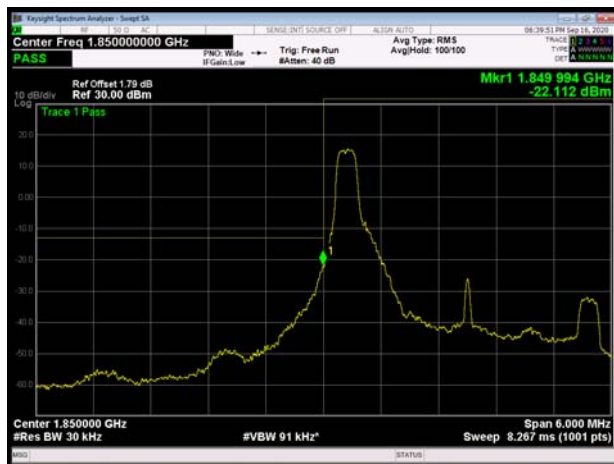


LTE Band 2 1.4MHz 16QAM 100%RB CH-High

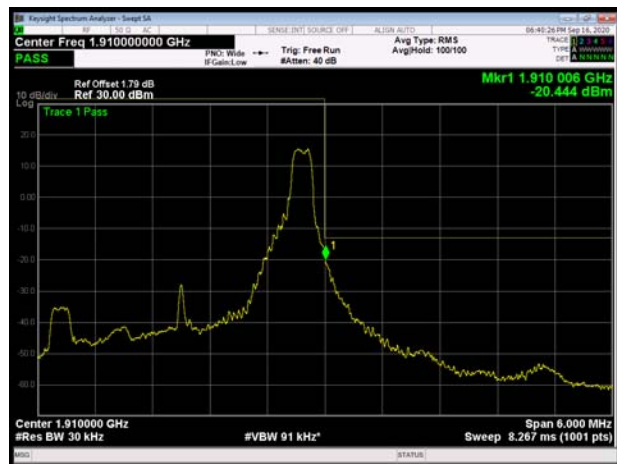




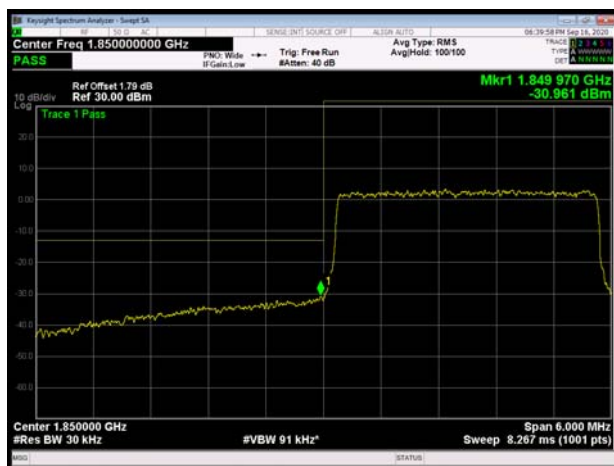
LTE Band 2 3MHz 16QAM 1RB CH-Low



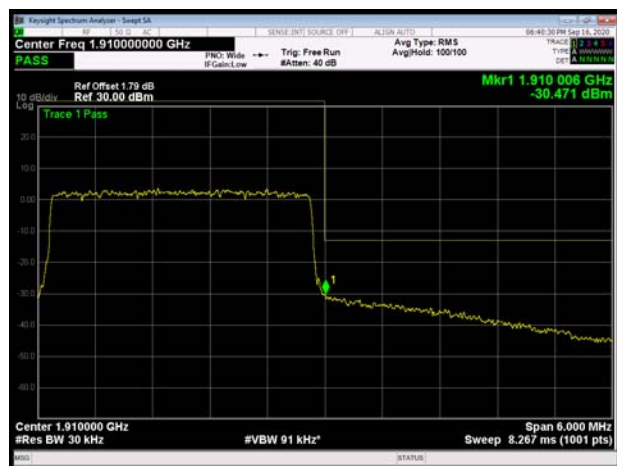
LTE Band 2 3MHz 16QAM 1RB CH-High



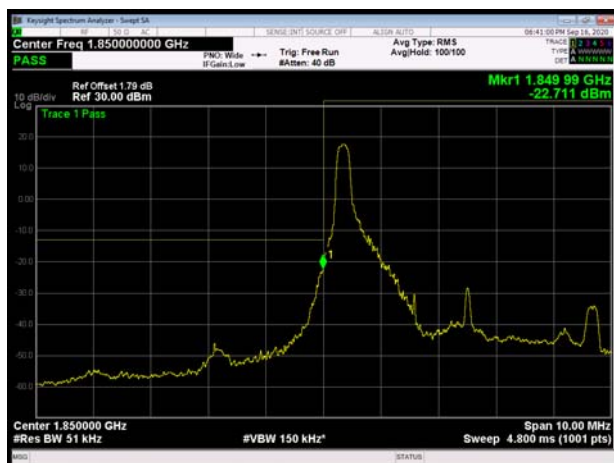
LTE Band 2 3MHz 16QAM 100%RB CH-Low



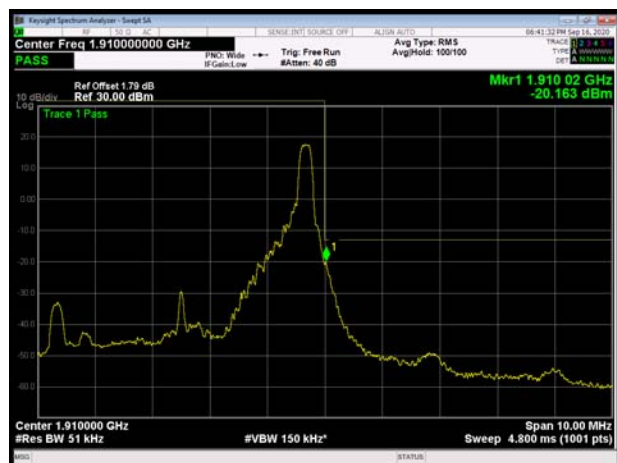
LTE Band 2 3MHz 16QAM 100%RB CH-High



LTE Band 2 5MHz 16QAM 1RB CH-Low

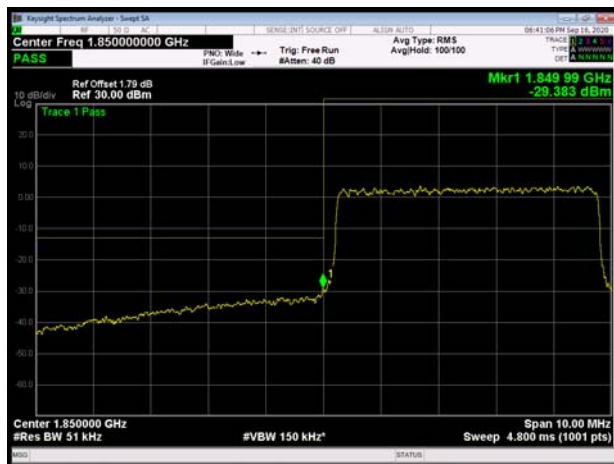


LTE Band 2 5MHz 16QAM 1RB CH-High





LTE Band 2 5MHz 16QAM 100%RB CH-Low



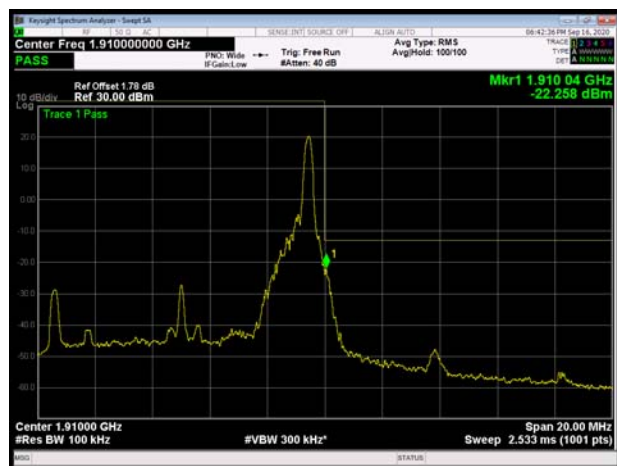
LTE Band 2 5MHz 16QAM 100%RB CH-High



LTE Band 2 10MHz 16QAM 1RB CH-Low



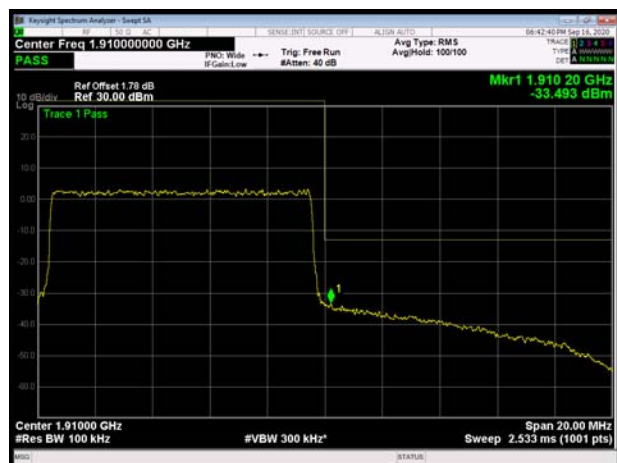
LTE Band 2 10MHz 16QAM 1RB CH-High



LTE Band 2 10MHz 16QAM 100%RB CH-Low



LTE Band 2 10MHz 16QAM 100%RB CH-High

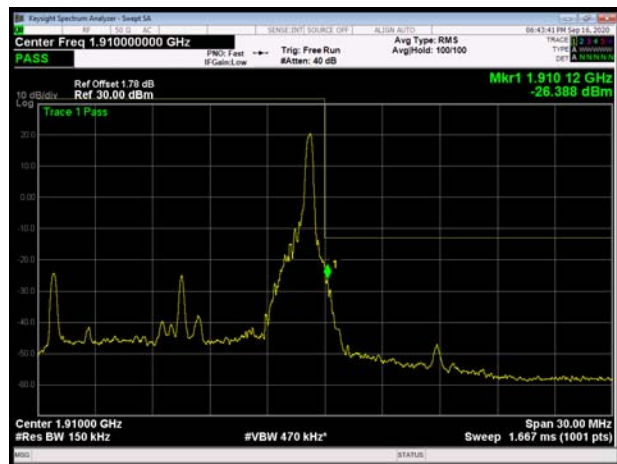




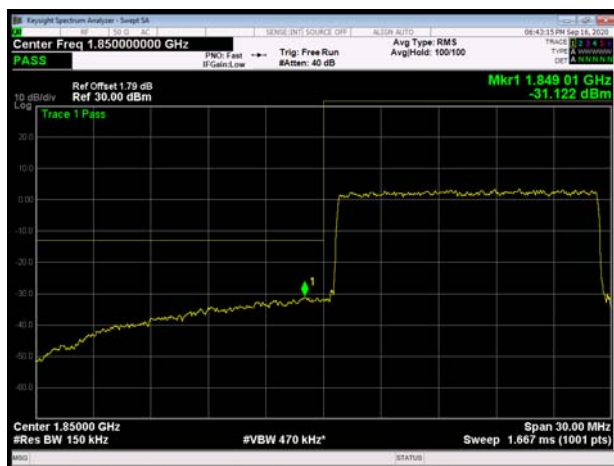
LTE Band 2 15MHz 16QAM 1RB CH-Low



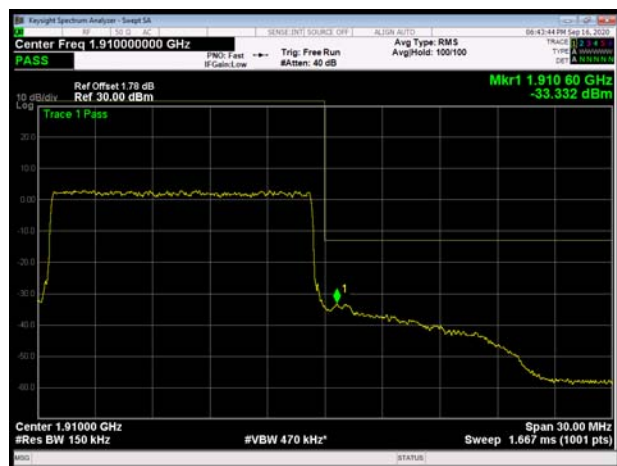
LTE Band 2 15MHz 16QAM 1RB CH-High



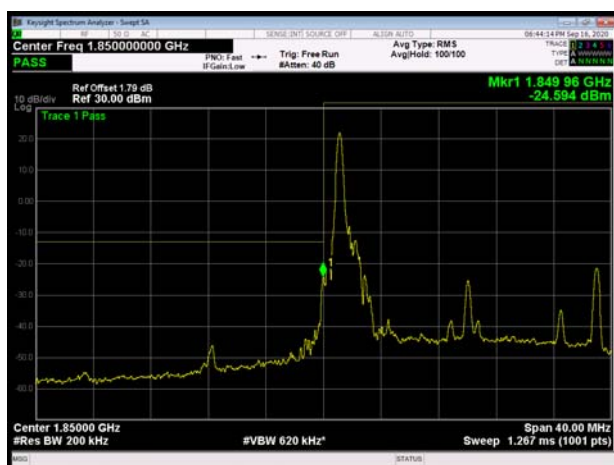
LTE Band 2 15MHz 16QAM 100%RB CH-Low



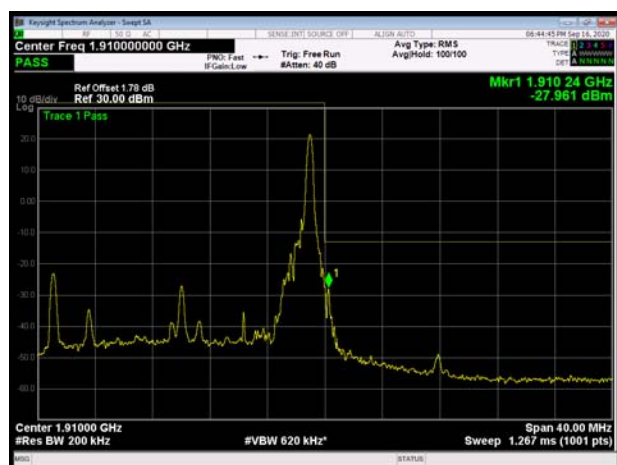
LTE Band 2 15MHz 16QAM 100%RB CH-High



LTE Band 2 20MHz 16QAM 1RB CH-Low



LTE Band 2 20MHz 16QAM 1RB CH-High





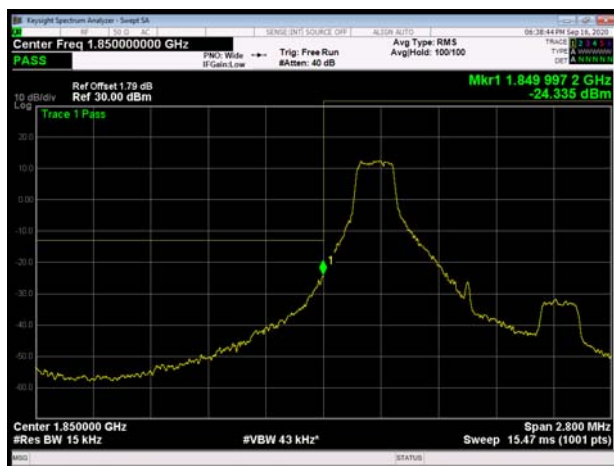
LTE Band 2 20MHz 16QAM 100%RB CH-Low



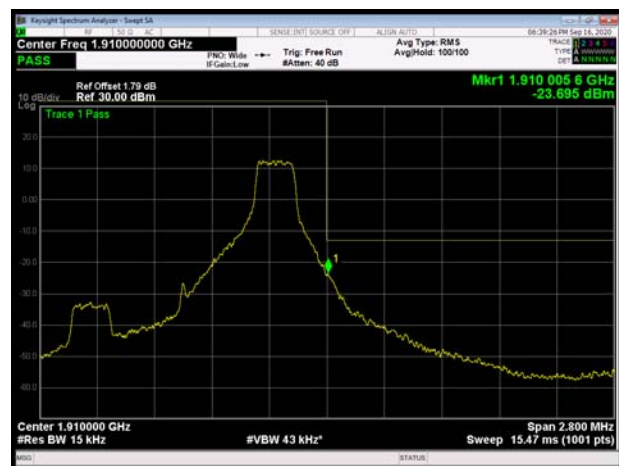
LTE Band 2 20MHz 16QAM 100%RB CH-High



LTE Band 2 1.4MHz 64QAM 1RB CH-Low



LTE Band 2 1.4MHz 64QAM 1RB CH-High



LTE Band 2 1.4MHz 64QAM 100%RB CH-Low



LTE Band 2 1.4MHz 64QAM 100%RB CH-High

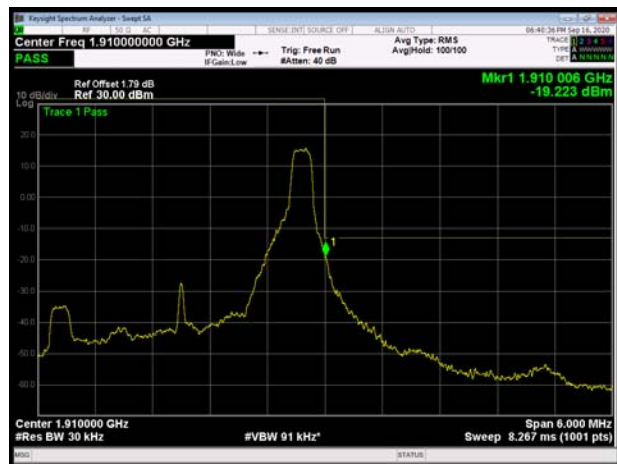




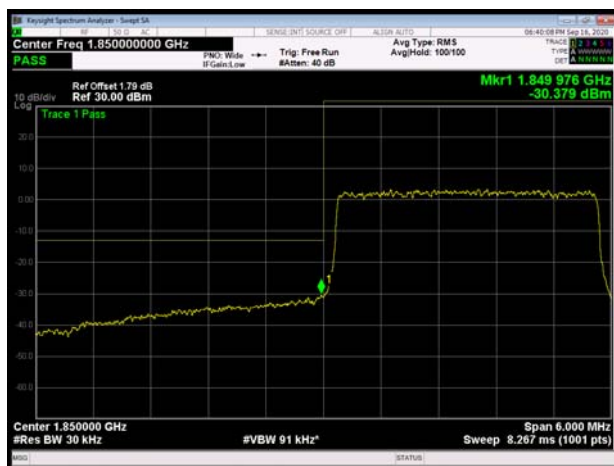
LTE Band 2 3MHz 64QAM 1RB CH-Low



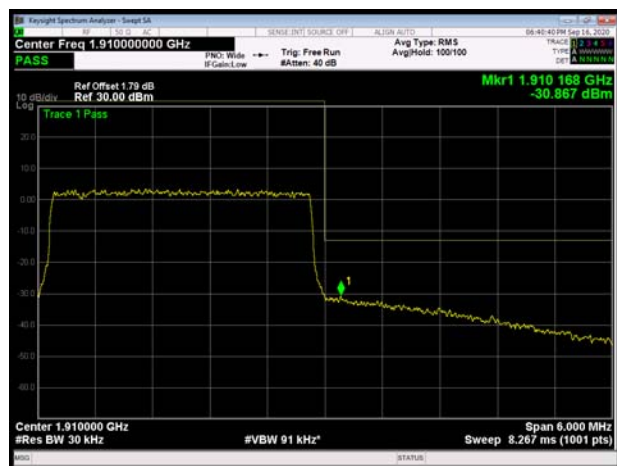
LTE Band 2 3MHz 64QAM 1RB CH-High



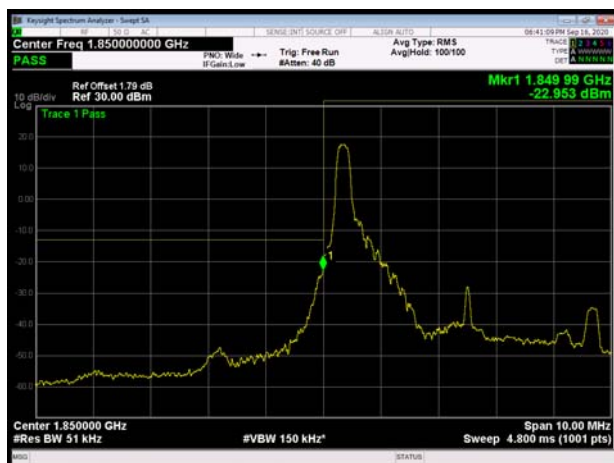
LTE Band 2 3MHz 64QAM 100%RB CH-Low



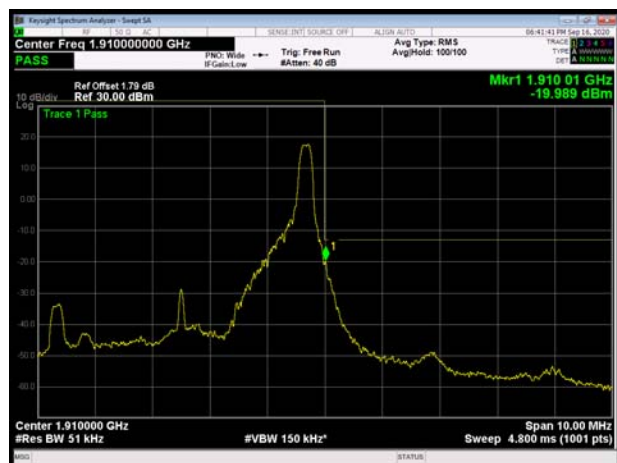
LTE Band 2 3MHz 64QAM 100%RB CH-High



LTE Band 2 5MHz 64QAM 1RB CH-Low



LTE Band 2 5MHz 64QAM 1RB CH-High





LTE Band 2 5MHz 64QAM 100%RB CH-Low



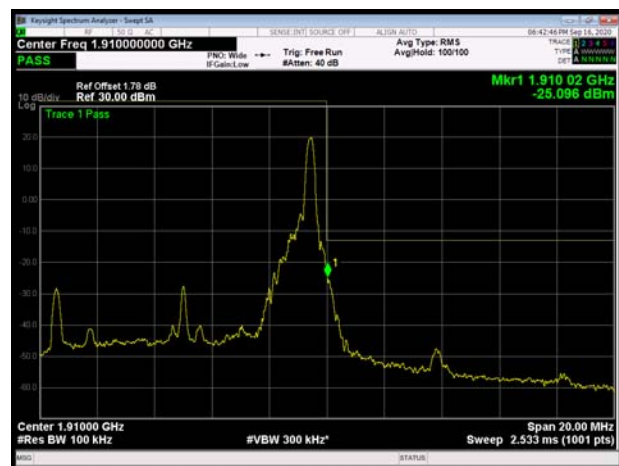
LTE Band 2 5MHz 64QAM 100%RB CH-High



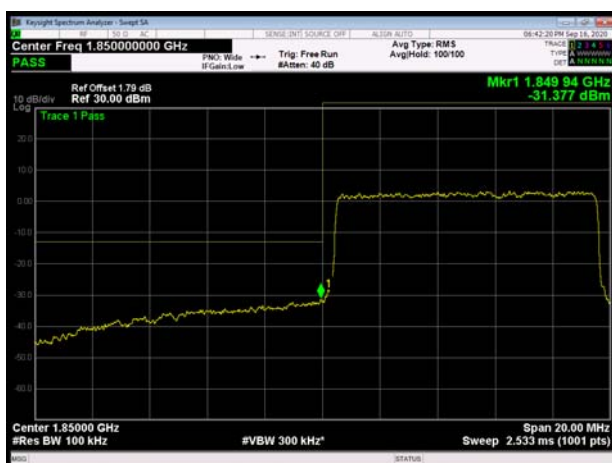
LTE Band 2 10MHz 64QAM 1RB CH-Low



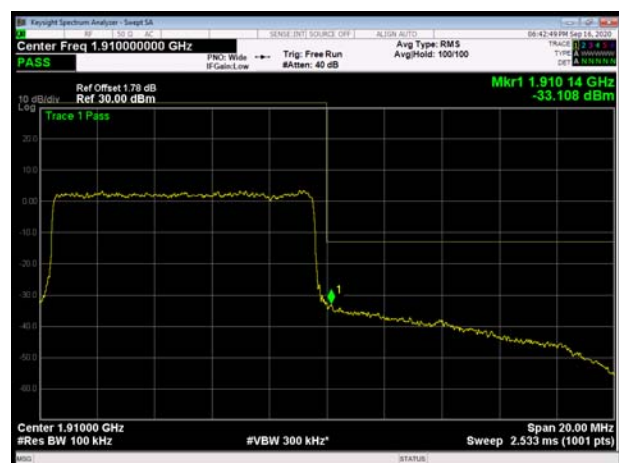
LTE Band 2 10MHz 64QAM 1RB CH-High



LTE Band 2 10MHz 64QAM 100%RB CH-Low



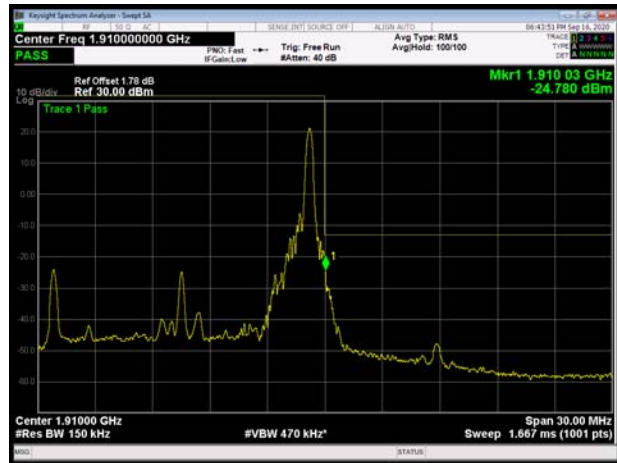
LTE Band 2 10MHz 64QAM 100%RB CH-High



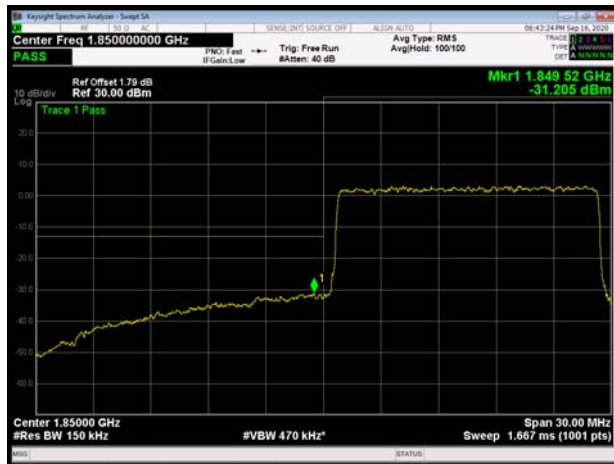
LTE Band 2 15MHz 64QAM 1RB CH-Low



LTE Band 2 15MHz 64QAM 1RB CH-High



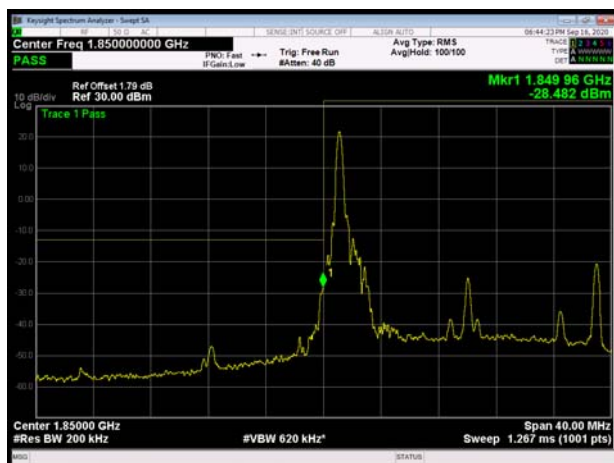
LTE Band 2 15MHz 64QAM 100%RB CH-Low



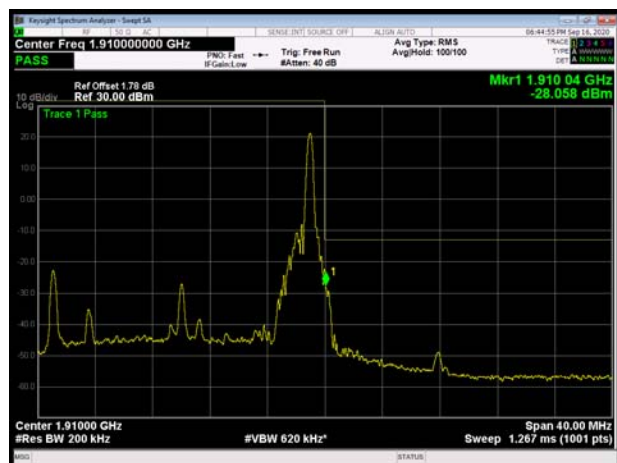
LTE Band 2 15MHz 64QAM 100%RB CH-High



LTE Band 2 20MHz 64QAM 1RB CH-Low

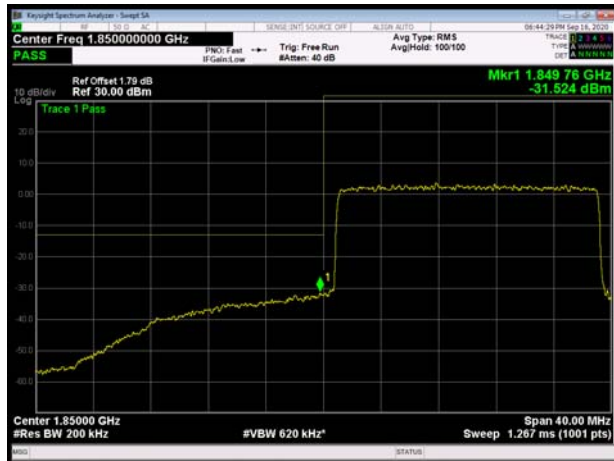


LTE Band 2 20MHz 64QAM 1RB CH-High

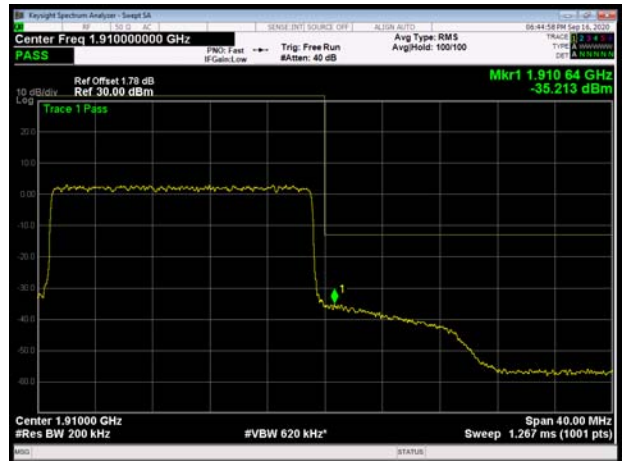




LTE Band 2 20MHz 64QAM 100%RB CH-Low



LTE Band 2 20MHz 64QAM 100%RB CH-High



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

Ambient condition

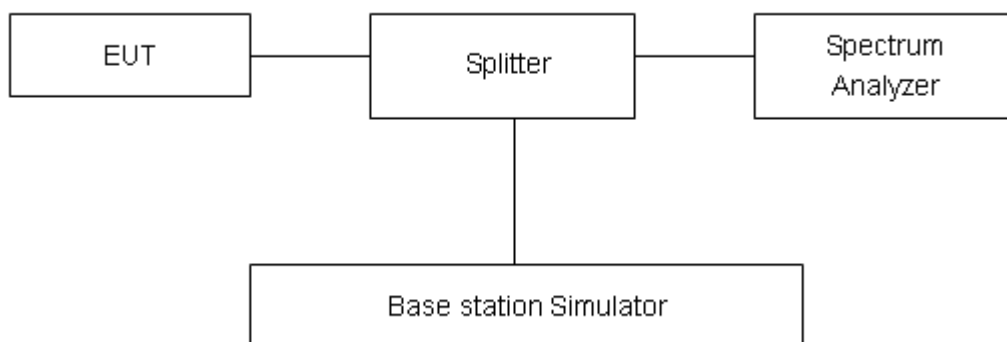
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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:

$$\text{PAPR (dB)} = \text{PPk (dBm)} - \text{PAvg (dBm)}.$$

Test Setup



Limits

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 in 24.232(d).

Measurement Uncertainty

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

Test Results
Original

Mode	Channel	Frequency (MHz)	Peak(dBm)	Avg(dBm)	PAPR(dB)	Limit(dB)	Conclusion
GSM 1900 (GMSK)	512	1850.2	31.41	29.55	1.86	≤13	PASS
	661	1880	31.40	29.56	1.84	≤13	PASS
	810	1909.8	31.28	29.55	1.73	≤13	PASS
GPRS 1900 (GMSK)	512	1850.2	31.35	29.44	1.91	≤13	PASS
	661	1880	31.45	29.63	1.82	≤13	PASS
	810	1909.8	31.33	29.48	1.85	≤13	PASS
EGPRS 1900 (8PSK)	512	1850.2	27.95	25.71	2.24	≤13	PASS
	661	1880	27.83	25.67	2.16	≤13	PASS
	810	1909.8	27.89	25.58	2.31	≤13	PASS
WCDMA Band II (RMC)	9262	1852.4	24.60	21.69	2.91	≤13	PASS
	9400	1880	24.64	21.70	2.94	≤13	PASS
	9538	1907.6	24.33	21.47	2.86	≤13	PASS

Variant

LTE Band 2								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	18607	1850.7	27.35	22.42	4.93	≤13	PASS
		18900	1880.0	27.27	22.38	4.89	≤13	PASS
		19193	1909.3	26.62	22.49	4.13	≤13	PASS
	3	18615	1851.5	27.38	22.37	5.01	≤13	PASS
		18900	1880	27.26	22.36	4.90	≤13	PASS
		19185	1908.5	26.85	22.39	4.46	≤13	PASS
	5	18625	1852.5	27.45	22.39	5.06	≤13	PASS
		18900	1880	27.39	22.38	5.01	≤13	PASS
		19175	1907.5	27.07	22.37	4.70	≤13	PASS
	10	18650	1855	27.42	22.43	4.99	≤13	PASS
		18900	1880	27.49	22.44	5.05	≤13	PASS
		19150	1905	27.32	22.37	4.95	≤13	PASS
	15	18675	1857.5	27.68	22.45	5.23	≤13	PASS
		18900	1880	27.85	22.48	5.37	≤13	PASS
		19125	1902.5	27.75	22.42	5.33	≤13	PASS
	20	18700	1860	27.50	22.32	5.18	≤13	PASS
		18900	1880	27.70	22.42	5.28	≤13	PASS



16QAM	1.4	19100	1900	27.55	22.30	5.25	≤13	PASS
		18607	1850.7	27.32	21.47	5.85	≤13	PASS
		18900	1880.0	27.11	21.31	5.80	≤13	PASS
		19193	1909.3	26.52	21.44	5.08	≤13	PASS
	3	18615	1851.5	27.14	21.37	5.77	≤13	PASS
		18900	1880	27.13	21.32	5.81	≤13	PASS
		19185	1908.5	26.76	21.38	5.38	≤13	PASS
	5	18625	1852.5	27.25	21.37	5.88	≤13	PASS
		18900	1880	27.24	21.38	5.86	≤13	PASS
		19175	1907.5	26.88	21.35	5.53	≤13	PASS
	10	18650	1855	27.22	21.40	5.82	≤13	PASS
		18900	1880	27.28	21.39	5.89	≤13	PASS
		19150	1905	27.16	21.37	5.79	≤13	PASS
	15	18675	1857.5	27.34	21.38	5.96	≤13	PASS
		18900	1880	27.48	21.45	6.03	≤13	PASS
		19125	1902.5	27.35	21.31	6.04	≤13	PASS
	20	18700	1860	27.34	21.34	6.00	≤13	PASS
		18900	1880	27.44	21.39	6.05	≤13	PASS
		19100	1900	27.31	21.28	6.03	≤13	PASS
64QAM	1.4	18607	1850.7	27.30	21.48	5.82	≤13	PASS
		18900	1880.0	27.15	21.35	5.80	≤13	PASS
		19193	1909.3	26.55	21.48	5.07	≤13	PASS
	3	18615	1851.5	27.30	21.35	5.95	≤13	PASS
		18900	1880	27.14	21.33	5.81	≤13	PASS
		19185	1908.5	26.78	21.39	5.39	≤13	PASS
	5	18625	1852.5	27.26	21.38	5.88	≤13	PASS
		18900	1880	27.19	21.36	5.83	≤13	PASS
		19175	1907.5	26.88	21.33	5.55	≤13	PASS
	10	18650	1855	27.23	21.40	5.83	≤13	PASS
		18900	1880	27.26	21.41	5.85	≤13	PASS
		19150	1905	27.15	21.36	5.79	≤13	PASS
	15	18675	1857.5	27.30	21.35	5.95	≤13	PASS
		18900	1880	27.31	21.32	5.99	≤13	PASS
		19125	1902.5	27.33	21.33	6.00	≤13	PASS
	20	18700	1860	27.39	21.32	6.07	≤13	PASS
		18900	1880	27.44	21.39	6.05	≤13	PASS
		19100	1900	27.29	21.30	5.99	≤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 0°C and permitted to stabilize for three hours.

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

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

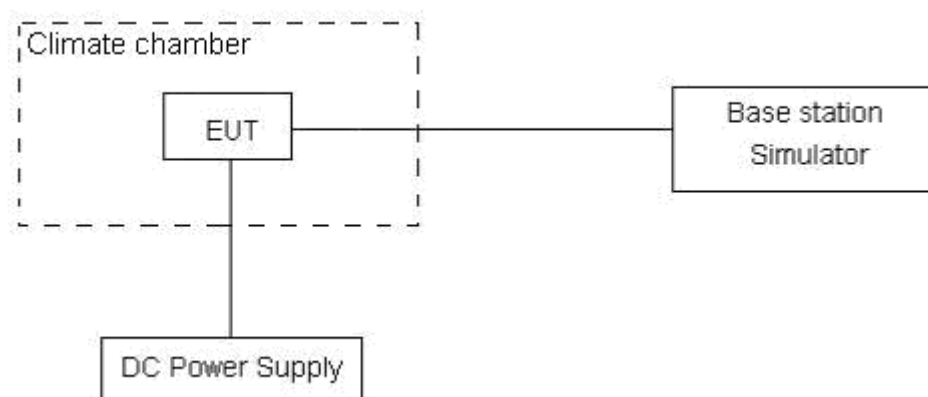
Frequency Stability (Voltage Variation)

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

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

This transceiver is specified to operate with an input voltage of between 3.23 V and 4.37 V, with a nominal voltage of 3.8V.

Test setup



Limits

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block

Measurement Uncertainty

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

Test Result
Original

GSM1900						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
Temperature	Voltage	GMSK	8PSK	GMSK	8PSK	
Normal (25℃)	Normal	14.16	4.96	0.00753	0.00264	PASS
Extreme (50℃)		9.07	16.45	0.00482	0.00875	PASS
Extreme (40℃)		15.20	6.03	0.00809	0.00321	PASS
Extreme (30℃)		1.73	11.51	0.00092	0.00612	PASS
Extreme (20℃)		8.58	12.49	0.00457	0.00665	PASS
Extreme (10℃)		14.54	1.20	0.00774	0.00064	PASS
Extreme (0℃)		13.14	12.45	0.00699	0.00662	PASS
Extreme (-10℃)		7.56	3.99	0.00402	0.00212	PASS
Extreme (-20℃)		16.23	3.61	0.00863	0.00192	PASS
Extreme (-30℃)		12.65	7.73	0.00673	0.00411	PASS
25℃	LV	15.13	4.44	0.00805	0.00236	PASS
	HV	12.26	8.36	0.00652	0.00445	PASS

WCDMA Band II						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
Temperature	Voltage	BPSK	QPSK	BPSK	QPSK	
Normal (25℃)	Normal	7.00	6.86	0.00372	0.00365	PASS
Extreme (50℃)		12.04	17.49	0.00640	0.00930	PASS
Extreme (40℃)		8.05	6.68	0.00428	0.00355	PASS
Extreme (30℃)		1.77	8.80	0.00094	0.00468	PASS
Extreme (20℃)		5.56	17.91	0.00296	0.00953	PASS
Extreme (10℃)		8.16	4.31	0.00434	0.00229	PASS
Extreme (0℃)		7.66	17.15	0.00407	0.00912	PASS
Extreme (-10℃)		8.10	17.18	0.00431	0.00914	PASS
Extreme (-20℃)		15.29	12.44	0.00813	0.00662	PASS
Extreme (-30℃)		6.01	15.37	0.00320	0.00817	PASS
25℃	LV	4.44	4.40	0.00236	0.00234	PASS
	HV	13.61	6.10	0.00724	0.00325	PASS

Variant

LTE Band2								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	1.4MHz	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Temperature	Voltage							
Normal (25℃)	Normal	5.14	4.63	2.75	0.00273	0.00246	0.00146	PASS
Extreme (50℃)		9.96	14.39	5.79	0.00530	0.00765	0.00308	PASS
Extreme (40℃)		15.75	8.72	14.03	0.00838	0.00464	0.00746	PASS
Extreme (30℃)		9.25	17.71	16.50	0.00492	0.00942	0.00878	PASS
Extreme (20℃)		10.12	13.60	5.51	0.00538	0.00723	0.00293	PASS
Extreme (10℃)		12.48	9.87	7.51	0.00664	0.00525	0.00399	PASS
Extreme (0℃)		14.08	1.10	9.19	0.00749	0.00058	0.00489	PASS
Extreme (-10℃)		7.54	16.37	4.84	0.00401	0.00871	0.00257	PASS
Extreme (-20℃)		4.01	1.69	17.20	0.00213	0.00090	0.00915	PASS
Extreme (-30℃)		11.95	13.02	8.17	0.00636	0.00693	0.00434	PASS
25℃	LV	2.82	11.81	1.78	0.00150	0.00628	0.00095	PASS
	HV	3.43	17.45	8.69	0.00182	0.00928	0.00462	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	3MHz	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Temperature	Voltage							
Normal (25℃)	Normal	12.05	9.93	16.93	0.00641	0.00528	0.00901	PASS
Extreme (50℃)		1.19	2.78	10.85	0.00063	0.00148	0.00577	PASS
Extreme (40℃)		12.73	5.50	9.52	0.00677	0.00293	0.00507	PASS
Extreme (30℃)		15.64	5.02	15.93	0.00832	0.00267	0.00847	PASS
Extreme (20℃)		6.72	4.44	9.33	0.00358	0.00236	0.00496	PASS
Extreme (10℃)		2.49	6.83	1.19	0.00132	0.00363	0.00063	PASS
Extreme (0℃)		9.07	3.96	14.58	0.00482	0.00211	0.00776	PASS
Extreme (-10℃)		2.38	7.07	9.63	0.00127	0.00376	0.00512	PASS
Extreme (-20℃)		17.09	10.50	16.79	0.00909	0.00559	0.00893	PASS
Extreme (-30℃)		3.17	6.38	16.35	0.00169	0.00339	0.00870	PASS
25℃	LV	7.78	8.88	4.79	0.00414	0.00472	0.00255	PASS
	HV	13.34	1.10	6.09	0.00710	0.00059	0.00324	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Temperature	Voltage							
Normal (25℃)	Normal	13.19	13.26	13.11	0.00701	0.00705	0.00697	PASS
Extreme (50℃)		2.24	3.14	16.88	0.00119	0.00167	0.00898	PASS
Extreme (40℃)		6.13	3.50	10.77	0.00326	0.00186	0.00573	PASS
Extreme (30℃)		7.74	3.59	14.58	0.00411	0.00191	0.00775	PASS



Extreme (20℃)		11.71	4.38	15.14	0.00623	0.00233	0.00805	PASS
Extreme (10℃)		14.25	2.59	16.16	0.00758	0.00138	0.00859	PASS
Extreme (0℃)		5.21	6.32	11.54	0.00277	0.00336	0.00614	PASS
Extreme (-10℃)		13.17	14.84	11.09	0.00700	0.00790	0.00590	PASS
Extreme (-20℃)		3.17	7.98	5.87	0.00169	0.00425	0.00312	PASS
Extreme (-30℃)		4.65	5.85	6.05	0.00247	0.00311	0.00322	PASS
25℃	LV	2.53	8.00	17.39	0.00135	0.00426	0.00925	PASS
	HV	6.85	8.48	7.79	0.00365	0.00451	0.00414	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	10.89	4.13	2.95	0.00579	0.00220	0.00157	PASS
Extreme (50℃)		3.68	9.14	5.82	0.00196	0.00486	0.00310	PASS
Extreme (40℃)		9.28	9.44	14.37	0.00494	0.00502	0.00765	PASS
Extreme (30℃)		2.56	14.04	3.80	0.00136	0.00747	0.00202	PASS
Extreme (20℃)		10.34	16.76	13.78	0.00550	0.00892	0.00733	PASS
Extreme (10℃)		17.44	11.07	7.09	0.00928	0.00589	0.00377	PASS
Extreme (0℃)		14.19	14.07	1.30	0.00755	0.00749	0.00069	PASS
Extreme (-10℃)		5.60	17.30	9.89	0.00298	0.00920	0.00526	PASS
Extreme (-20℃)		2.47	1.66	11.27	0.00132	0.00088	0.00599	PASS
Extreme (-30℃)		15.36	6.76	2.06	0.00817	0.00360	0.00110	PASS
25℃	LV	12.81	7.61	10.58	0.00681	0.00405	0.00563	PASS
	HV	5.45	9.89	17.04	0.00290	0.00526	0.00907	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	6.57	13.70	15.12	0.00349	0.00729	0.00804	PASS
Extreme (50℃)		5.52	8.79	10.76	0.00293	0.00468	0.00572	PASS
Extreme (40℃)		10.62	17.00	8.31	0.00565	0.00904	0.00442	PASS
Extreme (30℃)		12.50	12.72	13.23	0.00665	0.00677	0.00704	PASS
Extreme (20℃)		8.62	11.04	16.51	0.00459	0.00587	0.00878	PASS
Extreme (10℃)		3.08	5.46	16.95	0.00164	0.00290	0.00902	PASS
Extreme (0℃)		3.46	2.19	8.17	0.00184	0.00117	0.00435	PASS
Extreme (-10℃)		10.12	2.83	13.83	0.00539	0.00150	0.00736	PASS
Extreme (-20℃)		7.83	4.84	7.82	0.00416	0.00258	0.00416	PASS
Extreme (-30℃)		5.29	17.49	17.81	0.00281	0.00930	0.00948	PASS
25℃	LV	7.83	6.81	2.43	0.00417	0.00362	0.00129	PASS
	HV	16.67	13.33	13.52	0.00887	0.00709	0.00719	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	4.80	8.37	8.69	0.00255	0.00445	0.00462	PASS
Extreme (50℃)		6.24	10.78	8.99	0.00332	0.00574	0.00478	PASS
Extreme (40℃)		12.40	9.13	16.47	0.00659	0.00485	0.00876	PASS
Extreme (30℃)		9.55	16.54	2.16	0.00508	0.00880	0.00115	PASS
Extreme (20℃)		4.63	15.48	8.65	0.00246	0.00823	0.00460	PASS
Extreme (10℃)		3.27	7.51	5.55	0.00174	0.00400	0.00295	PASS
Extreme (0℃)		6.97	17.61	9.12	0.00371	0.00937	0.00485	PASS
Extreme (-10℃)		11.66	16.94	17.79	0.00620	0.00901	0.00946	PASS
Extreme (-20℃)		2.70	13.80	15.13	0.00144	0.00734	0.00805	PASS
Extreme (-30℃)		5.62	8.17	5.42	0.00299	0.00434	0.00288	PASS
25℃	LV	1.66	7.40	3.56	0.00089	0.00394	0.00189	PASS
	HV	7.62	6.10	3.36	0.00405	0.00324	0.00179	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~0.15MHz)

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

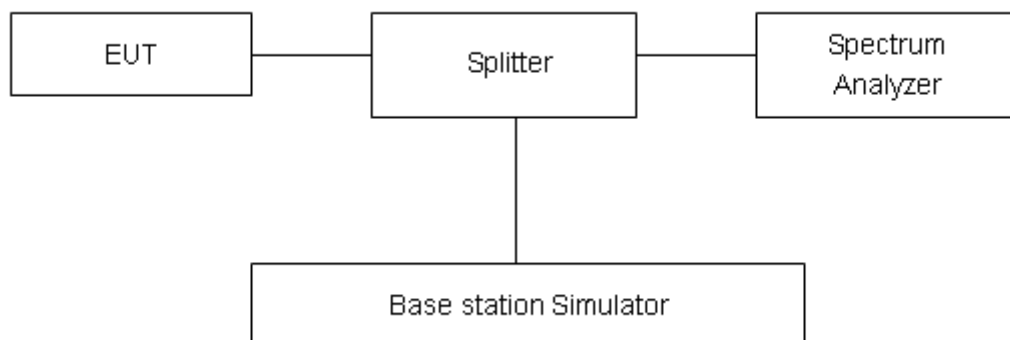
RBW is set to 100 kHz (30MHz~1000MHz)

RBW is set to 1000 kHz (above 1000MHz)

Sweep is set to ATUO.

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

Test setup



Limits

Rule Part 24.238(a) specifies that “on any frequency outside a licensee’s frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10} (P)$ dB.”

Limit	-13 dBm
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Measurement Uncertainty

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

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

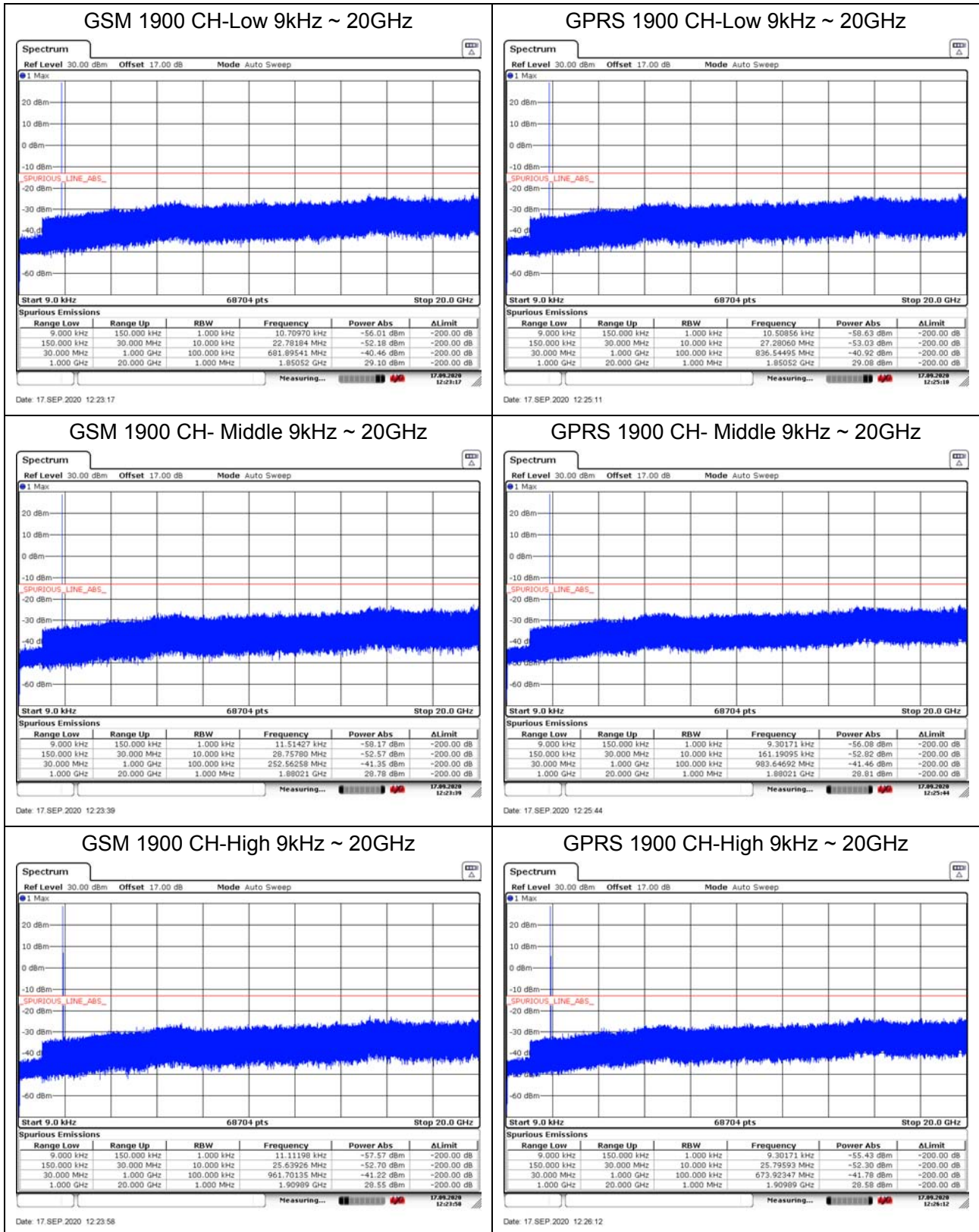


Test Result

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.

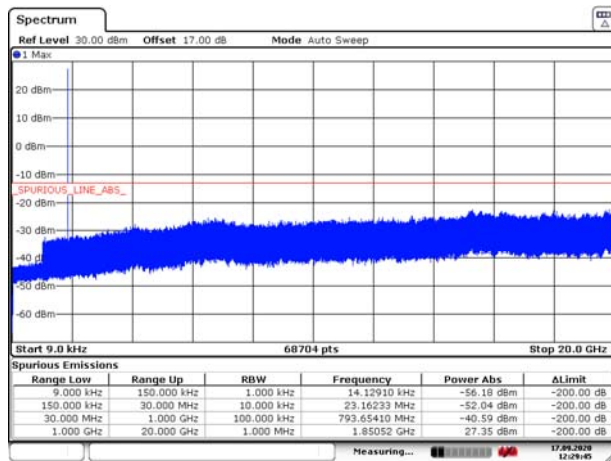
The signal beyond the limit is carrier.

Original



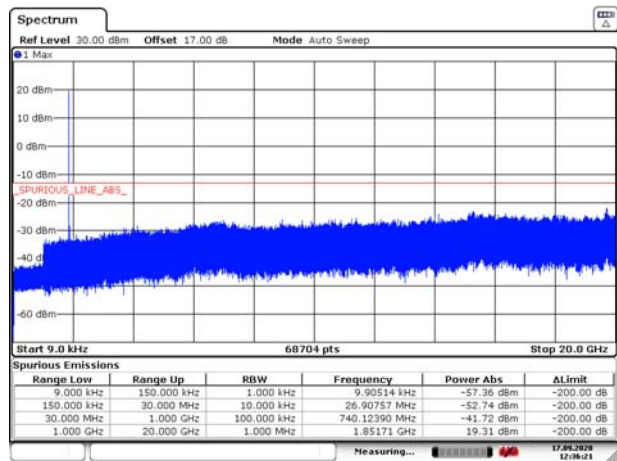


EGPRS 1900 CH-Low 9kHz ~ 20GHz



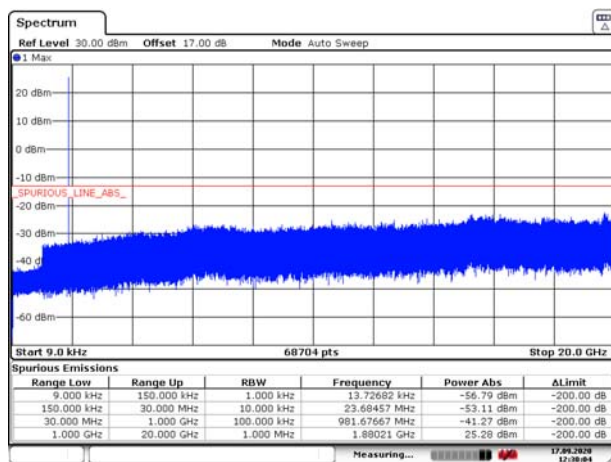
Date: 17 SEP 2020 12:29:45

WCDMA BAND II CH-Low 9kHz ~ 20GHz



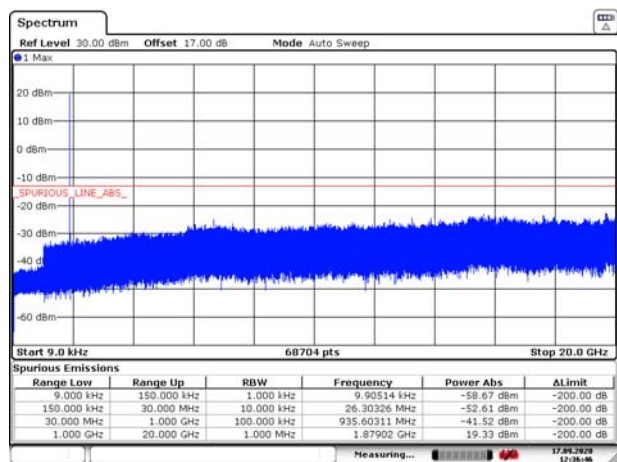
Date: 17 SEP 2020 12:36:21

EGPRS 1900 CH- Middle 9kHz ~ 20GHz



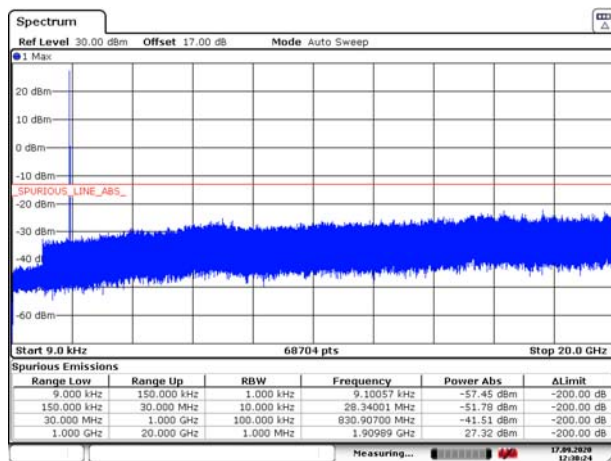
Date: 17 SEP 2020 12:30:04

WCDMA BAND II CH- Middle 9kHz ~ 20GHz



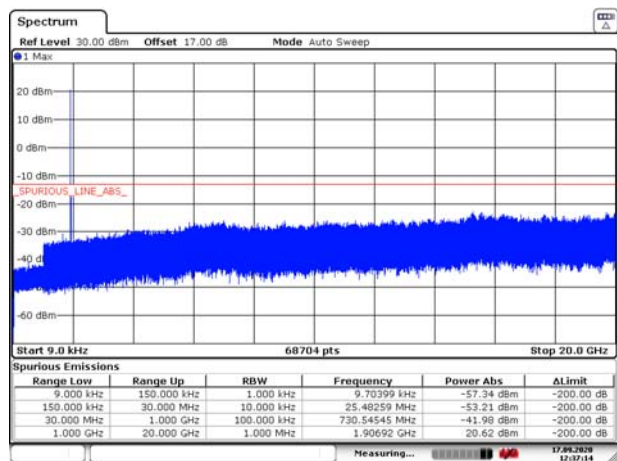
Date: 17 SEP 2020 12:36:46

EGPRS 1900 CH-High 9kHz ~ 20GHz



Date: 17 SEP 2020 12:30:25

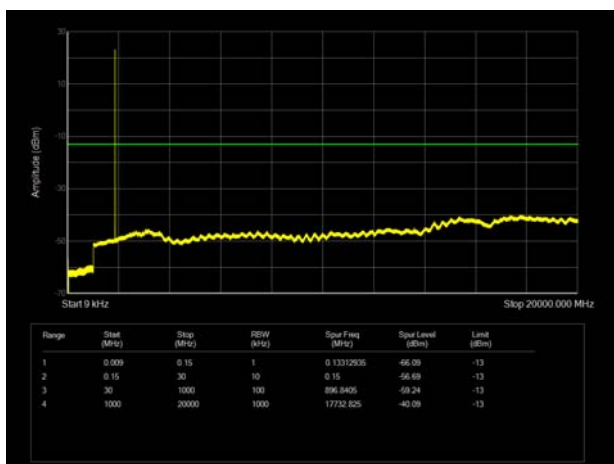
WCDMA BAND II CH-High 9kHz ~ 20GHz



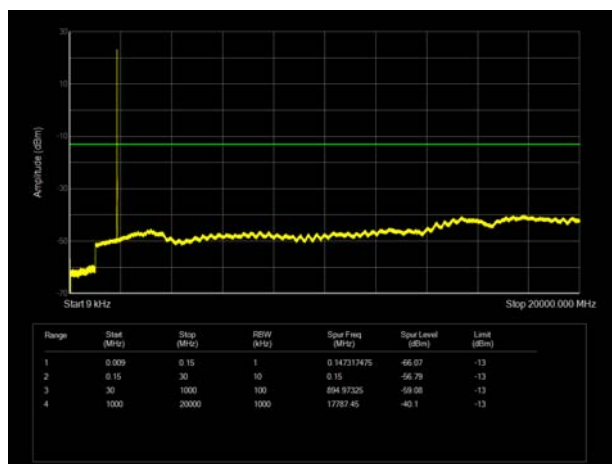
Date: 17 SEP 2020 12:37:14

Variant

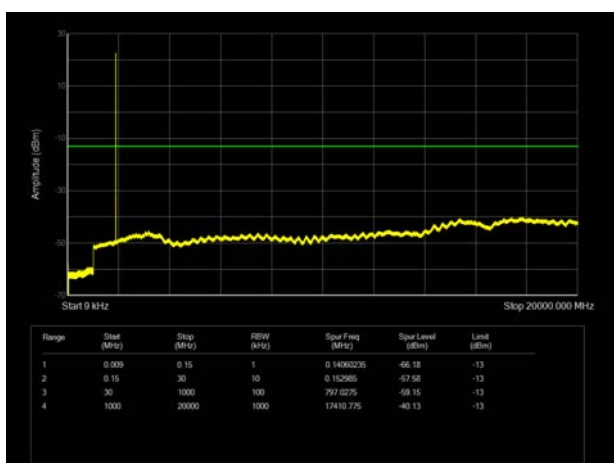
LTE Band 2 1.4MHz CH-Low 9kHz~20GHz



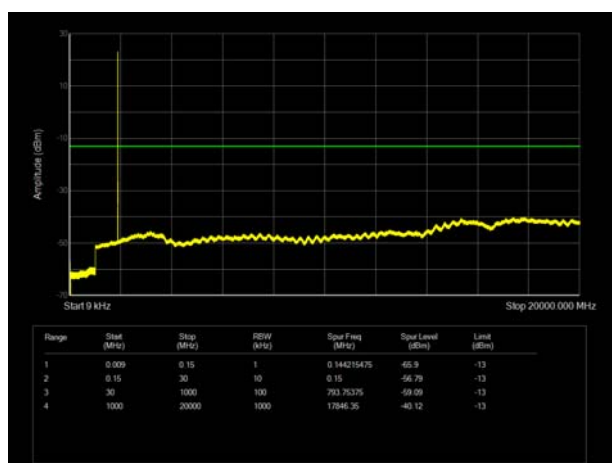
LTE Band 2 3MHz CH-Low 9kHz~20GHz



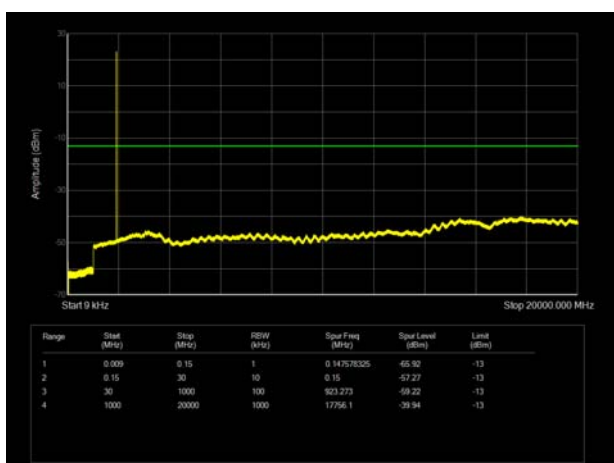
LTE Band 2 1.4MHz CH-Middle 9kHz~20GHz



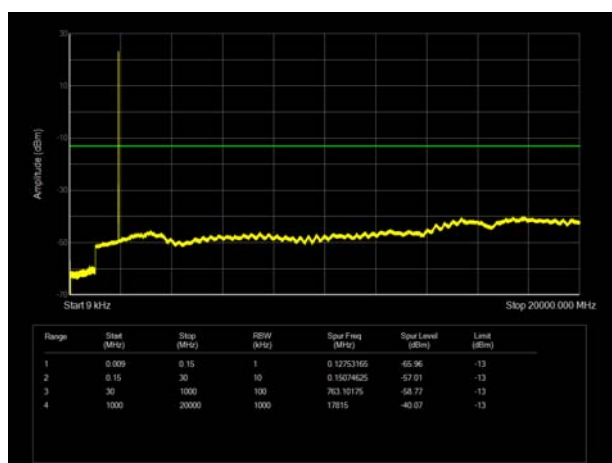
LTE Band 2 3MHz CH-Middle 9kHz~20GHz



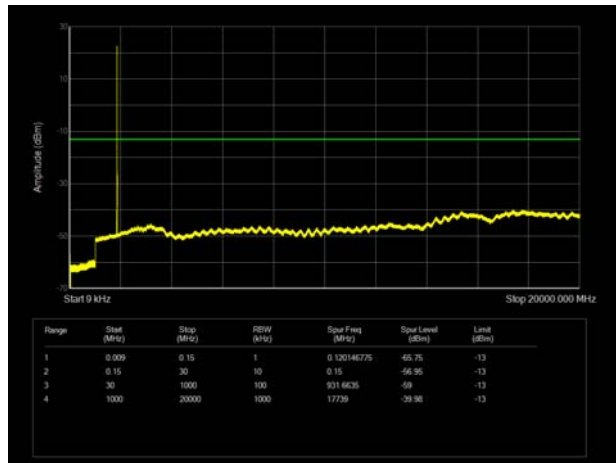
LTE Band 2 1.4MHz CH-High 9kHz~20GHz



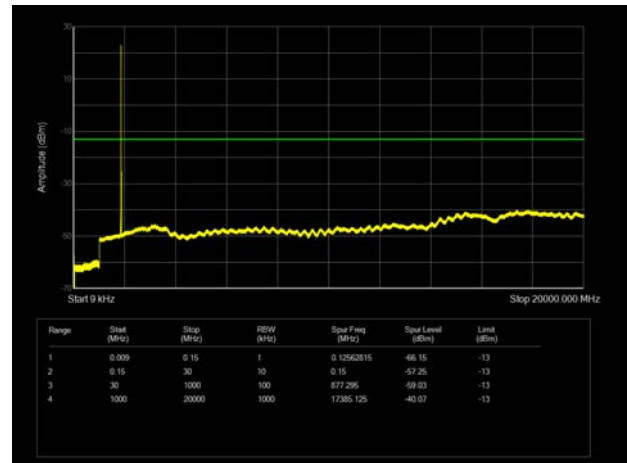
LTE Band 2 3MHz CH-High 9kHz~20GHz



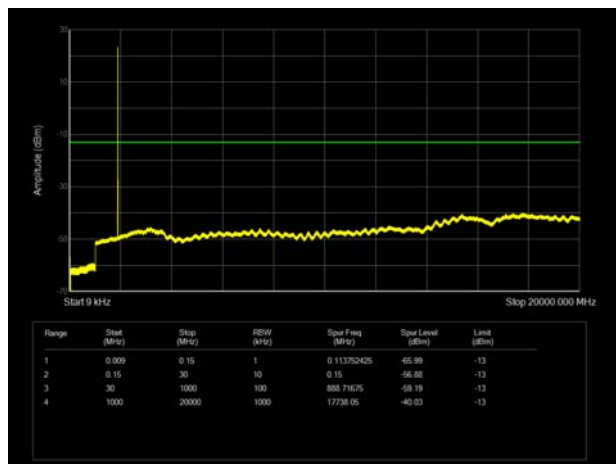
LTE Band 2 5MHz CH-Low 9kHz~20GHz



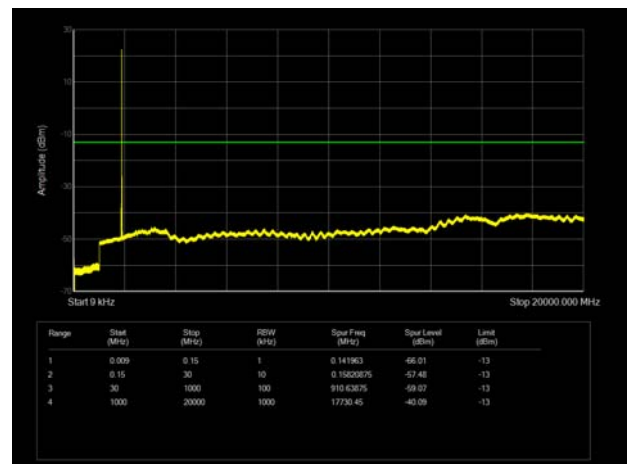
LTE Band 2 10MHz CH-Low 9kHz~20GHz



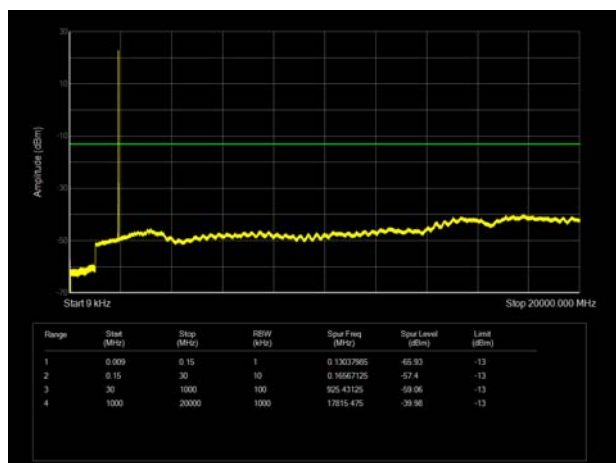
LTE Band 2 5MHz CH-Middle 9kHz~20GHz



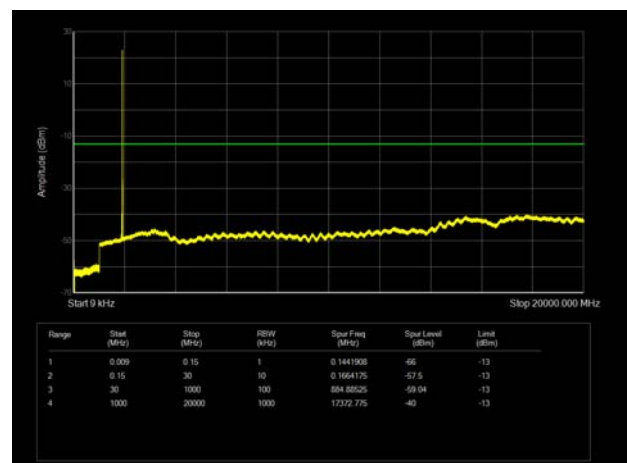
LTE Band 2 10MHz CH-Middle 9kHz~20GHz



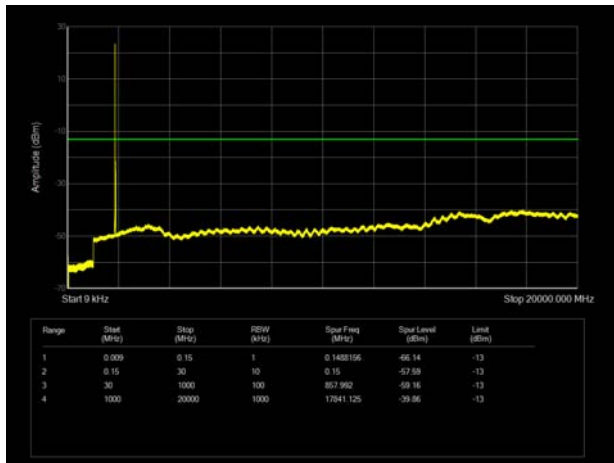
LTE Band 2 5MHz CH-High 9kHz~20GHz



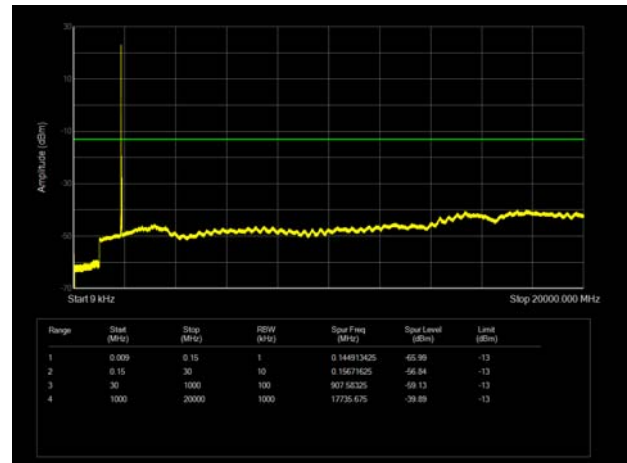
LTE Band 2 10MHz CH-High 9kHz~20GHz



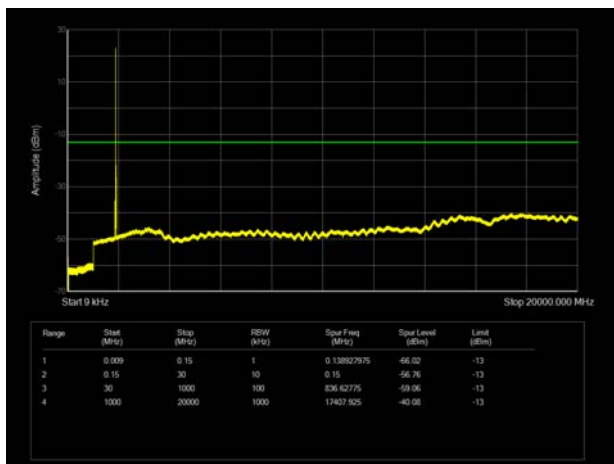
LTE Band 2 15MHz CH-Low 9kHz~20GHz



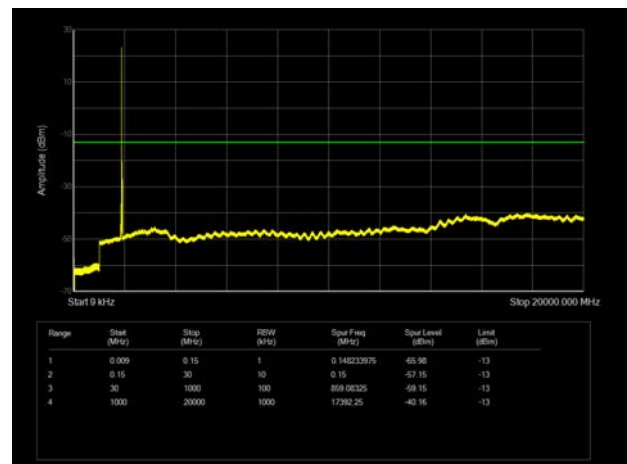
LTE Band 2 20MHz CH-Low 9kHz~20GHz



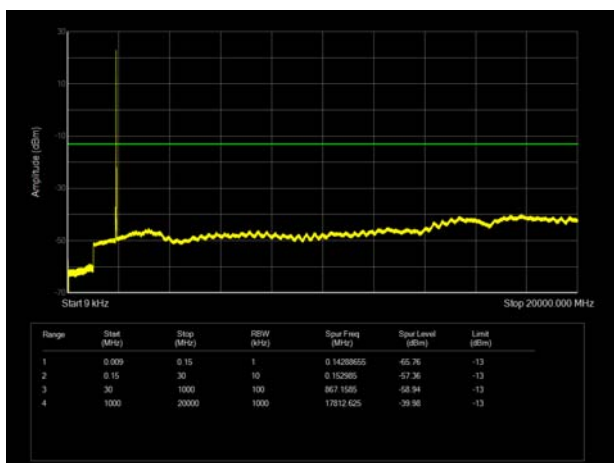
LTE Band 2 15MHz CH-Middle 9kHz~20GHz



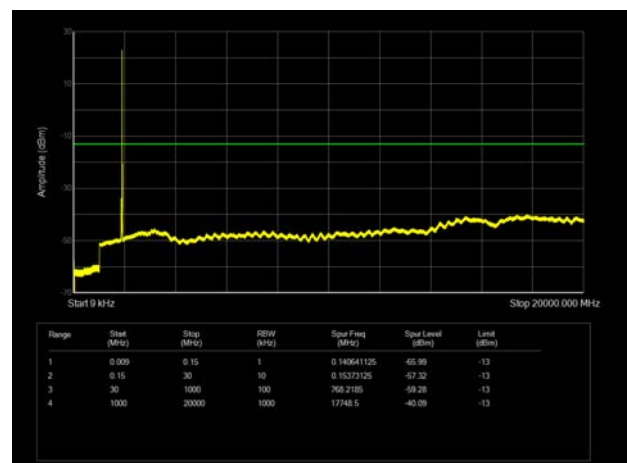
LTE Band 2 20MHz CH-Middle 9kHz~20GHz



LTE Band 2 15MHz CH-High 9kHz~20GHz



LTE Band 2 20MHz CH-High 9kHz~20GHz



5.7. Radiates Spurious Emission

Ambient condition

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

Method of Measurement

1. The testing follows FCC KDB 971168 v03r01 Section 5.8 and ANSI C63.26 (2015).
2. Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H). Above 1GHz: (Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
3. A loop antenna, A log-periodic antenna or horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
4. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=200Hz,VBW=600Hz for 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:

$$\text{Power(EIRP)} = \text{PMea} - \text{PAg} - \text{Pcl} + \text{Ga}$$
The measurement results are amend as described below:

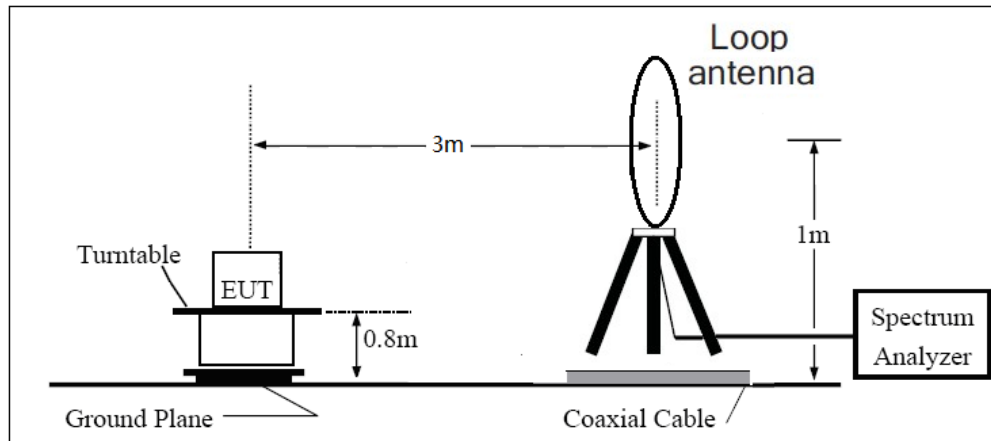
$$\text{Power(EIRP)} = \text{PMea} - \text{Pcl} + \text{Ga}$$
8. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi)

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

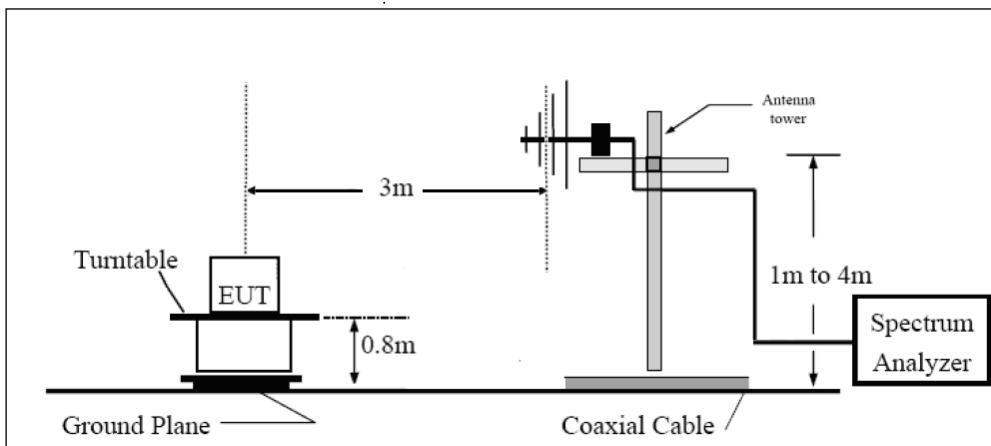
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

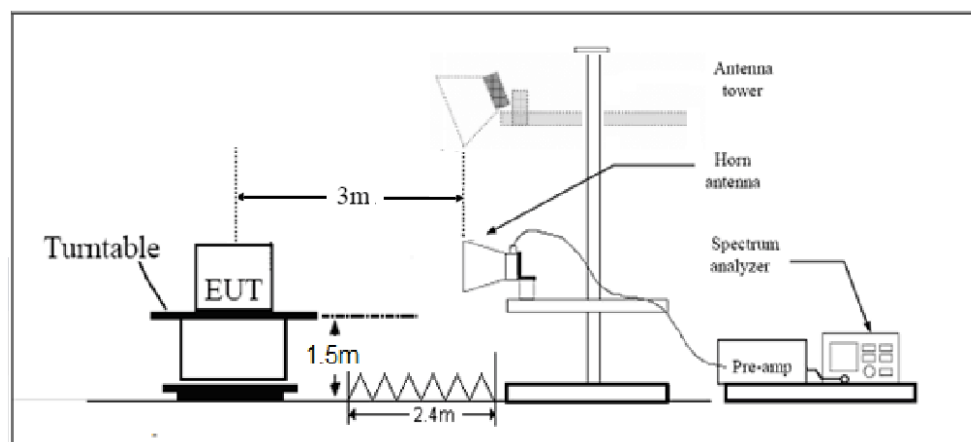
9KHz ~ 30MHz



30MHz ~ 1GHz



Above 1GHz



Note: Area side: 2.4mX3.6m

Limits

Rule Part 24.238(a) specifies that “on any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10} (P)$ dB.”

Limit	-13 dBm
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Measurement Uncertainty

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

Test 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.

Main Antenna

Original

GSM 1900 CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3760.0	-56.46	5.10	11.05	Horizontal	-50.51	-13.00	37.51	0
3	5640.0	-57.28	5.42	12.65	Horizontal	-50.05	-13.00	37.05	45
4	7520.0	-54.95	6.70	13.85	Horizontal	-47.80	-13.00	34.80	315
5	9400.0	-55.65	7.01	14.75	Horizontal	-47.91	-13.00	34.91	270
6	11280.0	-52.34	7.48	15.95	Horizontal	-43.87	-13.00	30.87	180
7	13160.0	-51.87	7.51	16.55	Horizontal	-42.83	-13.00	29.83	0
8	15040.0	-49.38	8.24	15.35	Horizontal	-42.27	-13.00	29.27	45
9	16920.0	-45.78	8.41	14.95	Horizontal	-39.24	-13.00	26.24	135
10	18800.0	-	-	-	-	-	-	-	-

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.

Original

WCDMA Band II CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3760.0	-58.24	5.10	11.05	Horizontal	-52.29	-13.00	39.29	90
3	5640.0	-57.79	5.42	12.65	Horizontal	-50.56	-13.00	37.56	0
4	7520.0	-56.77	6.70	13.85	Horizontal	-49.62	-13.00	36.62	315
5	9400.0	-54.96	7.01	14.75	Horizontal	-47.22	-13.00	34.22	0
6	11280.0	-54.50	7.48	15.95	Horizontal	-46.03	-13.00	33.03	225
7	13160.0	-52.48	7.51	16.55	Horizontal	-43.44	-13.00	30.44	0
8	15040.0	-49.35	8.24	15.35	Horizontal	-42.24	-13.00	29.24	45
9	16920.0	-46.84	8.41	14.95	Horizontal	-40.30	-13.00	27.30	315
10	18800.0	-	-	-	-	-	-	-	-

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.

Variant

LTE Band 2 1.4MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3759.0	-55.21	5.10	11.05	Horizontal	-49.26	-13.00	36.26	180
3	5638.9	-57.48	5.42	12.65	Horizontal	-50.25	-13.00	37.25	135
4	7520.0	-54.68	6.70	13.85	Horizontal	-47.53	-13.00	34.53	270
5	9400.0	-55.43	7.01	14.75	Horizontal	-47.69	-13.00	34.69	90
6	11280.0	-52.52	7.48	15.95	Horizontal	-44.05	-13.00	31.05	135
7	13160.0	-51.24	7.51	16.55	Horizontal	-42.20	-13.00	29.20	0
8	15040.0	-49.37	8.24	15.35	Horizontal	-42.26	-13.00	29.26	225
9	16920.0	-46.31	8.41	14.95	Horizontal	-39.77	-13.00	26.77	180
10	18800.0	-	-	-	-	-	-	-	-
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 2 5MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3755.6	-56.19	5.10	11.05	Horizontal	-50.24	-13.00	37.24	270
3	5633.6	-57.75	5.42	12.65	Horizontal	-50.52	-13.00	37.52	180
4	7520.0	-56.56	6.70	13.85	Horizontal	-49.41	-13.00	36.41	225
5	9400.0	-54.71	7.01	14.75	Horizontal	-46.97	-13.00	33.97	90
6	11280.0	-51.95	7.48	15.95	Horizontal	-43.48	-13.00	30.48	315
7	13160.0	-51.28	7.51	16.55	Horizontal	-42.24	-13.00	29.24	0
8	15040.0	-48.80	8.24	15.35	Horizontal	-41.69	-13.00	28.69	180
9	16920.0	-47.60	8.41	14.95	Horizontal	-41.06	-13.00	28.06	45
10	18800.0	-	-	-	-	-	-	-	-
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 2 20MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3742.1	-56.15	5.10	11.05	Horizontal	-50.20	-13.00	37.20	90
3	5613.4	-56.72	5.42	12.65	Horizontal	-49.49	-13.00	36.49	45
4	7484.6	-55.34	6.70	13.85	Horizontal	-48.19	-13.00	35.19	135
5	9400.0	-55.28	7.01	14.75	Horizontal	-47.54	-13.00	34.54	90
6	11280.0	-53.03	7.48	15.95	Horizontal	-44.56	-13.00	31.56	225
7	13160.0	-51.39	7.51	16.55	Horizontal	-42.35	-13.00	29.35	315
8	15040.0	-48.86	8.24	15.35	Horizontal	-41.75	-13.00	28.75	180
9	16920.0	-46.61	8.41	14.95	Horizontal	-40.07	-13.00	27.07	0
10	18800.0	-	-	-	-	-	-	-	-

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.

Second Antenna
Original
GSM 1900 CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3760.0	-58.61	5.10	11.05	Horizontal	-52.66	-13.00	39.66	180
3	5640.0	-57.27	5.42	12.65	Horizontal	-50.04	-13.00	37.04	315
4	7520.0	-56.09	6.70	13.85	Horizontal	-48.94	-13.00	35.94	135
5	9400.0	-54.86	7.01	14.75	Horizontal	-47.12	-13.00	34.12	45
6	11280.0	-52.57	7.48	15.95	Horizontal	-44.10	-13.00	31.10	90
7	13160.0	-51.03	7.51	16.55	Horizontal	-41.99	-13.00	28.99	45
8	15040.0	-48.93	8.24	15.35	Horizontal	-41.82	-13.00	28.82	315
9	16920.0	-45.70	8.41	14.95	Horizontal	-39.16	-13.00	26.16	225
10	18800.0	-	-	-	-	-	-	-	-

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.

Original

WCDMA Band II CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3760.0	-58.70	5.10	11.05	Horizontal	-52.75	-13.00	39.75	0
3	5640.0	-58.76	5.42	12.65	Horizontal	-51.53	-13.00	38.53	270
4	7520.0	-57.14	6.70	13.85	Horizontal	-49.99	-13.00	36.99	135
5	9400.0	-54.54	7.01	14.75	Horizontal	-46.80	-13.00	33.80	180
6	11280.0	-53.33	7.48	15.95	Horizontal	-44.86	-13.00	31.86	90
7	13160.0	-51.28	7.51	16.55	Horizontal	-42.24	-13.00	29.24	315
8	15040.0	-49.79	8.24	15.35	Horizontal	-42.68	-13.00	29.68	180
9	16920.0	-47.82	8.41	14.95	Horizontal	-41.28	-13.00	28.28	45
10	18800.0	-	-	-	-	-	-	-	-

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.

Variant

LTE Band 2 1.4MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3759.0	-57.80	5.10	11.05	Horizontal	-51.85	-13.00	38.85	45
3	5638.9	-56.89	5.42	12.65	Horizontal	-49.66	-13.00	36.66	0
4	7520.0	-56.77	6.70	13.85	Horizontal	-49.62	-13.00	36.62	45
5	9400.0	-54.69	7.01	14.75	Horizontal	-46.95	-13.00	33.95	0
6	11280.0	-52.20	7.48	15.95	Horizontal	-43.73	-13.00	30.73	225
7	13160.0	-50.62	7.51	16.55	Horizontal	-41.58	-13.00	28.58	0
8	15040.0	-49.02	8.24	15.35	Horizontal	-41.91	-13.00	28.91	45
9	16920.0	-46.92	8.41	14.95	Horizontal	-40.38	-13.00	27.38	315
10	18800.0	-	-	-	-	-	-	-	-

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 2 5MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3755.6	-58.97	5.10	11.05	Horizontal	-53.02	-13.00	40.02	90
3	5633.6	-57.83	5.42	12.65	Horizontal	-50.60	-13.00	37.60	45
4	7520.0	-55.90	6.70	13.85	Horizontal	-48.75	-13.00	35.75	135
5	9400.0	-54.99	7.01	14.75	Horizontal	-47.25	-13.00	34.25	45
6	11280.0	-52.87	7.48	15.95	Horizontal	-44.40	-13.00	31.40	270
7	13160.0	-52.30	7.51	16.55	Horizontal	-43.26	-13.00	30.26	315
8	15040.0	-49.89	8.24	15.35	Horizontal	-42.78	-13.00	29.78	45
9	16920.0	-46.78	8.41	14.95	Horizontal	-40.24	-13.00	27.24	90
10	18800.0	-	-	-	-	-	-	-	-

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 2 20MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3742.1	-59.33	5.10	11.05	Horizontal	-53.38	-13.00	40.38	45
3	5613.4	-56.94	5.42	12.65	Horizontal	-49.71	-13.00	36.71	270
4	7484.6	-57.03	6.70	13.85	Horizontal	-49.88	-13.00	36.88	270
5	9400.0	-54.37	7.01	14.75	Horizontal	-46.63	-13.00	33.63	45
6	11280.0	-53.04	7.48	15.95	Horizontal	-44.57	-13.00	31.57	315
7	13160.0	-51.52	7.51	16.55	Horizontal	-42.48	-13.00	29.48	270
8	15040.0	-49.54	8.24	15.35	Horizontal	-42.43	-13.00	29.43	45
9	16920.0	-46.93	8.41	14.95	Horizontal	-40.39	-13.00	27.39	135
10	18800.0	-	-	-	-	-	-	-	-

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.

6. Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Base Station Simulator	R&S	CMU200	118133	2020-05-17	2021-05-16
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
Universal Radio Communication Tester	Key sight	E5515C	MY48367192	2020-05-27	2021-05-26
Signal Analyzer	R&S	FSV30	100815	2019-12-15	2020-12-14
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2020-04-02	2023-04-01
Trilog 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	2017-12-17	2020-12-16
Preamplifier	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	2020-06-12	2020-12-11
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.