FCC Test Report

(Part 24 – CDMA BC1, GSM, WCDMA B2, LTE B2/B25)

Report No.:	RFBFLF-WTW-P21010278-10
FCC ID:	MSQI007D
Test Model:	ASUS_I007D
Received Date:	Jan. 04, 2021
Test Date:	Jan. 04 ~ Apr. 01, 2021
Issued Date:	Apr. 01, 2021
Applicant:	ASUSTeK COMPUTER INC.
Address:	1F., No. 15, Lide Rd., Beitou Dist., Taipei City 112, Taiwan
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN
FCC Registration / Designation Number:	788550 / TW0003

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Release Control Record

Issue No.	Description	Date Issued
RFBFLF-WTW-P21010278-10	Original release	Apr. 01, 2021

1 Certificate of Conformity

Product:	EXP21 Smartphone
Brand:	ASUS
Test Model:	ASUS_I007D
Sample Status:	Engineering sample
Applicant:	ASUSTeK COMPUTER INC.
Test Date:	Jan. 04 ~ Apr. 01, 2021
Standards:	FCC Part 24, Subpart E

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : Celine Chou , **Date:** Apr. 01, 2021

Celine Chou / Senior Specialist

Approved by : Bruce Chen , **Date:** Apr. 01, 2021

Bruce Chen / Senior Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 24 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 24.232	Effective Isotropically Radiated Power	Pass	Meet the requirement of limit.
2.1046 24.232 (d)	Peak To Average Ratio	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement
2.1055 24.235	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
24.238	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 24.238	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 24.238	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -18.20dB at 72.68MHz.

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.59 dB
	200MHz ~1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver KEYSIGHT	N9038A	MY55420137	Apr. 16, 2020	Apr. 15, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Jun. 12, 2020	Jun. 11, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSW43	101866	Dec. 14, 2020	Dec. 13, 2021
MXG Vector signal generator Agilent	N5182B	MY53050430	Nov. 25, 2020	Nov. 24, 2021
Radio Communication Analyzer Anritsu	MT8821C	6261806803	Jan. 18, 2020	Jan. 17, 2021
			Jan. 22, 2021	Jan. 21, 2022
Universal Radio Communication Tester R&S	CMU200	101095	Nov. 18, 2020	Nov. 17, 2021
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-969	Nov. 22, 2020	Nov. 21, 2021
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Nov. 06, 2020	Nov. 05, 2021
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Nov. 22, 2020	Nov. 21, 2021
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 22, 2020	Nov. 21, 2021
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Jun. 08, 2020	Jun. 07, 2021
Preamplifier Agilent (Above 1GHz)	8449B	3008A02367	Feb. 18, 2020	Feb. 17, 2021
			Feb. 17, 2021	Feb. 16, 2022
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	Jan. 18, 2020	Jan. 17, 2021
			Jan. 16, 2021	Jan. 15, 2022
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Jan. 18, 2020	Jan. 17, 2021
			Jan. 16, 2021	Jan. 15, 2022
RF signal cable Woken	8D-FB	Cable-CH9-01	Jun. 08, 2020	Jun. 07, 2021
Software BV ADT	ADT_Radiated_V7.6.15.9.5	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Standard Temperature And Humidity Chamber GIANT FORCE	GTH-120-40-CP-AR	MAA1306-019	Sep. 10, 2020	Sep. 09, 2021

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
True RMS Clamp Meter Fluke	325	31130711WS	Jun. 06, 2020	Jun. 05, 2021
DC power supply Keysight	U8002A	MY56330015	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 9.

3 General Information

3.1 General Description of EUT

Product	EXP21 Smartphone	
Brand	ASUS	
Test Model	ASUS_I007D	
Sample Status	Engineering sample	
Power Supply Rating	7.74 Vdc (Battery) 5 Vdc / 9 Vdc / 12 Vdc / 15Vdc / 20Vdc (Adapter)	
Modulation Type	CDMA BC1: CDMA, EVDO, 1xEVDO GSM, GPRS: GMSK EDGE: 8PSK WCDMA: BPSK, QPSK HSDPA: BPSK HSUPA: QPSK LTE: QPSK, 16QAM, 64QAM, 256QAM	
Operating Frequency	CDMA BC1	1851.25MHz ~ 1908.75MHz
	GSM/GPRS/EDGE	1850.2MHz ~1909.8MHz
	WCDMA Band 2	1852.4MHz ~ 1907.6MHz
	LTE Band 2 (Channel Bandwidth 1.4MHz)	1850.7MHz ~ 1909.3MHz
	LTE Band 2 (Channel Bandwidth 3MHz)	1851.5MHz ~ 1908.5MHz
	LTE Band 2 (Channel Bandwidth 5MHz)	1852.5MHz ~ 1907.5MHz
	LTE Band 2 (Channel Bandwidth 10MHz)	1855.0MHz ~ 1905.0MHz
	LTE Band 2 (Channel Bandwidth 15MHz)	1857.5MHz ~ 1902.5MHz
	LTE Band 2 (Channel Bandwidth 20MHz)	1860.0MHz ~ 1900.0MHz
	LTE Band 25 (Channel Bandwidth 1.4MHz)	1850.7MHz ~ 1914.3MHz
	LTE Band 25 (Channel Bandwidth 3MHz)	1851.5MHz ~ 1913.5MHz
	LTE Band 25 (Channel Bandwidth 5MHz)	1852.5MHz ~ 1912.5MHz
	LTE Band 25 (Channel Bandwidth 10MHz)	1855.0MHz ~ 1910.0MHz
	LTE Band 25 (Channel Bandwidth 15MHz)	1857.5MHz ~ 1907.5MHz
	LTE Band 25 (Channel Bandwidth 20MHz)	1860.0MHz ~ 1905.0MHz

Max. EIRP Power	CDMA BC1	179.473mW (22.54dBm)			
	GSM	724.436mW (28.60dBm)			
	WCDMA Band 2	155.597mW (21.92dBm)			
		QPSK	16QAM	64QAM	256QAM
	LTE Band 2 (Channel Bandwidth 1.4MHz)	174.985mW (22.43dBm)	143.549mW (21.57dBm)	108.893mW (20.37dBm)	52.845mW (17.23dBm)
	LTE Band 2 (Channel Bandwidth 3MHz)	173.780mW (22.40dBm)	143.219mW (21.56dBm)	110.917mW (20.45dBm)	52.602mW (17.21dBm)
	LTE Band 2 (Channel Bandwidth 5MHz)	176.198mW (22.46dBm)	142.233mW (21.53dBm)	110.662mW (20.44dBm)	50.816mW (17.06dBm)
	LTE Band 2 (Channel Bandwidth 10MHz)	174.582mW (22.42dBm)	141.906mW (21.52dBm)	109.396mW (20.39dBm)	52.966mW (17.24dBm)
	LTE Band 2 (Channel Bandwidth 15MHz)	178.649mW (22.52dBm)	144.212mW (21.59dBm)	111.686mW (20.48dBm)	53.456mW (17.28dBm)
	LTE Band 2 (Channel Bandwidth 20MHz)	179.473mW (22.54dBm)	144.544mW (21.60dBm)	111.944mW (20.49dBm)	53.951mW (17.32dBm)
	LTE Band 25 (Channel Bandwidth 1.4MHz)	170.608mW (22.32dBm)	136.144mW (21.34dBm)	108.143mW (20.34dBm)	50.466mW (17.03dBm)
	LTE Band 25 (Channel Bandwidth 3MHz)	166.341mW (22.21dBm)	133.045mW (21.24dBm)	106.170mW (20.26dBm)	48.865mW (16.89dBm)
	LTE Band 25 (Channel Bandwidth 5MHz)	165.959mW (22.20dBm)	132.739mW (21.23dBm)	105.439mW (20.23dBm)	50.003mW (16.99dBm)
	LTE Band 25 (Channel Bandwidth 10MHz)	172.187mW (22.36dBm)	134.586mW (21.29dBm)	108.643mW (20.36dBm)	51.286mW (17.10dBm)
	LTE Band 25 (Channel Bandwidth 15MHz)	170.216mW (22.31dBm)	134.586mW (21.29dBm)	107.895mW (20.33dBm)	51.761mW (17.14dBm)
	LTE Band 25 (Channel Bandwidth 20MHz)	173.780mW (22.40dBm)	135.831mW (21.33dBm)	109.648mW (20.40dBm)	50.582mW (17.04dBm)

Emission Designator	CDMA BC1	1M27F9W			
	GSM/GPRS	266KGXW			
	EDGE	262KG7W			
	WCDMA Band 2	4M15F9W			
		QPSK	16QAM	64QAM	256QAM
	LTE Band 2 (Channel Bandwidth 1.4MHz)	1M09G7D	1M10D7W	1M09D7W	1M09D7W
	LTE Band 2 (Channel Bandwidth 3MHz)	2M71G7D	2M70D7W	2M73D7W	2M70D7W
	LTE Band 2 (Channel Bandwidth 5MHz)	4M48G7D	4M57D7W	4M54D7W	4M49D7W
	LTE Band 2 (Channel Bandwidth 10MHz)	9M12G7D	9M10D7W	9M04D7W	8M96D7W
	LTE Band 2 (Channel Bandwidth 15MHz)	13M5G7D	13M4D7W	13M7D7W	13M5D7W
	LTE Band 2 (Channel Bandwidth 20MHz)	17M9G7D	17M9D7W	18M0D7W	18M0D7W
	LTE Band 25 (Channel Bandwidth 1.4MHz)	1M09G7D	1M09D7W	1M09D7W	1M09D7W
	LTE Band 25 (Channel Bandwidth 3MHz)	2M70G7D	2M70D7W	2M70D7W	2M70D7W
	LTE Band 25 (Channel Bandwidth 5MHz)	4M49G7D	4M49D7W	4M50D7W	4M49D7W
	LTE Band 25 (Channel Bandwidth 10MHz)	8M95G7D	8M96D7W	8M96D7W	8M96D7W
	LTE Band 25 (Channel Bandwidth 15MHz)	13M5G7D	13M4D7W	13M4D7W	13M5D7W
	LTE Band 25 (Channel Bandwidth 20MHz)	17M9G7D	17M9D7W	17M9D7W	17M9D7W
Antenna Type	Refer to Note as below				
Antenna Connector	Refer to Note as below				
Accessory Device	Refer to Note as below				
Cable Supplied	Refer to Note as below				

Note:

1. The EUT contains following accessory devices.

Product	Brand	Model	Description
Battery	SCUD	C21P2002	Rating: 7.74Vdc, 15.2Wh
Adapter	AOHAI	A320Q-200325C-US	I/P: 100-240Vac, 50/60Hz,1.5A O/P: 5Vdc, 3A; 9Vdc, 3A; 12Vdc, 3A; 15Vdc, 3A; 20Vdc, 3.25A
Type A to Type C USB Cable	Luxshare	LA9U2026-CS-R	0.5m
Type C to Type C Cable	Luxshare	LA9UC006-CS-R	1.2m
Bluetooth Earphone	Bang & Olufsen	EQ Earbud R	FCC ID: TTUBEOPLAYEQR IC: 3775B-BEOPLAYEQR
		EQ Earbud L	FCC ID: TTUBEOPLAYEQL IC: 3775B-BEOPLAYEQL
Bluetooth Earphone Charging Case	Bang & Olufsen	EQ Charging case	I/P: 5Vdc/500mA O/P: 5Vdc/ R170mA; L170mA

2. The following antennas were provided to the EUT.

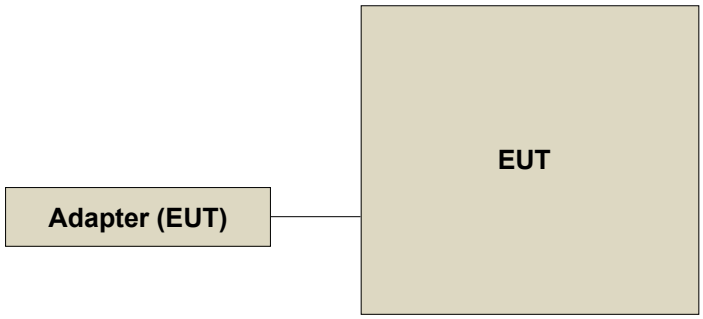
Ant. No.	Brand	Model	Ant. Type	Connecter	Frequency Range
Ant 0	ASUS	ZS675KW	PIFA	LCP+Ipex	610-960MHz, 1710-2690MHz
Ant 1	ASUS	ZS675KW	PIFA	LCP+Ipex	1427-1510MHz, 1710-2690MHz
Ant 2	ASUS	ZS675KW	PIFA	LCP+Ipex	610-960MHz, 1427-1510MHz, 1710-2690MHz
Ant 3	INPAQ	ZS675KW	PIFA	Ipex	1575-1610MHz, 2400-2500MHz, 5150-5850MHz, 5925-7125MHz
Ant 4	INPAQ	ZS675KW	PIFA	Ipex	1176±10MHz, 2400-2500MHz, 5150-5850MHz, 5925-7125MHz
Ant 5	INPAQ	ZS675KW	PIFA	LCP+Ipex	3300-4000MHz, 4400-5000MHz
Ant 6	INPAQ	ZS675KW	PIFA	Ipex	1427-1510MHz, 2400-2500MHz, 5150-5850MHz, 5925-7125MHz
Ant 7	INPAQ	ZS675KW	PIFA	LCP+Ipex	3300-4000MHz, 4400-5000MHz
Ant 8	ASUS	ZS675KW	PIFA	LCP+Ipex	1427-1510MHz, 1710-2690MHz
Ant 9	ASUS	ZS675KW	PIFA	LCP+Ipex	1710-2690MHz
Ant 10	INPAQ	ZS675KW	PIFA	Ipex	3300-4000MHz, 4400-5000MHz
Ant 11	INPAQ	ZS675KW	PIFA	Ipex	3300-4000MHz, 4400-5000MHz

2G / 3G Band												
Band	Freq. Range (MHz)	Gain (dBi)										
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Ant. 4	Ant. 5	Ant. 6	Ant. 7	Ant. 8	Ant. 9	Ant. 10	Ant. 11
GSM-850	824 ~ 849	-1.891		-4.526									
GSM-1900	1850 ~ 1910		-1.887	-1.394						-2.89579			
WCDMA B2	1850 ~ 1910		-1.887	-1.394						-2.89579			
WCDMA B4	1710 ~ 1755		-2.884	-3.228						-3.13552			
WCDMA B5	824 ~ 849	-1.891		-4.526									
CDMA BC0	815 ~ 849	-1.891		-4.526									
CDMA BC1	1850 ~ 1910		-1.887	-1.394						-2.89579			
CDMA BC10	806 ~ 901	-1.891		-4.526									

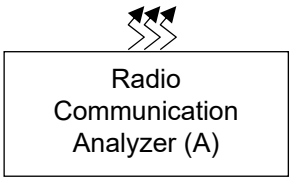
LTE Band												
Band	Freq. Range (MHz)	Gain (dBi)										
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Ant. 4	Ant. 5	Ant. 6	Ant. 7	Ant. 8	Ant. 9	Ant. 10	Ant. 11
LTE B2	1850 ~ 1910		-1.887	-1.394						-2.89579	-1.804		
LTE B4	1710 ~ 1755		-2.884	-3.228						-3.13552	-1.706		
LTE B5	824 ~ 849	-1.891		-4.526									
LTE B7	2500 ~ 2570		0.185	-0.657						-0.50837	-1.117		
LTE B12	698 ~ 716	-2.135		-4.343									
LTE B13	777 ~ 787	-4.37		-8.13									
LTE B14	788 ~ 798	-4.37		-7.931									
LTE B17	704 ~ 716	-2.135		-4.343									
LTE B25	1850 ~ 1915		-1.887	-1.394						-2.89579			
LTE B26	814 ~ 849	-1.891		-4.526									
LTE B30	2305 ~ 2315		-1.326	-2.669						-1.28433			
LTE B66	1710 ~ 1780		-2.884	-2.478						-3.0668	-1.685		
LTE B71	663 ~ 698	-5.741		-7.388									
T-LTE B38	2570 ~ 2620		0.724	-0.912						-0.59557			
T-LTE B40	2300 ~ 2400		-1.326	-2.669						-1.28433			
T-LTE B41	2496 ~ 2690		1.143	-0.657						-0.59557			
T-LTE B42	3400 ~ 3600						0.313		0.5277			-2.493	-0.35195
T-LTE B43	3600 ~ 3800						-0.434		0.5277			-0.477	-0.161
T-LTE B48	3550 ~ 3700						-0.434		0.5277			-0.477	-0.161
5G FR1 Band													
Band	Freq. Range (MHz)	Gain (dBi)										
		Ant. 0	Ant. 1	Ant. 2	Ant. 3	Ant. 4	Ant. 5	Ant. 6	Ant. 7	Ant. 8	Ant. 9	Ant. 10	Ant. 11
n2	1850 ~ 1910		-1.887	-1.394						-2.89579	-1.804		
n5	824 ~ 849	-1.891		-4.526									
n7	2500 ~ 2570		0.185	-0.657						-0.50837	-1.117		
n12	699 ~ 716	-2.135		-4.343									
n13	777 ~ 787	-4.37		-8.13									
n14	788 ~ 798	-4.37		-7.931									
n25	1850 ~ 1915		-1.887	-1.394						-2.89579	-1.627		
n26	814 ~ 849	-1.891		-4.526									
n30	2305 ~ 2315		-1.326	-2.669						-1.28433			
n38	2570 ~ 2620		0.724	-0.912						-0.59557	-1.3		
n41	2496 ~ 2690		1.143	-0.657						-0.59557	-0.076		
n66	1710 ~ 1780		-2.884	-2.478						-3.0668	-1.685		
n71	663 ~ 698	-5.741		-7.388									
n77	3300 ~ 4200						0.313		0.5277			2.017	0.19902
n78	3300 ~ 3800						0.313		0.5277			2.017	-0.161

* The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.2 Configuration of System under Test



Remote site



3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Radio Communication Analyzer	Anritsu	MT8821C	6261806803	NA	For GSM, WCDMA, LTE
		R&S	CMU200	101095		For CMDA

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The worst case was found when positioned as the table below. Following channel(s) was (were) selected for the final test as listed below:

Band	Radiated Emission
CDMA	Y-plane
GSM	Y-plane
WCDMA Band 2	Y-plane
LTE Band 2	Y-plane
LTE Band 25	Y-plane

CDMA

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	EIRP	25 to 1175	25 (1851.25MHz), 600 (1880.00MHz), 1175 (1908.75MHz)	CDMA
-	Modulation Characteristics	25 to 1175	600 (1880.00MHz)	CDMA
-	Frequency Stability	25 to 1175	600 (1880.00MHz)	CDMA
-	Occupied Bandwidth	25 to 1175	25 (1851.25MHz), 600 (1880.00MHz), 1175 (1908.75MHz)	CDMA
-	Band Edge	25 to 1175	25 (1851.30MHz), 1175 (1908.75MHz)	CDMA
-	Peak To Average Ratio	25 to 1175	25 (1851.25MHz), 600 (1880.00MHz), 1175 (1908.75MHz)	CDMA
-	Conducted Emission	25 to 1175	25 (1851.25MHz), 600 (1880.00MHz), 1175 (1908.75MHz)	CDMA
-	Radiated Emission Below 1GHz	25 to 1175	600 (1880.00MHz)	CDMA
-	Radiated Emission Above 1GHz	1013 to 777	25 (1851.25MHz), 600 (1880.00MHz), 1175 (1908.75MHz)	CDMA

Note: For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.

GSM Mode

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	EIRP	512 to 810	512 (1850.2MHz), 661 (1880.0MHz), 810 (1909.8MHz)	GSM, GPRS, EDGE
-	Modulation Characteristics	512 to 810	661 (1880.0MHz)	GSM, GPRS, EDGE
-	Frequency Stability	512 to 810	512 (1850.2MHz), 810 (1909.8MHz)	GSM, EDGE
-	Occupied Bandwidth	512 to 810	512 (1850.2MHz), 661 (1880.0MHz), 810 (1909.8MHz)	GSM, GPRS, EDGE
-	Band Edge	512 to 810	512(1850.2MHz), 810(1909.8MHz)	GSM, GPRS, EDGE
-	Peak To Average Ratio	512 to 810	512 (1850.2MHz), 661 (1880.0MHz), 810 (1909.8MHz)	GSM, GPRS, EDGE
-	Conducted Emission	512 to 810	512 (1850.2MHz), 661 (1880.0MHz), 810 (1909.8MHz)	GSM, GPRS, EDGE
-	Radiated Emission Below 1GHz	512 to 810	810 (1909.8MHz)	GSM
			661 (1880.0MHz)	EDGE
-	Radiated Emission Above 1GHz	512 to 810	512 (1850.2MHz), 661 (1880.0MHz), 810 (1909.8MHz)	GSM, EDGE

Note: For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.

WCDMA Band 2

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	EIRP	9262 to 9538	9262 (1852.4MHz), 9400 (1880.0MHz), 9538 (1907.6MHz)	WCDMA, HSDPA, HSUPA
-	Modulation Characteristics	9262 to 9538	9400 (1880.0MHz)	WCDMA, HSDPA, HSUPA
-	Frequency Stability	9262 to 9538	9262 (1852.4MHz), 9538 (1907.6MHz)	WCDMA
-	Occupied Bandwidth	9262 to 9538	9262 (1852.4MHz), 9400 (1880.0MHz), 9538 (1907.6MHz)	WCDMA, HSDPA, HSUPA
-	Band Edge	9262 to 9538	9262 (1852.4MHz), 9538 (1907.6MHz)	WCDMA, HSDPA, HSUPA
-	Peak To Average Ratio	9262 to 9538	9262 (1852.4MHz), 9400 (1880.0MHz), 9538 (1907.6MHz)	WCDMA, HSDPA, HSUPA
-	Conducted Emission	9262 to 9538	9262 (1852.4MHz), 9400 (1880.0MHz), 9538 (1907.6MHz)	WCDMA, HSDPA, HSUPA
-	Radiated Emission Below 1GHz	9262 to 9538	9538 (1907.6MHz)	WCDMA
-	Radiated Emission Above 1GHz	9262 to 9538	9262 (1852.4MHz), 9400 (1880.0MHz), 9538 (1907.6MHz)	WCDMA

Note: For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.

LTE Band 2

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	18607 to 19193	18607 (1850.7MHz), 18900 (1880.0MHz), 19193 (1909.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 2 RB Offset 1 RB / 5 RB Offset 3 RB / 0 RB Offset 3 RB / 1 RB Offset 3 RB / 3 RB Offset 6 RB / 0 RB Offset
		18615 to 19185	18615 (1851.5MHz), 18900 (1880.0MHz), 19185 (1908.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 7 RB Offset 1 RB / 14 RB Offset 8 RB / 0 RB Offset 8 RB / 3 RB Offset 8 RB / 7 RB Offset 15 RB / 0 RB Offset
		18625 to 19175	18625 (1852.5MHz), 18900 (1880.0MHz), 19175 (1907.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		18650 to 19150	18650 (1855.0MHz), 18900 (1880.0MHz), 19150 (1905.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 1 RB / 49 RB Offset 25 RB / 0 RB Offset 25 RB / 12 RB Offset 25 RB / 25 RB Offset 50 RB / 0 RB Offset
		18675 to 19125	18675 (1857.5MHz), 18900 (1880.0MHz), 19125 (1902.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 37 RB Offset 1 RB / 74 RB Offset 36 RB / 0 RB Offset 36 RB / 19 RB Offset 36 RB / 39 RB Offset 75 RB / 0 RB Offset
		18700 to 19100	18700 (1860.0MHz), 18900 (1880.0MHz), 19100 (1900.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 50 RB Offset 1 RB / 99 RB Offset 50 RB / 0 RB Offset 50 RB / 25 RB Offset 50 RB / 50 RB Offset 100 RB / 0 RB Offset
-	Modulation Characteristics	18700 to 19100	18900 (1880.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	100 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Frequency Stability	18607 to 19193	18607 (1850.7MHz), 19193 (1909.3MHz)	1.4MHz	QPSK	6 RB / 0 RB Offset
		18615 to 19185	18615 (1851.5MHz), 19185 (1908.5MHz)	3MHz	QPSK	15 RB / 0 RB Offset
		18625 to 19175	18625 (1852.5MHz), 19175 (1907.5MHz)	5MHz	QPSK	25 RB / 0 RB Offset
		18650 to 19150	18650 (1855.0MHz), 19150 (1905.0MHz)	10MHz	QPSK	50 RB / 0 RB Offset
		18675 to 19125	18675 (1857.5MHz), 19125 (1902.5MHz)	15MHz	QPSK	75 RB / 0 RB Offset
		18700 to 19100	18700 (1860.0MHz), 19100 (1900.0MHz)	20MHz	QPSK	100 RB / 0 RB Offset
-	Occupied Bandwidth	18607 to 19193	18607 (1850.7MHz), 18900 (1880.0MHz), 19193 (1909.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	6 RB / 0RB Offset
		18615 to 19185	18615 (1851.5MHz), 18900 (1880.0MHz), 19185 (1908.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	15 RB / 0RB Offset
		18625 to 19175	18625 (1852.5MHz), 18900 (1880.0MHz), 19175 (1907.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	25RB / 0RB Offset
		18650 to 19150	18650 (1855.0MHz), 18900 (1880.0MHz), 19150 (1905.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	50RB / 0RB Offset
		18675 to 19125	18675 (1857.5MHz), 18900 (1880.0MHz), 19125 (1902.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	75 RB / 0 RB Offset
		18700 to 19100	18700 (1860.0MHz), 18900 (1880.0MHz), 19100 (1900.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	100 RB / 0 RB Offset
-	Band Edge	18607 to 19193	18607 (1850.7MHz), 19193 (1909.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset 1 RB / 5 RB Offset 6 RB / 0 RB Offset
		18615 to 19185	18615 (1851.5MHz), 19185 (1908.5MHz)	3MHz	QPSK	1 RB / 0 RB Offset 1 RB / 14 RB Offset 15 RB / 0 RB Offset
		18625 to 19175	18625 (1852.5MHz), 19175 (1907.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		18650 to 19150	18650 (1855.0MHz), 19150 (1905.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
		18675 to 19125	18675 (1857.5MHz), 19125 (1902.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 74 RB Offset 75 RB / 0 RB Offset
		18700 to 19100	18700 (1860.0MHz), 19100 (1900.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset 1 RB / 99 RB Offset 100 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Peak to Average Ratio	18607 to 19193	18607 (1850.7MHz), 18900 (1880.0MHz), 19193 (1909.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	3 RB / 0 RB Offset
		18615 to 19185	18615 (1851.5MHz), 18900 (1880.0MHz), 19185 (1908.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 14 RB Offset
		18625 to 19175	18625 (1852.5MHz), 18900 (1880.0MHz), 19175 (1907.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		18650 to 19150	18650 (1855.0MHz), 18900 (1880.0MHz), 19150 (1905.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		18675 to 19125	18675 (1857.5MHz), 18900 (1880.0MHz), 19125 (1902.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		18700 to 19100	18700 (1860.0MHz), 18900 (1880.0MHz), 19100 (1900.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
-	Conducted Emission	18607 to 19193	18607 (1850.7MHz), 18900 (1880.0MHz), 19193 (1909.3MHz)	1.4MHz	QPSK	3 RB / 0 RB Offset
		18615 to 19185	18615 (1851.5MHz), 18900 (1880.0MHz), 19185 (1908.5MHz)	3MHz	QPSK	1 RB / 14 RB Offset
		18625 to 19175	18625 (1852.5MHz), 18900 (1880.0MHz), 19175 (1907.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		18650 to 19150	18650 (1855.0MHz), 18900 (1880.0MHz), 19150 (1905.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset
		18675 to 19125	18675 (1857.5MHz), 18900 (1880.0MHz), 19125 (1902.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset
		18700 to 19100	18700 (1860.0MHz), 18900 (1880.0MHz), 19100 (1900.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission Below 1GHz	18700 to 19100	18900 (1880.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	18607 to 19193	18607 (1850.7MHz), 18900 (1880.0MHz), 19193 (1909.3MHz)	1.4MHz	QPSK	3 RB / 0 RB Offset
		18625 to 19175	18625 (1852.5MHz), 18900 (1880.0MHz), 19175 (1907.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		18700 to 19100	18700 (1860.0MHz), 18900 (1880.0MHz), 19100 (1900.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM, 64QAM and 256QAM, measured value of QPSK is higher than 16QAM, 64QAM and 256QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under QPSK mode only.

LTE Band 25

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	26047 to 26683	26047 (1850.7MHz), 26365 (1882.5MHz), 26683 (1914.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 2 RB Offset 1 RB / 5 RB Offset 3 RB / 0 RB Offset 3 RB / 1 RB Offset 3 RB / 3 RB Offset 6 RB / 0 RB Offset
		26055 to 26675	26055 (1851.5MHz), 26365 (1882.5MHz), 26675 (1913.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 7 RB Offset 1 RB / 14 RB Offset 8 RB / 0 RB Offset 8 RB / 3 RB Offset 8 RB / 7 RB Offset 15 RB / 0 RB Offset
		26065 to 26665	26065 (1852.5MHz), 26365 (1882.5MHz), 26665 (1912.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		26090 to 26640	26090 (1855.0MHz), 26365 (1882.5MHz), 26640 (1910.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 1 RB / 49 RB Offset 25 RB / 0 RB Offset 25 RB / 12 RB Offset 25 RB / 25 RB Offset 50 RB / 0 RB Offset
		26115 to 26615	26115 (1857.5MHz), 26365 (1882.5MHz), 26615 (1907.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 37 RB Offset 1 RB / 74 RB Offset 36 RB / 0 RB Offset 36 RB / 19 RB Offset 36 RB / 39 RB Offset 75 RB / 0 RB Offset
		26140 to 26590	26140 (1860.0MHz), 26365 (1882.5MHz), 26590 (1905.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 50 RB Offset 1 RB / 99 RB Offset 50 RB / 0 RB Offset 50 RB / 25 RB Offset 50 RB / 50 RB Offset 100 RB / 0 RB Offset
-	Modulation Characteristics	26140 to 26590	26365 (1882.5MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	100 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Frequency Stability	26047 to 26683	26047 (1850.7MHz), 26683 (1914.3MHz)	1.4MHz	QPSK	6 RB / 0 RB Offset
		26055 to 26675	26055 (1851.5MHz), 26675 (1913.5MHz)	3MHz	QPSK	15 RB / 0 RB Offset
		26065 to 26665	26065 (1852.5MHz), 26665 (1912.5MHz)	5MHz	QPSK	25 RB / 0 RB Offset
		26090 to 26640	26090 (1855.0MHz), 26640 (1910.0MHz)	10MHz	QPSK	50 RB / 0 RB Offset
		26115 to 26615	26115 (1857.5MHz), 26615 (1907.5MHz)	15MHz	QPSK	75 RB / 0 RB Offset
		26140 to 26590	26140 (1860.0MHz), 26590 (1905.0MHz)	20MHz	QPSK	100 RB / 0 RB Offset
-	Occupied Bandwidth	26047 to 26683	26047 (1850.7MHz), 26365 (1882.5MHz), 26683 (1914.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	6 RB / 0RB Offset
		26055 to 26675	26055 (1851.5MHz), 26365 (1882.5MHz), 26675 (1913.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	15 RB / 0RB Offset
		26065 to 26665	26065 (1852.5MHz), 26365 (1882.5MHz), 26665 (1912.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	25RB / 0RB Offset
		26090 to 26640	26090 (1855.0MHz), 26365 (1882.5MHz), 26640 (1910.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	50RB / 0RB Offset
		26115 to 26615	26115 (1857.5MHz), 26365 (1882.5MHz), 26615 (1907.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	75 RB / 0 RB Offset
		26140 to 26590	26140 (1860.0MHz), 26365 (1882.5MHz), 26590 (1905.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	100 RB / 0 RB Offset
-	Band Edge	26047 to 26683	26047 (1850.7MHz), 26683 (1914.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset 1 RB / 5 RB Offset 6 RB / 0 RB Offset
		26055 to 26675	26055 (1851.5MHz), 26675 (1913.5MHz)	3MHz	QPSK	1 RB / 0 RB Offset 1 RB / 14 RB Offset 15 RB / 0 RB Offset
		26065 to 26665	26065 (1852.5MHz), 26665 (1912.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		26090 to 26640	26090 (1855.0MHz), 26640 (1910.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
		26115 to 26615	26115 (1857.5MHz), 26615 (1907.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 74 RB Offset 75 RB / 0 RB Offset
		26140 to 26590	26140 (1860.0MHz), 26590 (1905.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset 1 RB / 99 RB Offset 100 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Peak to Average Ratio	26047 to 26683	26047 (1850.7MHz), 26365 (1882.5MHz), 26683 (1914.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		26055 to 26675	26055 (1851.5MHz), 26365 (1882.5MHz), 26675 (1913.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		26065 to 26665	26065 (1852.5MHz), 26365 (1882.5MHz), 26665 (1912.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		26090 to 26640	26090 (1855.0MHz), 26365 (1882.5MHz), 26640 (1910.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		26115 to 26615	26115 (1857.5MHz), 26365 (1882.5MHz), 26615 (1907.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		26140 to 26590	26140 (1860.0MHz), 26365 (1882.5MHz), 26590 (1905.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
-	Conducted Emission	26047 to 26683	26047 (1850.7MHz), 26365 (1882.5MHz), 26683 (1914.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset
		26055 to 26675	26055 (1851.5MHz), 26365 (1882.5MHz), 26675 (1913.5MHz)	3MHz	QPSK	1 RB / 0 RB Offset
		26065 to 26665	26065 (1852.5MHz), 26365 (1882.5MHz), 26665 (1912.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		26090 to 26640	26090 (1855.0MHz), 26365 (1882.5MHz), 26640 (1910.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset
		26115 to 26615	26115 (1857.5MHz), 26365 (1882.5MHz), 26615 (1907.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset
		26140 to 26590	26140 (1860.0MHz), 26365 (1882.5MHz), 26590 (1905.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission Below 1GHz	26140 to 26590	26590 (1905.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	26047 to 26683	26047 (1850.7MHz), 26365 (1882.5MHz), 26683 (1914.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset
		26065 to 26665	26065 (1852.5MHz), 26365 (1882.5MHz), 26665 (1912.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		26140 to 26590	26140 (1860.0MHz), 26365 (1882.5MHz), 26590 (1905.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM, 64QAM and 256QAM, measured value of QPSK is higher than 16QAM, 64QAM and 256QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under QPSK mode only.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
EIRP	25deg. C, 60%RH	120Vac, 60Hz	Willy Cheng
Modulation Characteristics	25deg. C, 60%RH	120Vac, 60Hz	Willy Cheng
Frequency Stability	25deg. C, 60%RH	7.74Vdc	Willy Cheng
Occupied Bandwidth	25deg. C, 60%RH	120Vac, 60Hz	Willy Cheng
Band Edge	25deg. C, 60%RH	120Vac, 60Hz	Willy Cheng
Peak To Average Ratio	25deg. C, 60%RH	120Vac, 60Hz	Willy Cheng
Conducted Emission	25deg. C, 60%RH	120Vac, 60Hz	Willy Cheng
Radiated Emission	22deg. C, 66%RH	120Vac, 60Hz	Rex Wang

3.4 EUT Operating Conditions

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

3.5 General Description of Applied Standards and References

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test Standard:

FCC 47 CFR Part 2

FCC 47 CFR Part 24

ANSI/TIA/EIA-603-E 2016

ANSI 63.26-2015

References Test Guidance:

KDB 971168 D01 Power Meas License Digital Systems v03r01

All test items have been performed and recorded as per the above standards.

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

Mobile / Portable station are limited to 2 watts e.i.r.p.

4.1.2 Test Procedures

Conducted Power Measurement:

The EUT was set up for the maximum power with CDMA, GSM, WCDMA, LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

Maximum EIRP / ERP

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation as follows:

$EIRP = P_{Meas} + G_T$

$ERP = P_{Meas} + G_T - 2.15$

where

ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas}, e.g., dBm or dBW)

P_{Meas} measured transmitter output power or PSD, in dBm or dBW

G_T gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

4.1.3 Test Setup

Conducted Power Measurement:

4.1.4 Test Results

Conducted Output Power (dBm)

Band	CDMA2000 BC1		
Channel	25	600	1175
Frequency	1851.25	1880	1908.75
RC1+SO55	23.87	23.86	23.91
RC3+SO55	23.85	23.84	23.93
RC3+SO32(+ F-SCH)	23.81	23.80	23.87
RC3+SO32(+SCH)	23.83	23.82	23.89
RC1+SO3, 1/8 Rate	23.82	23.81	23.88
RTAP 153.6	23.85	23.84	23.91
RETAP 4096	23.78	23.77	23.84

Band	GSM1900		
Channel	512	661	810
Frequency	1850.2	1880	1909.8
GSM	29.92	29.95	29.99
GPRS 1Tx Slot	29.89	29.93	29.96
GPRS 2Tx Slot	29.79	29.88	29.91
GPRS 3Tx Slot	29.69	29.71	29.80
GPRS 4Tx Slot	29.88	29.92	29.95
EDGE 1Tx Slot (MCS9)	25.92	25.94	25.97
EDGE 2Tx Slot (MCS9)	25.86	25.89	25.95
EDGE 3Tx Slot (MCS9)	25.89	25.94	25.97
EDGE 4Tx Slot (MCS9)	25.66	25.74	25.82

Band	WCDMA II		
TX Channel	9262	9400	9538
Rx Channel	9662	9800	9938
Frequency	1852.4	1880	1907.6
RMC 12.2K	23.22	23.29	23.31
HSDPA Subtest-1	22.20	22.14	22.11
HSDPA Subtest-2	22.23	22.17	22.14
HSDPA Subtest-3	21.76	21.70	21.67
HSDPA Subtest-4	21.74	21.68	21.65
DC-HSDPA Subtest-1	22.12	22.06	22.03
DC-HSDPA Subtest-2	22.15	22.09	22.06
DC-HSDPA Subtest-3	21.68	21.62	21.59
DC-HSDPA Subtest-4	21.66	21.60	21.57
HSUPA Subtest-1	22.22	22.16	22.13
HSUPA Subtest-2	20.26	20.20	20.17
HSUPA Subtest-3	21.21	21.15	21.12
HSUPA Subtest-4	20.25	20.19	20.16
HSUPA Subtest-5	22.23	22.17	22.14

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18700	18900	19100
		Frequency (MHz)		1860	1880	1900
20M	QPSK	1	0	23.93	23.82	23.91
		1	50	23.88	23.79	23.85
		1	99	23.84	23.75	23.81
		50	0	22.92	22.83	22.89
		50	25	22.90	22.81	22.87
		50	50	22.86	22.77	22.83
		100	0	22.88	22.79	22.85
20M	16QAM	1	0	22.99	22.98	22.98
		1	50	22.87	22.86	22.86
		1	99	22.82	22.81	22.81
		50	0	21.79	21.78	21.78
		50	25	21.72	21.71	21.71
		50	50	21.70	21.69	21.69
		100	0	21.74	21.73	21.73
20M	64QAM	1	0	21.88	21.87	21.87
		1	50	21.86	21.85	21.85
		1	99	21.82	21.81	21.81
		50	0	20.84	20.83	20.83
		50	25	20.76	20.75	20.75
		50	50	20.74	20.73	20.73
		100	0	20.83	20.82	20.82
20M	256QAM	1	0	18.71	18.56	18.56
		1	50	18.32	18.54	18.54
		1	99	18.49	18.26	18.30
		50	0	18.30	18.43	18.24
		50	25	18.41	18.37	18.49
		50	50	18.58	18.49	18.37
		100	0	18.43	18.37	18.30

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18675	18900	19125
		Frequency (MHz)		1857.5	1880	1902.5
15M	QPSK	1	0	23.87	23.74	23.91
		1	37	23.85	23.73	23.81
		1	74	23.78	23.67	23.71
		36	0	22.83	22.75	22.86
		36	19	22.87	22.74	22.86
		36	39	22.85	22.76	22.80
		75	0	22.84	22.76	22.79
15M	16QAM	1	0	22.95	22.98	22.89
		1	37	22.85	22.76	22.79
		1	74	22.74	22.72	22.71
		36	0	21.75	21.76	21.71
		36	19	21.64	21.65	21.62
		36	39	21.66	21.69	21.69
		75	0	21.72	21.72	21.69
15M	64QAM	1	0	21.86	21.87	21.84
		1	37	21.76	21.80	21.81
		1	74	21.82	21.74	21.75
		36	0	20.82	20.82	20.78
		36	19	20.73	20.65	20.69
		36	39	20.65	20.65	20.67
		75	0	20.81	20.78	20.80
15M	256QAM	1	0	18.51	18.19	18.67
		1	37	18.42	18.28	18.38
		1	74	18.30	18.43	18.52
		36	0	17.60	17.39	17.56
		36	19	17.41	17.17	17.47
		36	39	17.58	17.53	17.46
		75	0	17.38	17.24	17.40

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18650	18900	19150
		Frequency (MHz)		1855	1880	1905
10M	QPSK	1	0	23.76	23.80	23.81
		1	24	23.74	23.75	23.72
		1	49	23.70	23.56	23.70
		25	0	22.82	22.66	22.82
		25	12	22.68	22.60	22.81
		25	25	22.73	22.69	22.73
		50	0	22.66	22.66	22.72
10M	16QAM	1	0	22.87	22.91	22.81
		1	24	22.69	22.76	22.66
		1	49	22.80	22.71	22.73
		25	0	21.61	21.70	21.65
		25	12	21.61	21.53	21.53
		25	25	21.67	21.49	21.57
		50	0	21.56	21.59	21.61
10M	64QAM	1	0	21.78	21.68	21.77
		1	24	21.65	21.69	21.65
		1	49	21.67	21.60	21.62
		25	0	20.78	20.59	20.78
		25	12	20.61	20.65	20.61
		25	25	20.72	20.72	20.59
		50	0	20.74	20.62	20.75
10M	256QAM	1	0	18.45	18.63	18.62
		1	24	18.17	18.23	18.27
		1	49	18.20	18.37	18.18
		25	0	17.45	17.27	17.41
		25	12	17.20	17.40	17.24
		25	25	17.43	17.44	17.30
		50	0	17.27	17.18	17.40

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18625	18900	19175
		Frequency (MHz)		1852.5	1880	1907.5
5M	QPSK	1	0	23.85	23.75	23.58
		1	12	23.76	23.72	23.55
		1	24	23.69	23.65	23.58
		12	0	22.81	22.73	22.81
		12	6	22.73	22.64	22.74
		12	13	22.74	22.54	22.61
		25	0	22.81	22.70	22.63
5M	16QAM	1	0	22.84	22.92	22.87
		1	12	22.81	22.81	22.69
		1	24	22.67	22.70	22.80
		12	0	21.59	21.59	21.66
		12	6	21.61	21.57	21.54
		12	13	21.60	21.61	21.57
		25	0	21.61	21.60	21.63
5M	64QAM	1	0	21.75	21.80	21.63
		1	12	21.83	21.65	21.72
		1	24	21.76	21.69	21.76
		12	0	20.79	20.64	20.71
		12	6	20.60	20.57	20.63
		12	13	20.57	20.56	20.61
		25	0	20.73	20.65	20.69
5M	256QAM	1	0	18.35	18.39	18.37
		1	12	18.19	18.39	18.08
		1	24	18.45	18.34	18.13
		12	0	17.56	17.48	17.42
		12	6	17.48	17.12	17.38
		12	13	17.24	17.11	17.11
		25	0	17.60	17.25	17.20

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18615	18900	19185
		Frequency (MHz)		1851.5	1880	1908.5
3M	QPSK	1	0	23.77	23.72	23.79
		1	7	23.66	23.60	23.72
		1	14	23.79	23.71	23.71
		8	0	22.90	22.71	22.69
		8	3	22.73	22.68	22.80
		8	7	22.76	22.63	22.68
		15	0	22.83	22.75	22.75
3M	16QAM	1	0	22.82	22.95	22.90
		1	7	22.81	22.78	22.70
		1	14	22.79	22.70	22.71
		8	0	21.69	21.68	21.62
		8	3	21.55	21.57	21.49
		8	7	21.53	21.56	21.65
		15	0	21.64	21.54	21.55
3M	64QAM	1	0	21.78	21.70	21.71
		1	7	21.78	21.84	21.77
		1	14	21.59	21.67	21.72
		8	0	20.64	20.67	20.64
		8	3	20.62	20.60	20.66
		8	7	20.56	20.66	20.58
		15	0	20.77	20.72	20.67
3M	256QAM	1	0	18.44	18.36	18.31
		1	7	18.38	18.25	18.29
		1	14	18.60	18.33	18.43
		8	0	17.40	17.26	17.17
		8	3	17.43	17.16	17.62
		8	7	17.60	17.38	17.48
		15	0	17.49	17.18	17.52

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18607	18900	19193
		Frequency (MHz)		1850.7	1880	1909.3
1.4M	QPSK	1	0	23.79	23.65	23.81
		1	2	23.76	23.73	23.76
		1	5	23.77	23.55	23.64
		3	0	23.82	23.77	23.77
		3	1	23.72	23.70	23.73
		3	3	23.79	23.67	23.68
		6	0	22.73	22.69	22.80
1.4M	16QAM	1	0	22.96	22.85	22.80
		1	2	22.64	22.68	22.72
		1	5	22.69	22.66	22.70
		3	0	22.65	22.55	22.69
		3	1	22.57	22.63	22.63
		3	3	22.54	22.62	22.63
		6	0	21.57	21.62	21.64
1.4M	64QAM	1	0	21.76	21.64	21.76
		1	2	21.66	21.67	21.75
		1	5	21.68	21.63	21.63
		3	0	21.64	21.62	21.66
		3	1	21.73	21.67	21.56
		3	3	21.63	21.54	21.55
		6	0	20.73	20.72	20.74
1.4M	256QAM	1	0	18.34	18.11	18.62
		1	2	18.36	18.42	18.57
		1	5	18.22	18.27	18.19
		3	0	18.49	18.53	18.51
		3	1	18.55	18.39	18.26
		3	3	18.48	18.24	18.21
		6	0	17.32	17.42	17.30

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26140	26365	26590
		Frequency (MHz)		1860	1882.5	1905
20M	QPSK	1	0	23.66	23.79	23.74
		1	50	23.54	23.67	23.62
		1	99	23.53	23.66	23.61
		50	0	22.67	22.80	22.75
		50	25	22.65	22.78	22.73
		50	50	22.63	22.76	22.71
		100	0	22.65	22.78	22.73
20M	16QAM	1	0	22.59	22.72	22.67
		1	50	22.58	22.71	22.66
		1	99	22.55	22.68	22.63
		50	0	21.68	21.81	21.76
		50	25	21.66	21.79	21.74
		50	50	21.64	21.77	21.72
		100	0	21.58	21.71	21.66
20M	64QAM	1	0	21.66	21.79	21.74
		1	50	21.65	21.78	21.73
		1	99	21.49	21.62	21.57
		50	0	20.68	20.81	20.76
		50	25	20.63	20.76	20.71
		50	50	20.62	20.75	20.70
		100	0	20.68	20.81	20.76
20M	256QAM	1	0	18.40	18.41	18.17
		1	50	18.12	18.15	18.43
		1	99	18.22	18.33	18.14
		50	0	17.47	17.37	17.43
		50	25	17.20	17.44	17.48
		50	50	17.15	17.37	17.16
		100	0	17.26	17.44	17.39

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26115	26365	26615
		Frequency (MHz)		1857.5	1882.5	1907.5
15M	QPSK	1	0	23.61	23.70	23.70
		1	37	23.52	23.60	23.54
		1	74	23.48	23.62	23.55
		36	0	22.57	22.74	22.72
		36	19	22.61	22.69	22.73
		36	39	22.58	22.72	22.71
		75	0	22.60	22.69	22.63
15M	16QAM	1	0	22.50	22.68	22.59
		1	37	22.55	22.68	22.58
		1	74	22.48	22.68	22.61
		36	0	21.58	21.75	21.66
		36	19	21.66	21.73	21.71
		36	39	21.58	21.77	21.63
		75	0	21.55	21.62	21.66
15M	64QAM	1	0	21.65	21.72	21.67
		1	37	21.61	21.68	21.69
		1	74	21.46	21.60	21.56
		36	0	20.64	20.73	20.75
		36	19	20.54	20.69	20.66
		36	39	20.59	20.69	20.65
		75	0	20.66	20.74	20.72
15M	256QAM	1	0	18.21	18.27	18.53
		1	37	17.93	18.18	18.00
		1	74	18.13	18.22	18.34
		36	0	17.10	17.17	17.49
		36	19	17.16	17.37	17.48
		36	39	17.17	17.15	17.26
		75	0	17.42	17.53	17.47

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26090	26365	26640
		Frequency (MHz)		1855	1882.5	1910
10M	QPSK	1	0	23.58	23.75	23.57
		1	24	23.39	23.54	23.51
		1	49	23.46	23.43	23.54
		25	0	22.59	22.66	22.63
		25	12	22.46	22.64	22.57
		25	25	22.52	22.55	22.65
		50	0	22.58	22.71	22.58
10M	16QAM	1	0	22.41	22.53	22.46
		1	24	22.44	22.68	22.47
		1	49	22.30	22.56	22.43
		25	0	21.57	21.66	21.54
		25	12	21.52	21.59	21.68
		25	25	21.61	21.59	21.62
		50	0	21.50	21.67	21.51
10M	64QAM	1	0	21.60	21.74	21.54
		1	24	21.48	21.75	21.70
		1	49	21.43	21.47	21.47
		25	0	20.55	20.65	20.52
		25	12	20.50	20.57	20.57
		25	25	20.59	20.59	20.55
		50	0	20.52	20.71	20.61
10M	256QAM	1	0	18.37	18.49	18.12
		1	24	17.85	18.35	18.09
		1	49	18.01	17.87	18.14
		25	0	17.09	17.12	17.34
		25	12	17.17	17.28	17.21
		25	25	17.27	17.19	17.13
		50	0	17.29	17.26	17.20

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26065	26365	26665
		Frequency (MHz)		1852.5	1882.5	1912.5
5M	QPSK	1	0	23.58	23.57	23.59
		1	12	23.39	23.48	23.34
		1	24	23.41	23.49	23.45
		12	0	22.60	22.67	22.55
		12	6	22.64	22.78	22.57
		12	13	22.46	22.69	22.43
		25	0	22.54	22.64	22.55
5M	16QAM	1	0	22.40	22.62	22.55
		1	12	22.50	22.55	22.51
		1	24	22.33	22.56	22.58
		12	0	21.55	21.75	21.67
		12	6	21.53	21.69	21.69
		12	13	21.45	21.73	21.53
		25	0	21.46	21.53	21.48
5M	64QAM	1	0	21.54	21.58	21.54
		1	12	21.55	21.62	21.55
		1	24	21.31	21.59	21.49
		12	0	20.51	20.67	20.61
		12	6	20.46	20.70	20.61
		12	13	20.44	20.71	20.61
		25	0	20.48	20.65	20.62
5M	256QAM	1	0	18.27	18.15	18.38
		1	12	17.97	18.25	17.94
		1	24	18.08	18.04	17.93
		12	0	17.37	17.44	17.35
		12	6	17.07	17.30	17.10
		12	13	17.08	17.17	17.23
		25	0	17.11	17.37	17.01

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26055	26365	26675
		Frequency (MHz)		1851.5	1882.5	1913.5
3M	QPSK	1	0	23.46	23.60	23.56
		1	7	23.38	23.52	23.46
		1	14	23.37	23.51	23.49
		8	0	22.51	22.75	22.56
		8	3	22.52	22.62	22.66
		8	7	22.50	22.59	22.53
		15	0	22.49	22.69	22.63
3M	16QAM	1	0	22.51	22.63	22.58
		1	7	22.46	22.56	22.51
		1	14	22.49	22.49	22.52
		8	0	21.48	21.71	21.59
		8	3	21.58	21.69	21.52
		8	7	21.46	21.61	21.58
		15	0	21.43	21.53	21.55
3M	64QAM	1	0	21.59	21.58	21.55
		1	7	21.60	21.65	21.61
		1	14	21.46	21.37	21.34
		8	0	20.48	20.68	20.57
		8	3	20.50	20.67	20.56
		8	7	20.53	20.61	20.60
		15	0	20.56	20.65	20.62
3M	256QAM	1	0	17.94	18.20	18.28
		1	7	17.84	18.17	17.92
		1	14	17.93	17.92	18.14
		8	0	17.17	17.20	17.13
		8	3	17.34	17.33	17.34
		8	7	17.30	17.03	17.37
		15	0	17.29	17.46	17.34

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26047	26365	26683
		Frequency (MHz)		1850.7	1882.5	1914.3
1.4M	QPSK	1	0	23.52	23.65	23.71
		1	2	23.45	23.52	23.56
		1	5	23.40	23.44	23.44
		3	0	23.60	23.61	23.54
		3	1	23.50	23.70	23.67
		3	3	23.56	23.61	23.51
		6	0	22.56	22.71	22.66
1.4M	16QAM	1	0	22.41	22.63	22.59
		1	2	22.39	22.66	22.53
		1	5	22.47	22.60	22.47
		3	0	22.68	22.73	22.56
		3	1	22.58	22.73	22.61
		3	3	22.54	22.64	22.62
		6	0	21.36	21.49	21.47
1.4M	64QAM	1	0	21.59	21.64	21.69
		1	2	21.43	21.73	21.64
		1	5	21.30	21.46	21.47
		3	0	21.51	21.70	21.68
		3	1	21.48	21.71	21.58
		3	3	21.46	21.58	21.53
		6	0	20.58	20.60	20.60
1.4M	256QAM	1	0	18.05	18.11	18.35
		1	2	17.98	18.26	18.11
		1	5	18.12	18.25	17.88
		3	0	18.20	18.42	18.16
		3	1	18.22	18.37	18.22
		3	3	18.23	18.28	17.97
		6	0	17.09	17.37	17.25

EIRP Power (dBm)

Band	CDMA2000 BC1		
Channel	25	600	1175
Frequency	1851.25	1880	1908.75
RC1+SO55	22.48	22.47	22.52
RC3+SO55	22.46	22.45	22.54
RC3+SO32(+ F-SCH)	22.42	22.41	22.48
RC3+SO32(+SCH)	22.44	22.43	22.50
RC1+SO3, 1/8 Rate	22.43	22.42	22.49
RTAP 153.6	22.46	22.45	22.52
RETAP 4096	22.39	22.38	22.45

Band	GSM1900		
Channel	512	661	810
Frequency	1850.2	1880	1909.8
GSM	28.53	28.56	28.60
GPRS 1Tx Slot	28.50	28.54	28.57
GPRS 2Tx Slot	28.40	28.49	28.52
GPRS 3Tx Slot	28.30	28.32	28.41
GPRS 4Tx Slot	28.49	28.53	28.56
EDGE 1Tx Slot (MCS9)	24.53	24.55	24.58
EDGE 2Tx Slot (MCS9)	24.47	24.50	24.56
EDGE 3Tx Slot (MCS9)	24.50	24.55	24.58
EDGE 4Tx Slot (MCS9)	24.27	24.35	24.43

Band	WCDMA II		
TX Channel	9262	9400	9538
Rx Channel	9662	9800	9938
Frequency	1852.4	1880	1907.6
RMC 12.2K	21.83	21.90	21.92
HSDPA Subtest-1	20.81	20.75	20.72
HSDPA Subtest-2	20.84	20.78	20.75
HSDPA Subtest-3	20.37	20.31	20.28
HSDPA Subtest-4	20.35	20.29	20.26
DC-HSDPA Subtest-1	20.73	20.67	20.64
DC-HSDPA Subtest-2	20.76	20.70	20.67
DC-HSDPA Subtest-3	20.29	20.23	20.20
DC-HSDPA Subtest-4	20.27	20.21	20.18
HSUPA Subtest-1	20.83	20.77	20.74
HSUPA Subtest-2	18.87	18.81	18.78
HSUPA Subtest-3	19.82	19.76	19.73
HSUPA Subtest-4	18.86	18.80	18.77
HSUPA Subtest-5	20.84	20.78	20.75

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18700	18900	19100
		Frequency (MHz)		1860	1880	1900
20M	QPSK	1	0	22.54	22.43	22.52
		1	50	22.49	22.40	22.46
		1	99	22.45	22.36	22.42
		50	0	21.53	21.44	21.50
		50	25	21.51	21.42	21.48
		50	50	21.47	21.38	21.44
		100	0	21.49	21.40	21.46
20M	16QAM	1	0	21.60	21.59	21.59
		1	50	21.48	21.47	21.47
		1	99	21.43	21.42	21.42
		50	0	20.40	20.39	20.39
		50	25	20.33	20.32	20.32
		50	50	20.31	20.30	20.30
		100	0	20.35	20.34	20.34
20M	64QAM	1	0	20.49	20.48	20.48
		1	50	20.47	20.46	20.46
		1	99	20.43	20.42	20.42
		50	0	19.45	19.44	19.44
		50	25	19.37	19.36	19.36
		50	50	19.35	19.34	19.34
		100	0	19.44	19.43	19.43
20M	256QAM	1	0	17.32	17.17	17.17
		1	50	16.93	17.15	17.15
		1	99	17.10	16.87	16.91
		50	0	16.91	17.04	16.85
		50	25	17.02	16.98	17.10
		50	50	17.19	17.10	16.98
		100	0	17.04	16.98	16.91

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18675	18900	19125
		Frequency (MHz)		1857.5	1880	1902.5
15M	QPSK	1	0	22.48	22.35	22.52
		1	37	22.46	22.34	22.42
		1	74	22.39	22.28	22.32
		36	0	21.44	21.36	21.47
		36	19	21.48	21.35	21.47
		36	39	21.46	21.37	21.41
		75	0	21.45	21.37	21.40
15M	16QAM	1	0	21.56	21.59	21.50
		1	37	21.46	21.37	21.40
		1	74	21.35	21.33	21.32
		36	0	20.36	20.37	20.32
		36	19	20.25	20.26	20.23
		36	39	20.27	20.30	20.30
		75	0	20.33	20.33	20.30
15M	64QAM	1	0	20.47	20.48	20.45
		1	37	20.37	20.41	20.42
		1	74	20.43	20.35	20.36
		36	0	19.43	19.43	19.39
		36	19	19.34	19.26	19.30
		36	39	19.26	19.26	19.28
		75	0	19.42	19.39	19.41
15M	256QAM	1	0	17.12	16.80	17.28
		1	37	17.03	16.89	16.99
		1	74	16.91	17.04	17.13
		36	0	16.21	16.00	16.17
		36	19	16.02	15.78	16.08
		36	39	16.19	16.14	16.07
		75	0	15.99	15.85	16.01

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18650	18900	19150
		Frequency (MHz)		1855	1880	1905
10M	QPSK	1	0	22.37	22.41	22.42
		1	24	22.35	22.36	22.33
		1	49	22.31	22.17	22.31
		25	0	21.43	21.27	21.43
		25	12	21.29	21.21	21.42
		25	25	21.34	21.30	21.34
		50	0	21.27	21.27	21.33
10M	16QAM	1	0	21.48	21.52	21.42
		1	24	21.30	21.37	21.27
		1	49	21.41	21.32	21.34
		25	0	20.22	20.31	20.26
		25	12	20.22	20.14	20.14
		25	25	20.28	20.10	20.18
		50	0	20.17	20.20	20.22
10M	64QAM	1	0	20.39	20.29	20.38
		1	24	20.26	20.30	20.26
		1	49	20.28	20.21	20.23
		25	0	19.39	19.20	19.39
		25	12	19.22	19.26	19.22
		25	25	19.33	19.33	19.20
		50	0	19.35	19.23	19.36
10M	256QAM	1	0	17.06	17.24	17.23
		1	24	16.78	16.84	16.88
		1	49	16.81	16.98	16.79
		25	0	16.06	15.88	16.02
		25	12	15.81	16.01	15.85
		25	25	16.04	16.05	15.91
		50	0	15.88	15.79	16.01

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18625	18900	19175
		Frequency (MHz)		1852.5	1880	1907.5
5M	QPSK	1	0	22.46	22.36	22.19
		1	12	22.37	22.33	22.16
		1	24	22.30	22.26	22.19
		12	0	21.42	21.34	21.42
		12	6	21.34	21.25	21.35
		12	13	21.35	21.15	21.22
		25	0	21.42	21.31	21.24
5M	16QAM	1	0	21.45	21.53	21.48
		1	12	21.42	21.42	21.30
		1	24	21.28	21.31	21.41
		12	0	20.20	20.20	20.27
		12	6	20.22	20.18	20.15
		12	13	20.21	20.22	20.18
		25	0	20.22	20.21	20.24
5M	64QAM	1	0	20.36	20.41	20.24
		1	12	20.44	20.26	20.33
		1	24	20.37	20.30	20.37
		12	0	19.40	19.25	19.32
		12	6	19.21	19.18	19.24
		12	13	19.18	19.17	19.22
		25	0	19.34	19.26	19.30
5M	256QAM	1	0	16.96	17.00	16.98
		1	12	16.80	17.00	16.69
		1	24	17.06	16.95	16.74
		12	0	16.17	16.09	16.03
		12	6	16.09	15.73	15.99
		12	13	15.85	15.72	15.72
		25	0	16.21	15.86	15.81

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18615	18900	19185
		Frequency (MHz)		1851.5	1880	1908.5
3M	QPSK	1	0	22.38	22.33	22.40
		1	7	22.27	22.21	22.33
		1	14	22.40	22.32	22.32
		8	0	21.51	21.32	21.30
		8	3	21.34	21.29	21.41
		8	7	21.37	21.24	21.29
		15	0	21.44	21.36	21.36
3M	16QAM	1	0	21.43	21.56	21.51
		1	7	21.42	21.39	21.31
		1	14	21.40	21.31	21.32
		8	0	20.30	20.29	20.23
		8	3	20.16	20.18	20.10
		8	7	20.14	20.17	20.26
		15	0	20.25	20.15	20.16
3M	64QAM	1	0	20.39	20.31	20.32
		1	7	20.39	20.45	20.38
		1	14	20.20	20.28	20.33
		8	0	19.25	19.28	19.25
		8	3	19.23	19.21	19.27
		8	7	19.17	19.27	19.19
		15	0	19.38	19.33	19.28
3M	256QAM	1	0	17.05	16.97	16.92
		1	7	16.99	16.86	16.90
		1	14	17.21	16.94	17.04
		8	0	16.01	15.87	15.78
		8	3	16.04	15.77	16.23
		8	7	16.21	15.99	16.09
		15	0	16.10	15.79	16.13

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18607	18900	19193
		Frequency (MHz)		1850.7	1880	1909.3
1.4M	QPSK	1	0	22.40	22.26	22.42
		1	2	22.37	22.34	22.37
		1	5	22.38	22.16	22.25
		3	0	22.43	22.38	22.38
		3	1	22.33	22.31	22.34
		3	3	22.40	22.28	22.29
		6	0	21.34	21.30	21.41
1.4M	16QAM	1	0	21.57	21.46	21.41
		1	2	21.25	21.29	21.33
		1	5	21.30	21.27	21.31
		3	0	21.26	21.16	21.30
		3	1	21.18	21.24	21.24
		3	3	21.15	21.23	21.24
		6	0	20.18	20.23	20.25
1.4M	64QAM	1	0	20.37	20.25	20.37
		1	2	20.27	20.28	20.36
		1	5	20.29	20.24	20.24
		3	0	20.25	20.23	20.27
		3	1	20.34	20.28	20.17
		3	3	20.24	20.15	20.16
		6	0	19.34	19.33	19.35
1.4M	256QAM	1	0	16.95	16.72	17.23
		1	2	16.97	17.03	17.18
		1	5	16.83	16.88	16.80
		3	0	17.10	17.14	17.12
		3	1	17.16	17.00	16.87
		3	3	17.09	16.85	16.82
		6	0	15.93	16.03	15.91

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26140	26365	26590
		Frequency (MHz)		1860	1882.5	1905
20M	QPSK	1	0	22.27	22.40	22.35
		1	50	22.15	22.28	22.23
		1	99	22.14	22.27	22.22
		50	0	21.28	21.41	21.36
		50	25	21.26	21.39	21.34
		50	50	21.24	21.37	21.32
		100	0	21.26	21.39	21.34
20M	16QAM	1	0	21.20	21.33	21.28
		1	50	21.19	21.32	21.27
		1	99	21.16	21.29	21.24
		50	0	20.29	20.42	20.37
		50	25	20.27	20.40	20.35
		50	50	20.25	20.38	20.33
		100	0	20.19	20.32	20.27
20M	64QAM	1	0	20.27	20.40	20.35
		1	50	20.26	20.39	20.34
		1	99	20.10	20.23	20.18
		50	0	19.29	19.42	19.37
		50	25	19.24	19.37	19.32
		50	50	19.23	19.36	19.31
		100	0	19.29	19.42	19.37
20M	256QAM	1	0	17.01	17.02	16.78
		1	50	16.73	16.76	17.04
		1	99	16.83	16.94	16.75
		50	0	16.08	15.98	16.04
		50	25	15.81	16.05	16.09
		50	50	15.76	15.98	15.77
		100	0	15.87	16.05	16.00

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26115	26365	26615
		Frequency (MHz)		1857.5	1882.5	1907.5
15M	QPSK	1	0	22.22	22.31	22.31
		1	37	22.13	22.21	22.15
		1	74	22.09	22.23	22.16
		36	0	21.18	21.35	21.33
		36	19	21.22	21.30	21.34
		36	39	21.19	21.33	21.32
		75	0	21.21	21.30	21.24
15M	16QAM	1	0	21.11	21.29	21.20
		1	37	21.16	21.29	21.19
		1	74	21.09	21.29	21.22
		36	0	20.19	20.36	20.27
		36	19	20.27	20.34	20.32
		36	39	20.19	20.38	20.24
		75	0	20.16	20.23	20.27
15M	64QAM	1	0	20.26	20.33	20.28
		1	37	20.22	20.29	20.30
		1	74	20.07	20.21	20.17
		36	0	19.25	19.34	19.36
		36	19	19.15	19.30	19.27
		36	39	19.20	19.30	19.26
		75	0	19.27	19.35	19.33
15M	256QAM	1	0	16.82	16.88	17.14
		1	37	16.54	16.79	16.61
		1	74	16.74	16.83	16.95
		36	0	15.71	15.78	16.10
		36	19	15.77	15.98	16.09
		36	39	15.78	15.76	15.87
		75	0	16.03	16.14	16.08

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26090	26365	26640
		Frequency (MHz)		1855	1882.5	1910
10M	QPSK	1	0	22.19	22.36	22.18
		1	24	22.00	22.15	22.12
		1	49	22.07	22.04	22.15
		25	0	21.20	21.27	21.24
		25	12	21.07	21.25	21.18
		25	25	21.13	21.16	21.26
		50	0	21.19	21.32	21.19
10M	16QAM	1	0	21.02	21.14	21.07
		1	24	21.05	21.29	21.08
		1	49	20.91	21.17	21.04
		25	0	20.18	20.27	20.15
		25	12	20.13	20.20	20.29
		25	25	20.22	20.20	20.23
		50	0	20.11	20.28	20.12
10M	64QAM	1	0	20.21	20.35	20.15
		1	24	20.09	20.36	20.31
		1	49	20.04	20.08	20.08
		25	0	19.16	19.26	19.13
		25	12	19.11	19.18	19.18
		25	25	19.20	19.20	19.16
		50	0	19.13	19.32	19.22
10M	256QAM	1	0	16.98	17.10	16.73
		1	24	16.46	16.96	16.70
		1	49	16.62	16.48	16.75
		25	0	15.70	15.73	15.95
		25	12	15.78	15.89	15.82
		25	25	15.88	15.80	15.74
		50	0	15.90	15.87	15.81

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26065	26365	26665
		Frequency (MHz)		1852.5	1882.5	1912.5
5M	QPSK	1	0	22.19	22.18	22.20
		1	12	22.00	22.09	21.95
		1	24	22.02	22.10	22.06
		12	0	21.21	21.28	21.16
		12	6	21.25	21.39	21.18
		12	13	21.07	21.30	21.04
		25	0	21.15	21.25	21.16
5M	16QAM	1	0	21.01	21.23	21.16
		1	12	21.11	21.16	21.12
		1	24	20.94	21.17	21.19
		12	0	20.16	20.36	20.28
		12	6	20.14	20.30	20.30
		12	13	20.06	20.34	20.14
		25	0	20.07	20.14	20.09
5M	64QAM	1	0	20.15	20.19	20.15
		1	12	20.16	20.23	20.16
		1	24	19.92	20.20	20.10
		12	0	19.12	19.28	19.22
		12	6	19.07	19.31	19.22
		12	13	19.05	19.32	19.22
		25	0	19.09	19.26	19.23
5M	256QAM	1	0	16.88	16.76	16.99
		1	12	16.58	16.86	16.55
		1	24	16.69	16.65	16.54
		12	0	15.98	16.05	15.96
		12	6	15.68	15.91	15.71
		12	13	15.69	15.78	15.84
		25	0	15.72	15.98	15.62

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26055	26365	26675
		Frequency (MHz)		1851.5	1882.5	1913.5
3M	QPSK	1	0	22.07	22.21	22.17
		1	7	21.99	22.13	22.07
		1	14	21.98	22.12	22.10
		8	0	21.12	21.36	21.17
		8	3	21.13	21.23	21.27
		8	7	21.11	21.20	21.14
		15	0	21.10	21.30	21.24
3M	16QAM	1	0	21.12	21.24	21.19
		1	7	21.07	21.17	21.12
		1	14	21.10	21.10	21.13
		8	0	20.09	20.32	20.20
		8	3	20.19	20.30	20.13
		8	7	20.07	20.22	20.19
		15	0	20.04	20.14	20.16
3M	64QAM	1	0	20.20	20.19	20.16
		1	7	20.21	20.26	20.22
		1	14	20.07	19.98	19.95
		8	0	19.09	19.29	19.18
		8	3	19.11	19.28	19.17
		8	7	19.14	19.22	19.21
		15	0	19.17	19.26	19.23
3M	256QAM	1	0	16.55	16.81	16.89
		1	7	16.45	16.78	16.53
		1	14	16.54	16.53	16.75
		8	0	15.78	15.81	15.74
		8	3	15.95	15.94	15.95
		8	7	15.91	15.64	15.98
		15	0	15.90	16.07	15.95

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26047	26365	26683
		Frequency (MHz)		1850.7	1882.5	1914.3
1.4M	QPSK	1	0	22.13	22.26	22.32
		1	2	22.06	22.13	22.17
		1	5	22.01	22.05	22.05
		3	0	22.21	22.22	22.15
		3	1	22.11	22.31	22.28
		3	3	22.17	22.22	22.12
		6	0	21.17	21.32	21.27
1.4M	16QAM	1	0	21.02	21.24	21.20
		1	2	21.00	21.27	21.14
		1	5	21.08	21.21	21.08
		3	0	21.29	21.34	21.17
		3	1	21.19	21.34	21.22
		3	3	21.15	21.25	21.23
		6	0	19.97	20.10	20.08
1.4M	64QAM	1	0	20.20	20.25	20.30
		1	2	20.04	20.34	20.25
		1	5	19.91	20.07	20.08
		3	0	20.12	20.31	20.29
		3	1	20.09	20.32	20.19
		3	3	20.07	20.19	20.14
		6	0	19.19	19.21	19.21
1.4M	256QAM	1	0	16.66	16.72	16.96
		1	2	16.59	16.87	16.72
		1	5	16.73	16.86	16.49
		3	0	16.81	17.03	16.77
		3	1	16.83	16.98	16.83
		3	3	16.84	16.89	16.58
		6	0	15.70	15.98	15.86

4.2 Modulation Characteristics Measurement

4.2.1 Limits of Modulation Characteristics

N/A

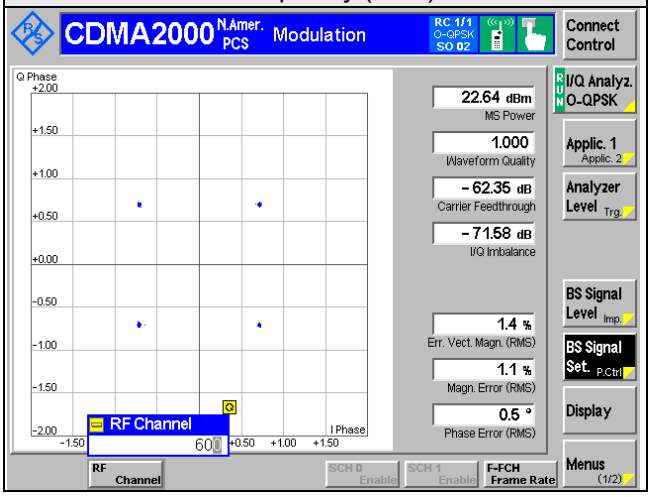
4.2.2 Test Procedure

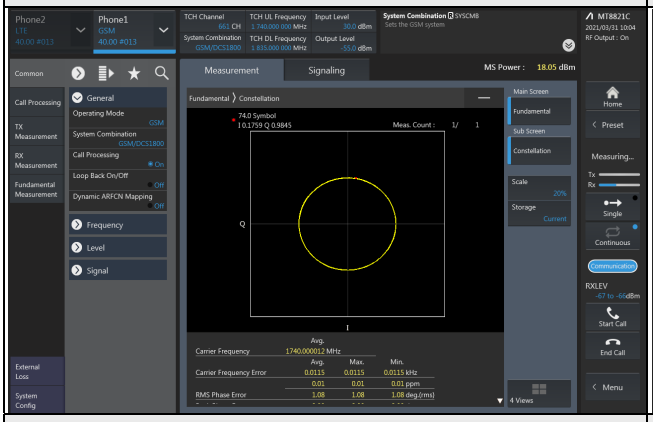
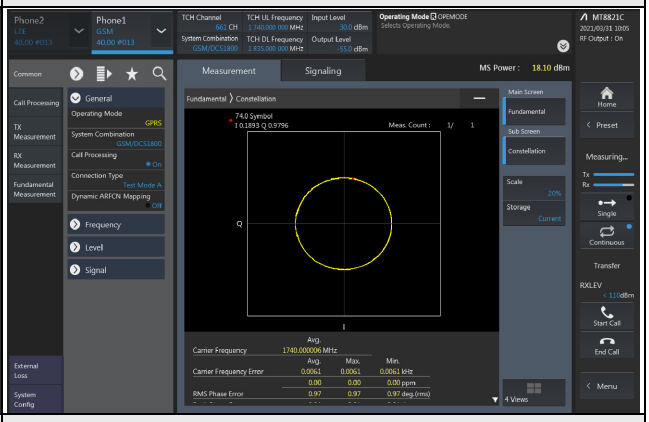
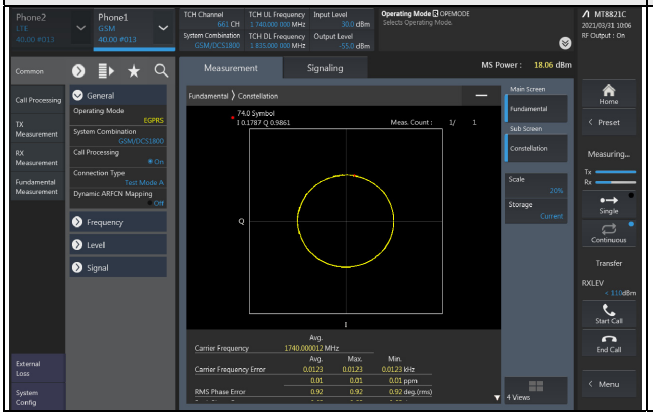
Connect the EUT to Communication Simulator via the antenna connector, The frequency band is set as EUT supported Modulation and Channels, the EUT output is matched with 50 ohm load, the waveform quality and constellation of the EUT was tested.

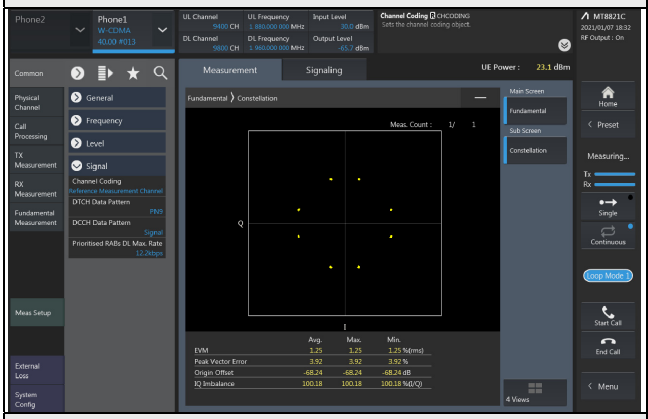
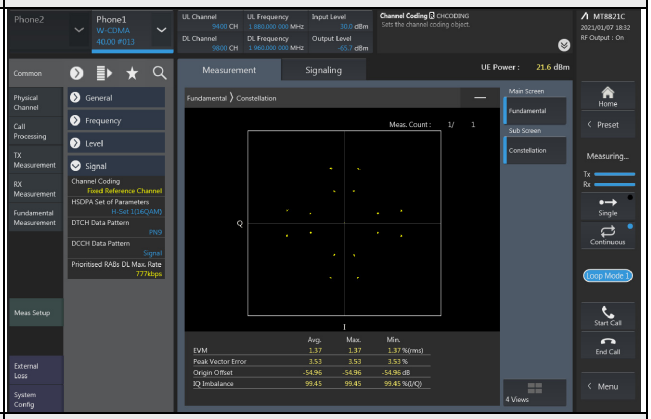
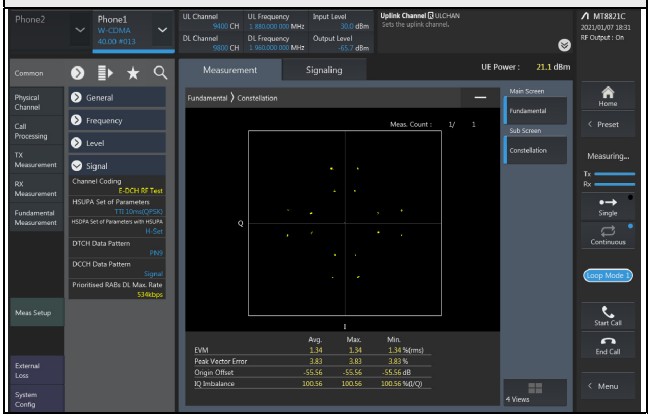
4.2.3 Test Setup

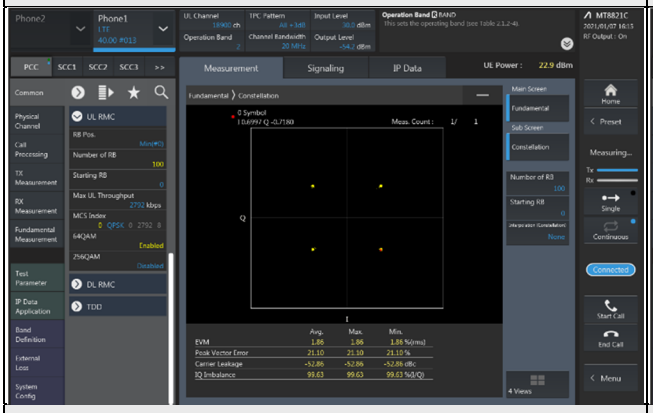
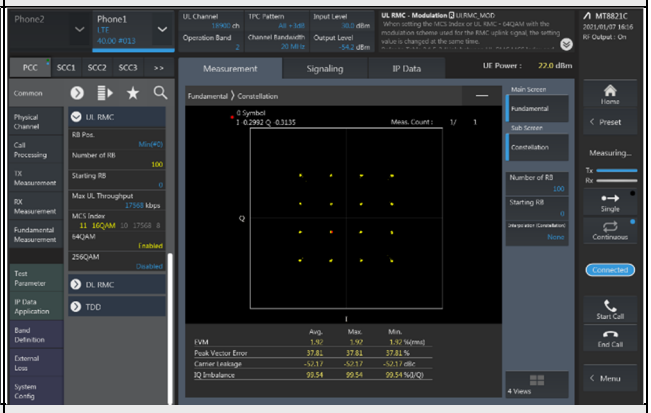
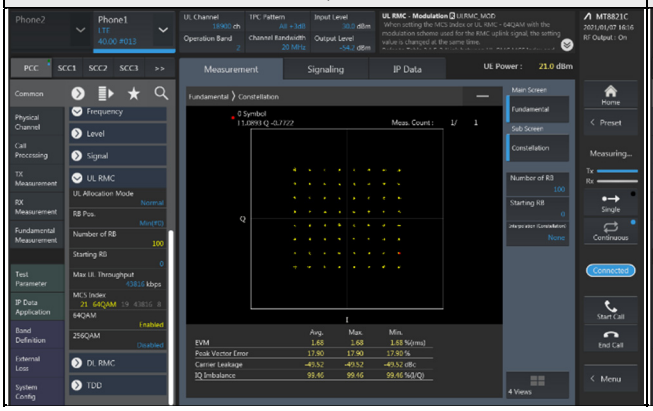
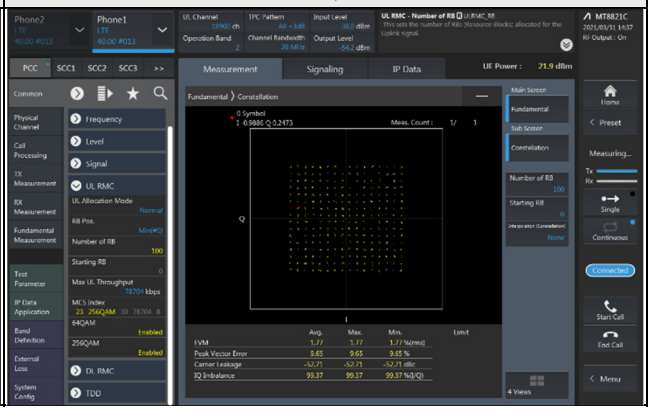
4.2.4 Test Results

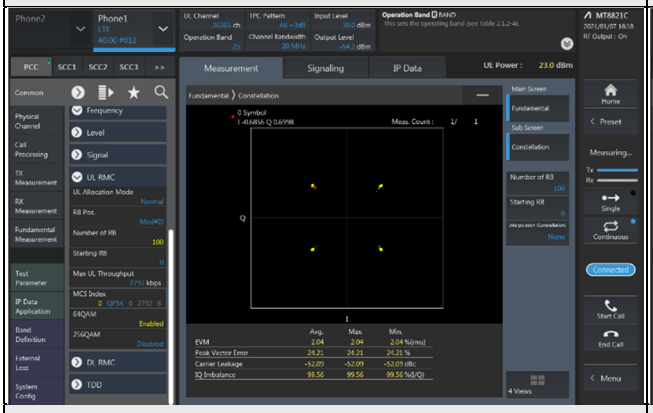
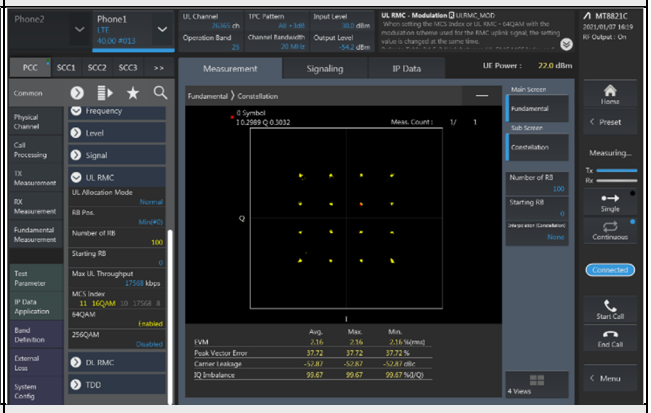
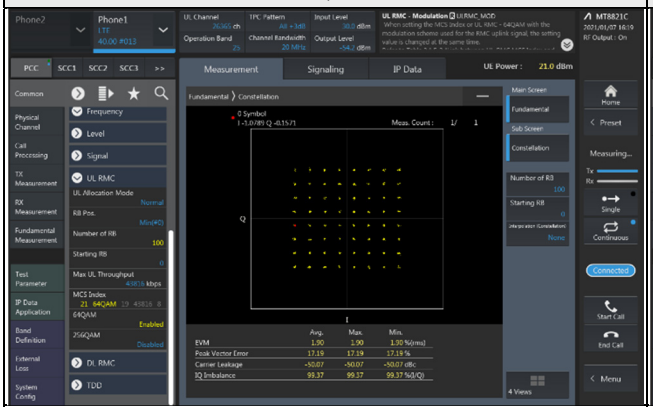
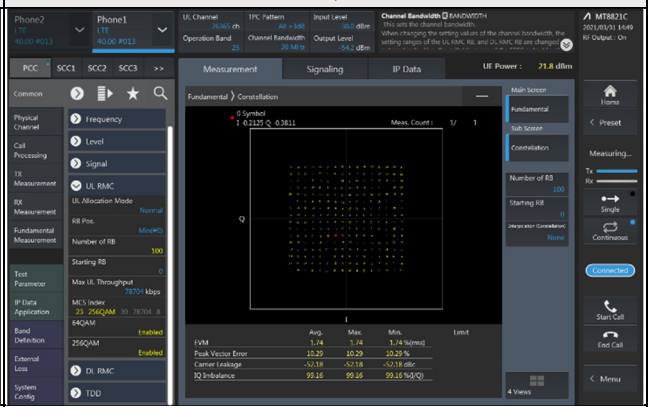
CDMA
Spectrum Plot of Measurement Value
Channel: 600 / Frequency (MHz): 1880.00MHz



GSM	
Spectrum Plot of Measurement Value	
Channel: 661 / Frequency (MHz): 1880.0MHz	
GSM	GPRS
	
EDGE	
	

WCDMA Band 2	
Spectrum Plot of Measurement Value	
Channel: 9400 / Frequency (MHz): 1880.0MHz	
WCDMA	HSDPA
	
HSUPA	
	

LTE Band 2	
Spectrum Plot of Measurement Value	
Channel: 18900 / Frequency (MHz): 1880.0MHz	
QPSK	16QAM
	
64QAM	256QAM
	

LTE Band 25	
Spectrum Plot of Measurement Value	
Channel: 26365 / Frequency (MHz): 1882.5MHz	
QPSK	16QAM
	
64QAM	256QAM
	

4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stabiliity Measurement

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

4.3.2 Test Procedure

a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5 ℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

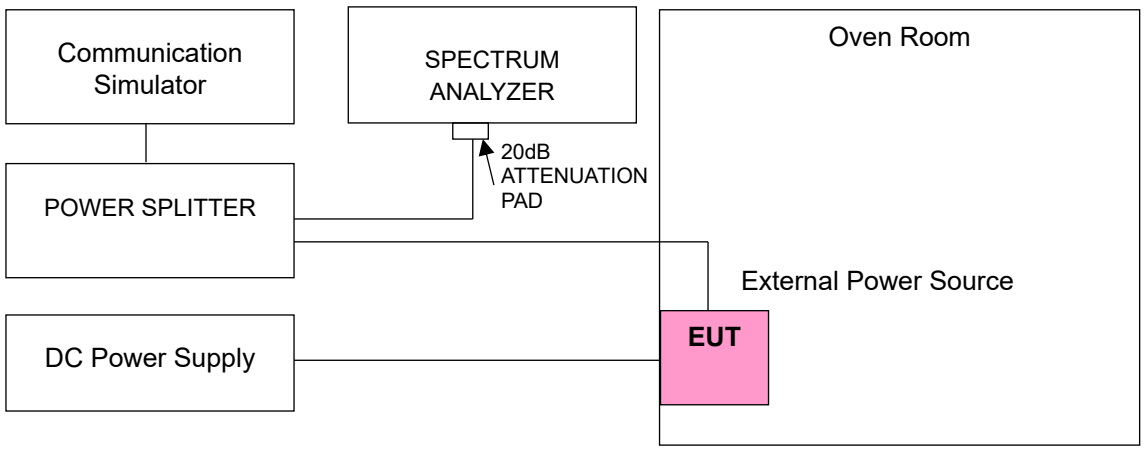
Note: The frequency error was recorded frequency error from the communication simulator.

4.3.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Radio Communication Analyzer Anritsu	MT8820C	6201010284	Dec. 28, 2020	Dec. 27, 2021
Temperature & Humidity Chamber TERCHY	HRM-120RF	931022	Dec. 24, 2020	Dec. 23, 2021
Digital Multimeter Fluke	87-III	70360742	Jun. 23, 2020	Jun. 22, 2021
DC Power Supply Topward	6306A	727263	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.3.4 Conducted Setup



4.3.5 Test Results

Frequency Error vs. Voltage

Voltage (Vdc)	CDMA			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
7.74	1851.250004	0.002	1908.750001	0.001
6.58	1851.250004	0.002	1908.750005	0.003
8.90	1851.250004	0.002	1908.750001	0.001

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	CDMA			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1851.250001	0.001	1908.750004	0.002
-20	1851.250003	0.002	1908.750004	0.002
-10	1851.250003	0.002	1908.750001	0.001
0	1851.250003	0.002	1908.750005	0.003
10	1851.250003	0.002	1908.750005	0.003
20	1851.249999	-0.001	1908.749995	-0.003
30	1851.249996	-0.002	1908.749996	-0.002
40	1851.249995	-0.003	1908.749997	-0.002
50	1851.249999	-0.001	1908.749996	-0.002

Frequency Error vs. Voltage

Voltage (Vdc)	GSM			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
7.74	1850.200004	0.002	1909.800001	0.001
6.58	1850.200003	0.002	1909.800002	0.001
8.90	1850.200003	0.002	1909.800003	0.002

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	GSM			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1850.200004	0.002	1909.800005	0.003
-20	1850.200005	0.003	1909.800001	0.001
-10	1850.200005	0.003	1909.800002	0.001
0	1850.200001	0.001	1909.800001	0.001
10	1850.200004	0.002	1909.800003	0.002
20	1850.199998	-0.001	1909.799997	-0.002
30	1850.199995	-0.003	1909.799995	-0.003
40	1850.199997	-0.002	1909.799997	-0.002
50	1850.199999	-0.001	1909.799999	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	EDGE			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
7.74	1850.200002	0.001	1909.800004	0.002
6.58	1850.200005	0.003	1909.800005	0.003
8.90	1850.200003	0.002	1909.800004	0.002

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	EDGE			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1850.200003	0.002	1909.800002	0.001
-20	1850.200003	0.002	1909.800002	0.001
-10	1850.200001	0.001	1909.800005	0.003
0	1850.200002	0.001	1909.800005	0.003
10	1850.200002	0.001	1909.800003	0.002
20	1850.199995	-0.003	1909.799998	-0.001
30	1850.199995	-0.003	1909.799999	-0.001
40	1850.199998	-0.001	1909.799996	-0.002
50	1850.199998	-0.001	1909.799995	-0.003

Frequency Error vs. Voltage

Voltage (Vdc)	WCDMA Band 2			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
7.74	1852.400002	0.001	1907.600004	0.002
6.58	1852.400003	0.002	1907.600003	0.002
8.90	1852.400002	0.001	1907.600005	0.003

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	WCDMA Band 2			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1852.400001	0.001	1907.600003	0.002
-20	1852.400005	0.003	1907.600003	0.002
-10	1852.400004	0.002	1907.600004	0.002
0	1852.400003	0.002	1907.600003	0.002
10	1852.400004	0.002	1907.600004	0.002
20	1852.399996	-0.002	1907.599999	-0.001
30	1852.399995	-0.003	1907.599996	-0.002
40	1852.399998	-0.001	1907.599998	-0.001
50	1852.399996	-0.002	1907.599996	-0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 2			
	Channel Bandwidth 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
7.74	1850.700004	0.002	1909.300000	0.002
6.58	1850.700005	0.003	1909.300003	0.002
8.90	1850.700003	0.002	1909.300005	0.003

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 2			
	Channel Bandwidth 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1850.700002	0.001	1909.300005	0.003
-20	1850.700003	0.002	1909.300001	0.001
-10	1850.700004	0.002	1909.300003	0.002
0	1850.700003	0.002	1909.300004	0.002
10	1850.700004	0.002	1909.300002	0.001
20	1850.699997	-0.002	1909.299997	-0.002
30	1850.699995	-0.003	1909.299999	-0.001
40	1850.699997	-0.002	1909.299995	-0.003
50	1850.699998	-0.001	1909.299998	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 2			
	Channel Bandwidth 3MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
7.74	1851.500003	0.002	1908.500003	0.002
6.58	1851.500004	0.002	1908.500003	0.002
8.90	1851.500004	0.002	1908.500005	0.003

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 2			
	Channel Bandwidth 3MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1851.500005	0.003	1908.500001	0.001
-20	1851.500001	0.001	1908.500003	0.002
-10	1851.500005	0.003	1908.500002	0.001
0	1851.500004	0.002	1908.500001	0.001
10	1851.500001	0.001	1908.500001	0.001
20	1851.499996	-0.002	1908.499997	-0.002
30	1851.499998	-0.001	1908.499997	-0.002
40	1851.499997	-0.002	1908.499999	-0.001
50	1851.499999	-0.001	1908.499999	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 2			
	Channel Bandwidth 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
7.74	1852.500003	0.002	1907.500004	0.002
6.58	1852.500004	0.002	1907.500002	0.001
8.90	1852.500005	0.003	1907.500004	0.002

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 2			
	Channel Bandwidth 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1852.500002	0.001	1907.500001	0.001
-20	1852.500002	0.001	1907.500005	0.003
-10	1852.500002	0.001	1907.500002	0.001
0	1852.500002	0.001	1907.500005	0.003
10	1852.500004	0.002	1907.500004	0.002
20	1852.499998	-0.001	1907.499998	-0.001
30	1852.499997	-0.002	1907.499998	-0.001
40	1852.499998	-0.001	1907.499995	-0.003
50	1852.499995	-0.003	1907.499999	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 2			
	Channel Bandwidth 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
7.74	1855.000001	0.001	1905.000001	0.001
6.58	1855.000002	0.001	1905.000001	0.001
8.90	1855.000002	0.001	1905.000001	0.001

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 2			
	Channel Bandwidth 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1855.000001	0.001	1905.000005	0.003
-20	1855.000003	0.002	1905.000004	0.002
-10	1855.000004	0.002	1905.000003	0.002
0	1855.000002	0.001	1905.000001	0.001
10	1855.000001	0.001	1905.000001	0.001
20	1854.999998	-0.001	1904.999997	-0.002
30	1854.999998	-0.001	1904.999995	-0.003
40	1854.999995	-0.003	1904.999999	-0.001
50	1854.999997	-0.002	1904.999996	-0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 2			
	Channel Bandwidth 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
7.74	1857.500003	0.002	1902.500005	0.003
6.58	1857.500002	0.001	1902.500003	0.002
8.90	1857.500005	0.003	1902.500002	0.001

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 2			
	Channel Bandwidth 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1857.500005	0.003	1902.500001	0.001
-20	1857.500001	0.001	1902.500004	0.002
-10	1857.500004	0.002	1902.500002	0.001
0	1857.500002	0.001	1902.500004	0.002
10	1857.500003	0.002	1902.500002	0.001
20	1857.499995	-0.003	1902.499996	-0.002
30	1857.499995	-0.003	1902.499996	-0.002
40	1857.499999	-0.001	1902.499998	-0.001
50	1857.499997	-0.002	1902.499999	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 2			
	Channel Bandwidth 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
7.74	1860.000002	0.001	1900.000004	0.002
6.58	1860.000005	0.003	1900.000004	0.002
8.90	1860.000002	0.001	1900.000003	0.002

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 2			
	Channel Bandwidth 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1860.000005	0.003	1900.000002	0.001
-20	1860.000003	0.002	1900.000003	0.002
-10	1860.000005	0.003	1900.000004	0.002
0	1860.000005	0.003	1900.000003	0.002
10	1860.000005	0.003	1900.000002	0.001
20	1859.999998	-0.001	1899.999999	-0.001
30	1859.999995	-0.003	1899.999997	-0.002
40	1859.999998	-0.001	1899.999996	-0.002
50	1859.999998	-0.001	1899.999996	-0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 25			
	Channel Bandwidth 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
7.74	1850.700005	0.003	1914.300005	0.003
6.58	1850.700005	0.003	1914.300004	0.002
8.90	1850.700002	0.001	1914.300001	0.001

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 25			
	Channel Bandwidth 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1850.700004	0.002	1914.300004	0.002
-20	1850.700002	0.001	1914.300001	0.001
-10	1850.700004	0.002	1914.300002	0.001
0	1850.700004	0.002	1914.300004	0.002
10	1850.700005	0.003	1914.300002	0.001
20	1850.699996	-0.002	1914.299995	-0.003
30	1850.699995	-0.003	1914.299999	-0.001
40	1850.699999	-0.001	1914.299999	-0.001
50	1850.699996	-0.002	1914.299996	-0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 25			
	Channel Bandwidth 3MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
7.74	1851.500001	0.001	1913.500004	0.002
6.58	1851.500001	0.001	1913.500001	0.001
8.90	1851.500002	0.001	1913.500002	0.001

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 25			
	Channel Bandwidth 3MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1851.500002	0.001	1913.500002	0.001
-20	1851.500003	0.002	1913.500004	0.002
-10	1851.500005	0.003	1913.500001	0.001
0	1851.500004	0.002	1913.500003	0.002
10	1851.500003	0.002	1913.500004	0.002
20	1851.499995	-0.003	1913.499995	-0.003
30	1851.499998	-0.001	1913.499999	-0.001
40	1851.499997	-0.002	1913.499995	-0.003
50	1851.499996	-0.002	1913.499995	-0.003

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 25			
	Channel Bandwidth 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
7.74	1852.500002	0.001	1912.500001	0.001
6.58	1852.500003	0.002	1912.500003	0.002
8.90	1852.500004	0.002	1912.500003	0.002

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 25			
	Channel Bandwidth 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1852.500002	0.001	1912.500004	0.002
-20	1852.500005	0.003	1912.500004	0.002
-10	1852.500002	0.001	1912.500004	0.002
0	1852.500001	0.001	1912.500004	0.002
10	1852.500004	0.002	1912.500004	0.002
20	1852.499996	-0.002	1912.499998	-0.001
30	1852.499996	-0.002	1912.499996	-0.002
40	1852.499997	-0.002	1912.499999	-0.001
50	1852.499997	-0.002	1912.499995	-0.003

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 25			
	Channel Bandwidth 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
7.74	1855.000004	0.002	1910.000001	0.001
6.58	1855.000003	0.002	1910.000001	0.001
8.90	1855.000001	0.001	1910.000002	0.001

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 25			
	Channel Bandwidth 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1855.000003	0.002	1910.000004	0.002
-20	1855.000004	0.002	1910.000001	0.001
-10	1855.000004	0.002	1910.000004	0.002
0	1855.000001	0.001	1910.000005	0.003
10	1855.000001	0.001	1910.000001	0.001
20	1854.999996	-0.002	1909.999998	-0.001
30	1854.999997	-0.002	1909.999997	-0.002
40	1854.999997	-0.002	1909.999997	-0.002
50	1854.999998	-0.001	1909.999998	-0.001

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 25			
	Channel Bandwidth 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
7.74	1857.500001	0.001	1907.500004	0.002
6.58	1857.500005	0.003	1907.500003	0.002
8.90	1857.500002	0.001	1907.500001	0.001

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 25			
	Channel Bandwidth 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1857.500004	0.002	1907.500005	0.003
-20	1857.500005	0.003	1907.500002	0.001
-10	1857.500004	0.002	1907.500005	0.003
0	1857.500004	0.002	1907.500003	0.002
10	1857.500003	0.002	1907.500002	0.001
20	1857.499998	-0.001	1907.499997	-0.002
30	1857.499997	-0.002	1907.499997	-0.002
40	1857.499998	-0.001	1907.499999	-0.001
50	1857.499995	-0.003	1907.499996	-0.002

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 25			
	Channel Bandwidth 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
7.74	1860.000003	0.002	1905.000005	0.003
6.58	1860.000001	0.001	1905.000002	0.001
8.90	1860.000001	0.001	1905.000004	0.002

Note: The applicant defined the normal working voltage is from 6.58Vdc to 8.90Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 25			
	Channel Bandwidth 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1860.000003	0.002	1905.000004	0.002
-20	1860.000004	0.002	1905.000002	0.001
-10	1860.000003	0.002	1905.000003	0.002
0	1860.000003	0.002	1905.000001	0.001
10	1860.000002	0.001	1905.000004	0.002
20	1859.999999	-0.001	1904.999995	-0.003
30	1859.999996	-0.002	1904.999997	-0.002
40	1859.999996	-0.002	1904.999999	-0.001
50	1859.999995	-0.003	1904.999999	-0.001

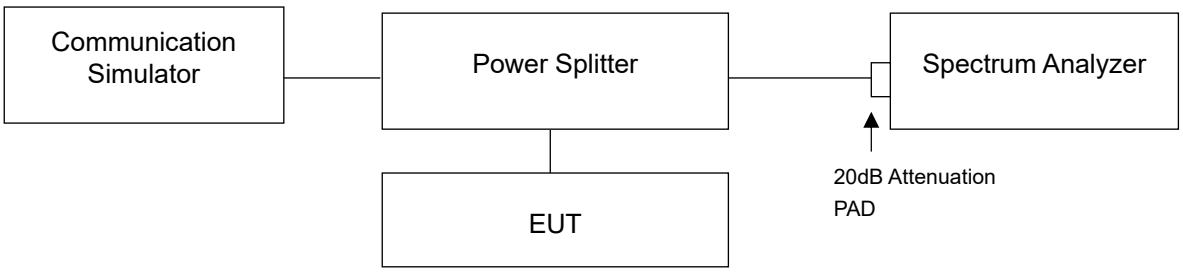
4.4 Occupied Bandwidth Measurement

4.4.1 Test Procedure

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Measurement method, please refer to section 5.4.4 of ANSI C63.26. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

For the 26dBc bandwidth measurement method, please refer to section 5.4.3 of ANSI C63.26.

4.4.2 Test Setup

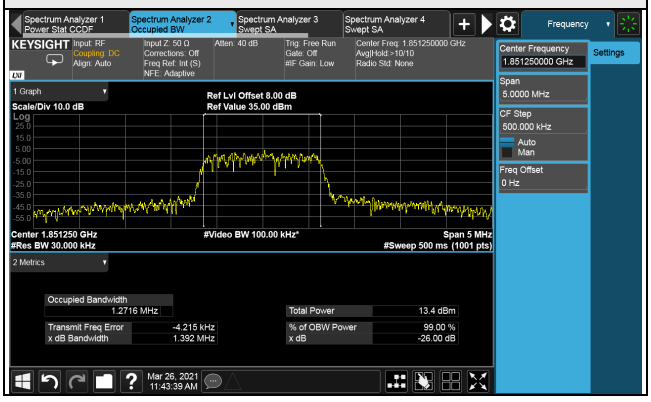


4.4.3 Test Result

Occupied Bandwidth

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
		CDMA
25	1851.25	1.27
600	1880.00	1.26
1175	1908.75	1.26

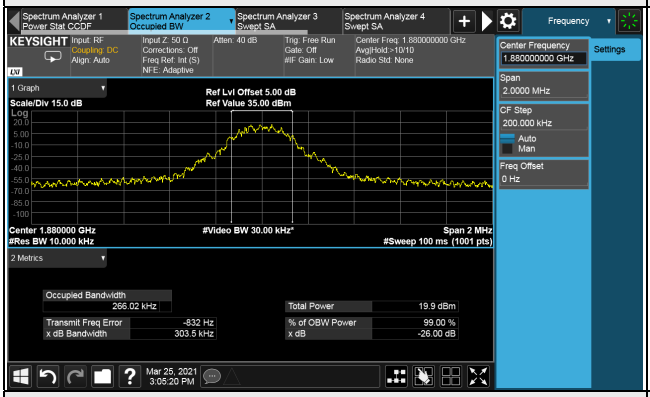
Spectrum Plot Of Worst Value
CDMA



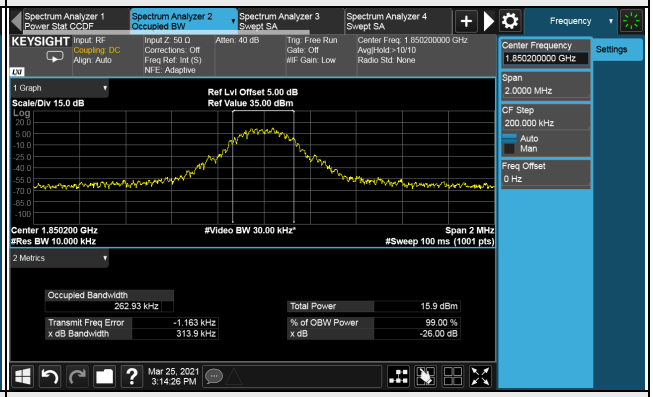
Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)		
		GSM	GPRS	EDGE
512	1850.2	258.85	262.93	237.76
661	1880.0	266.02	247.85	261.67
810	1909.8	252.57	249.14	250.23

Spectrum Plot of Worst Value

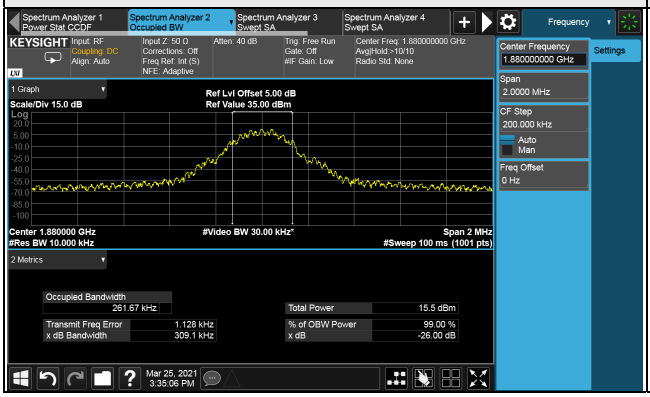
GSM



GPRS



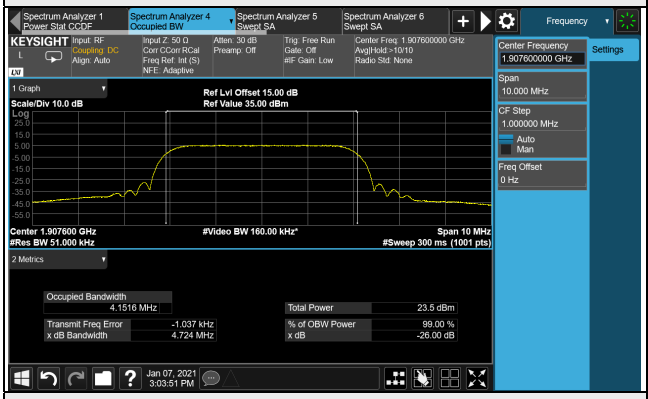
EDGE



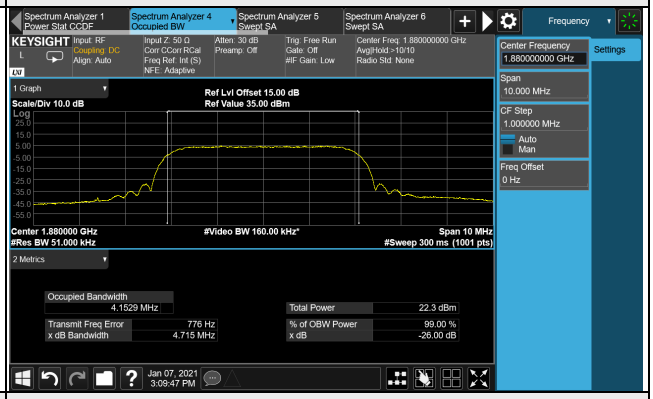
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		WCDMA	HSDPA	HSUPA
9262	1852.4	4.14	4.15	4.15
9400	1880.0	4.14	4.15	4.15
9538	1907.6	4.15	4.15	4.15

Spectrum Plot of Worst Value

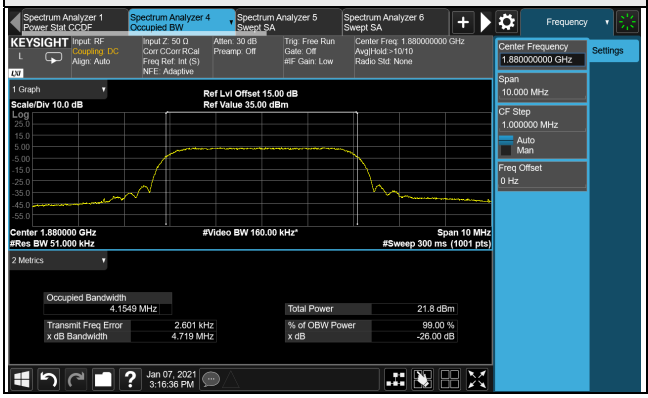
WCDMA



HSDPA



HSUPA

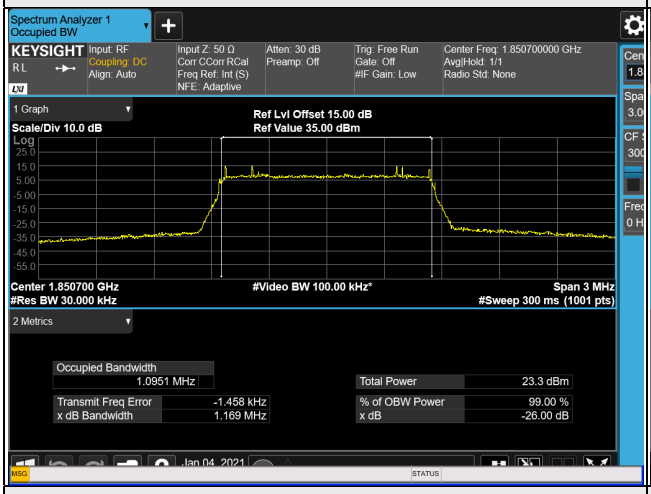


LTE Band 2, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18607	1850.7	1.09	1.10	1.09	1.09
18900	1880.0	1.09	1.09	1.09	1.09
19193	1909.3	1.09	1.09	1.09	1.08
LTE Band 2, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18615	1851.5	2.70	2.70	2.73	2.70
18900	1880.0	2.71	2.69	2.70	2.70
19185	1908.5	2.70	2.70	2.73	2.70
LTE Band 2, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18625	1852.5	4.48	4.54	4.50	4.48
18900	1880.0	4.48	4.49	4.54	4.49
19175	1907.5	4.48	4.57	4.49	4.49
LTE Band 2, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18650	1855.0	9.12	9.10	9.04	8.96
18900	1880.0	8.95	9.05	8.97	8.96
19150	1905.0	8.95	8.96	8.97	8.96
LTE Band 2, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18675	1857.5	13.53	13.42	13.70	13.44
18900	1880.0	13.46	13.41	13.61	13.46
19125	1902.5	13.47	13.42	13.50	13.45

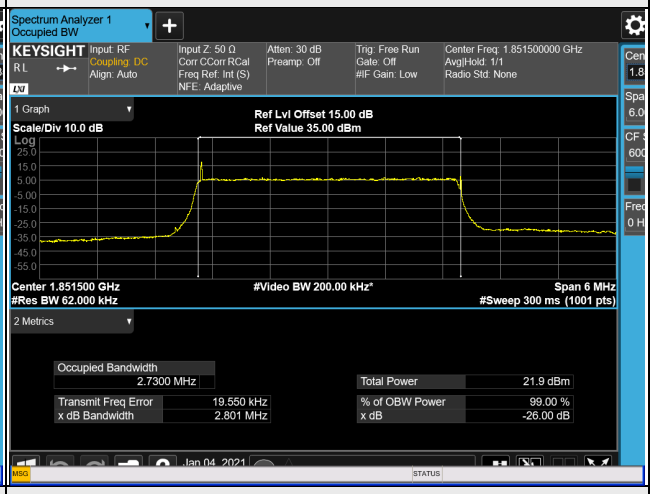
LTE Band 2, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18700	1860.0	17.82	17.83	17.91	17.91
18900	1880.0	17.91	17.94	17.97	17.96
19100	1900.0	17.94	17.94	17.93	17.93

Spectrum Plot of Worst Value

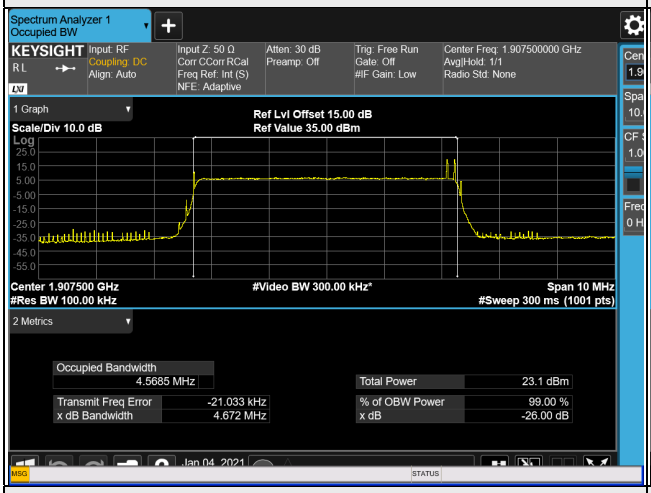
1.4MHz / 16QAM



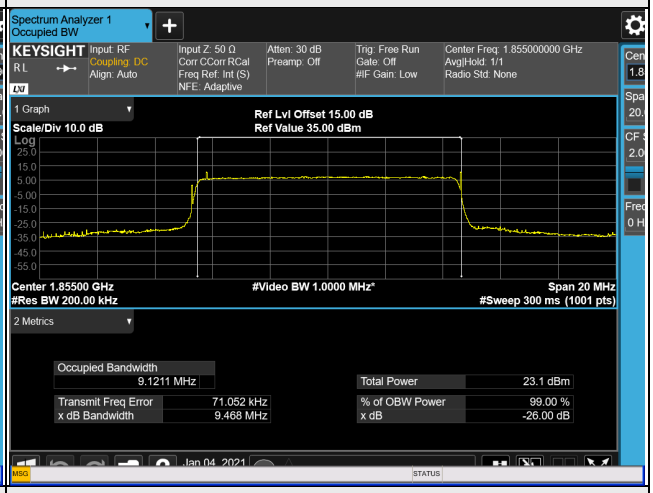
3MHz / 64QAM



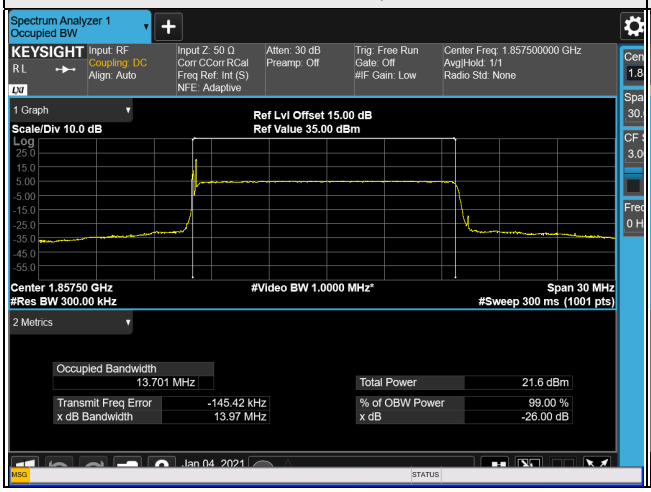
5MHz / 16QAM



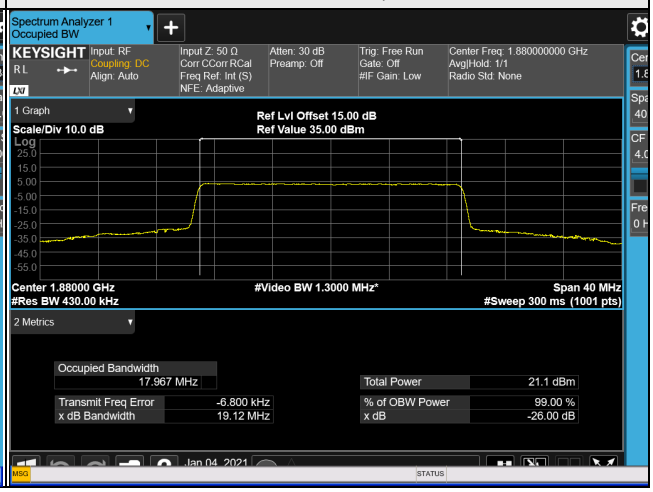
10MHz / QPSK



15MHz / 64QAM



20MHz / 64QAM

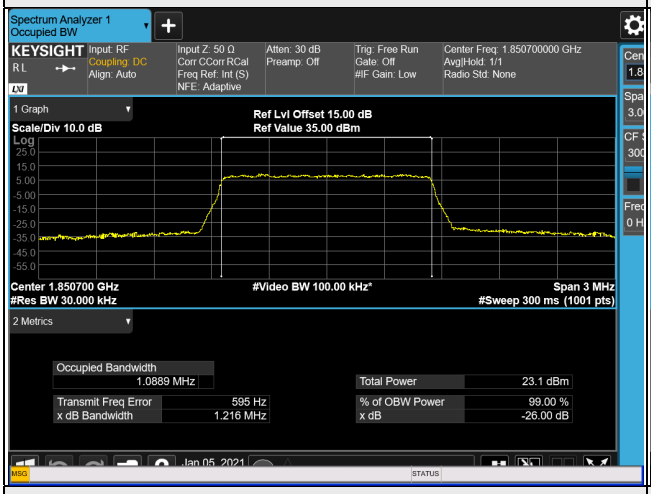


LTE Band 25, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
26047	1850.7	1.09	1.09	1.09	1.09
26365	1882.5	1.09	1.09	1.09	1.08
26683	1914.3	1.09	1.09	1.09	1.08
LTE Band 25, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
26055	1851.5	2.70	2.70	2.70	2.70
26365	1882.5	2.70	2.69	2.70	2.70
26675	1913.5	2.70	2.70	2.70	2.70
LTE Band 25, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
26065	1852.5	4.49	4.49	4.50	4.49
26365	1882.5	4.49	4.49	4.50	4.49
26665	1912.5	4.49	4.48	4.50	4.49
LTE Band 25, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
26090	1855.0	8.95	8.96	8.96	8.95
26365	1882.5	8.95	8.96	8.96	8.96
26640	1910.0	8.95	8.95	8.96	8.95
LTE Band 25, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
26115	1857.5	13.45	13.44	13.43	13.44
26365	1882.5	13.46	13.44	13.44	13.45
26615	1907.5	13.45	13.44	13.43	13.44

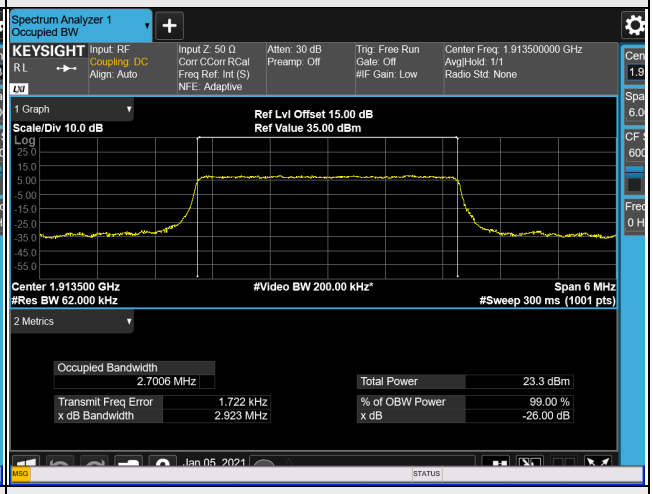
LTE Band 25, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
26140	1860.0	17.91	17.92	17.91	17.91
26365	1882.5	17.92	17.93	17.93	17.94
26590	1905.0	17.92	17.93	17.94	17.93

Spectrum Plot of Worst Value

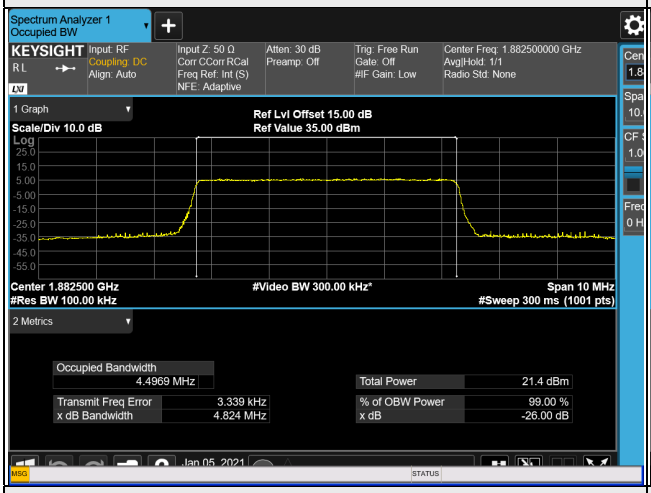
1.4MHz / 16QAM



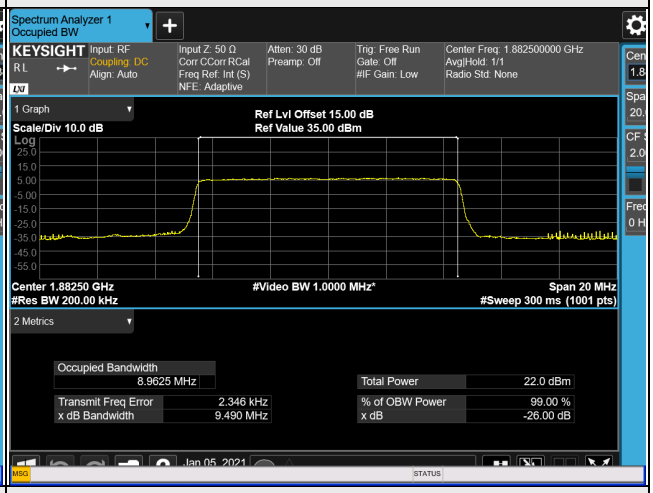
3MHz / QPSK



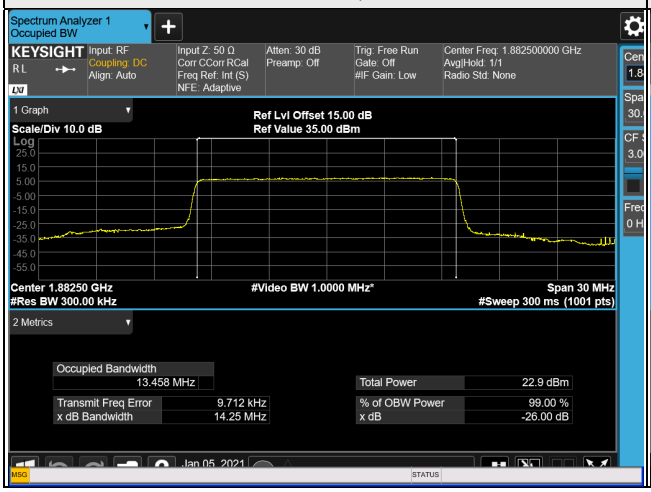
5MHz / 64QAM



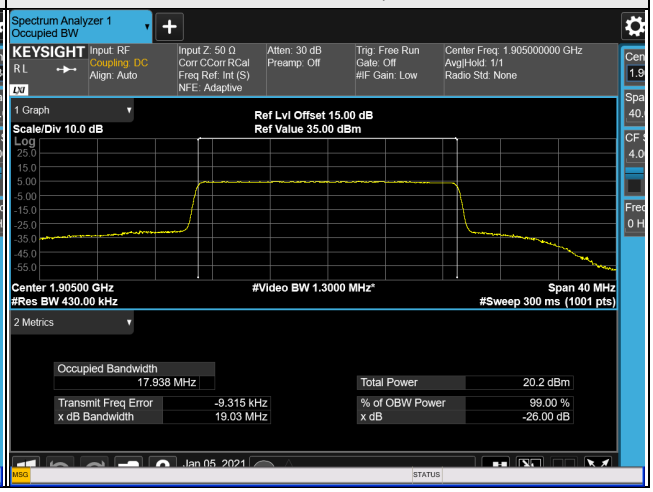
10MHz / 16QAM



15MHz / QPSK



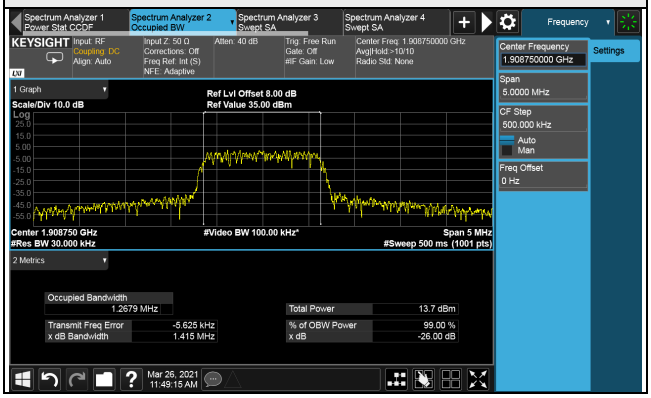
20MHz / 64QAM



26dB Bandwidth

Channel	Frequency (MHz)	26dB Bandwidth (MHz)
		CDMA
25	1851.25	1.39
600	1880.00	1.38
1175	1908.75	1.41

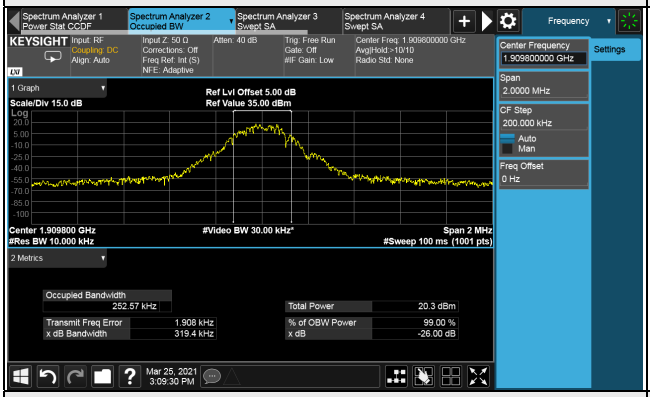
Spectrum Plot Of Worst Value
CDMA



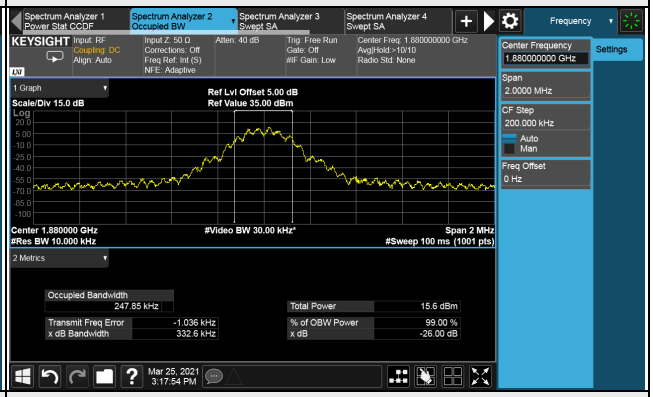
Channel	Frequency (MHz)	26dB Bandwidth (kHz)		
		GSM	GPRS	EDGE
512	1850.2	296.50	313.90	313.60
661	1880.0	303.50	332.60	309.10
810	1909.8	319.40	316.40	305.70

Spectrum Plot of Worst Value

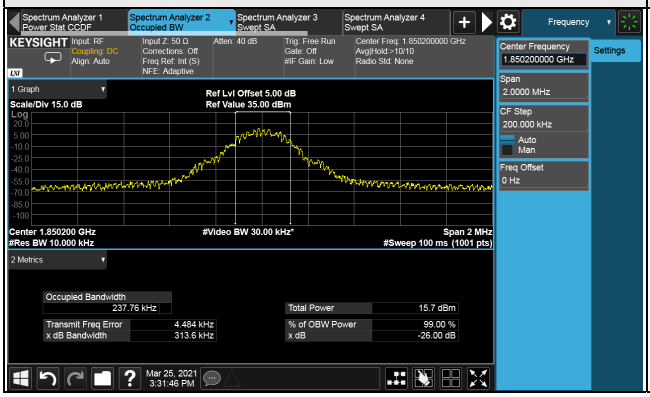
GSM



GPRS



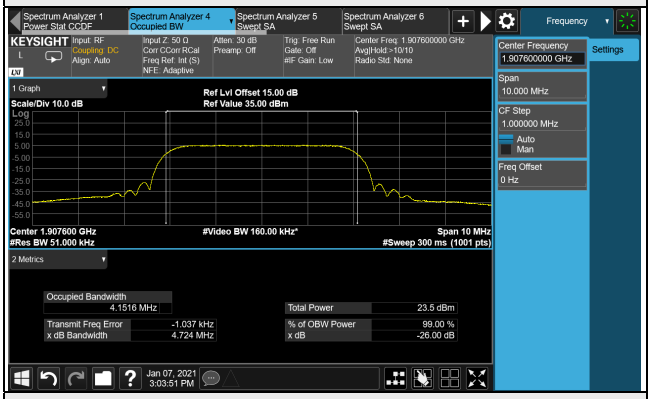
EDGE



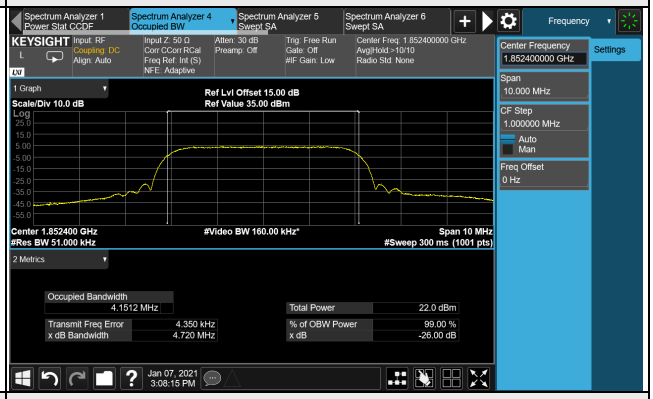
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		
		WCDMA	HSDPA	HSUPA
9262	1852.4	4.71	4.72	4.72
9400	1880.0	4.71	4.72	4.72
9538	1907.6	4.72	4.72	4.72

Spectrum Plot of Worst Value

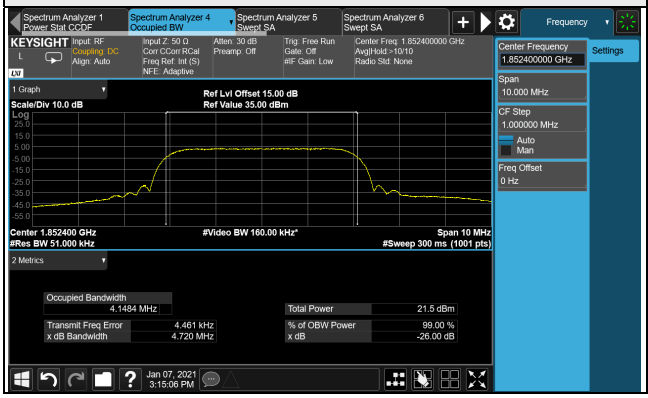
WCDMA



HSDPA



HSUPA

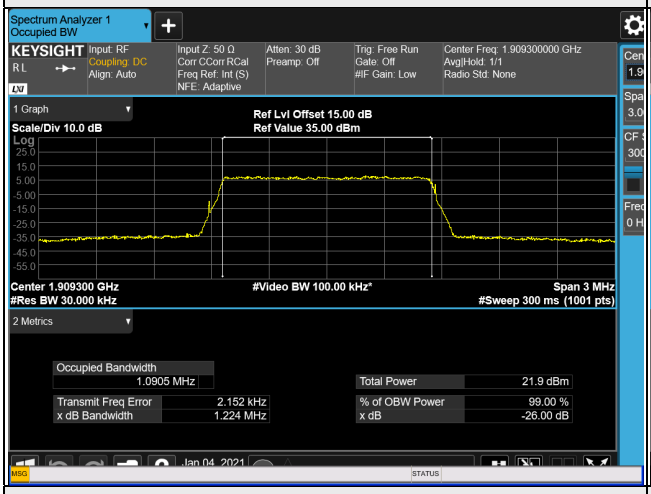


LTE Band 2, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18607	1850.7	1.19	1.17	1.16	1.21
18900	1880.0	1.17	1.17	1.22	1.21
19193	1909.3	1.17	1.16	1.22	1.22
LTE Band 2, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18615	1851.5	2.82	2.92	2.80	2.92
18900	1880.0	2.85	2.93	2.94	2.92
19185	1908.5	2.84	2.93	2.86	2.93
LTE Band 2, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18625	1852.5	4.72	4.64	4.84	4.81
18900	1880.0	4.64	4.81	4.63	4.81
19175	1907.5	4.80	4.67	4.79	4.81
LTE Band 2, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18650	1855.0	9.47	9.29	9.20	9.50
18900	1880.0	9.33	9.43	9.51	9.51
19150	1905.0	9.46	10.77	10.63	9.51
LTE Band 2, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18675	1857.5	13.85	13.92	13.97	14.22
18900	1880.0	19.10	13.81	13.91	14.25
19125	1902.5	14.27	13.84	13.81	14.26

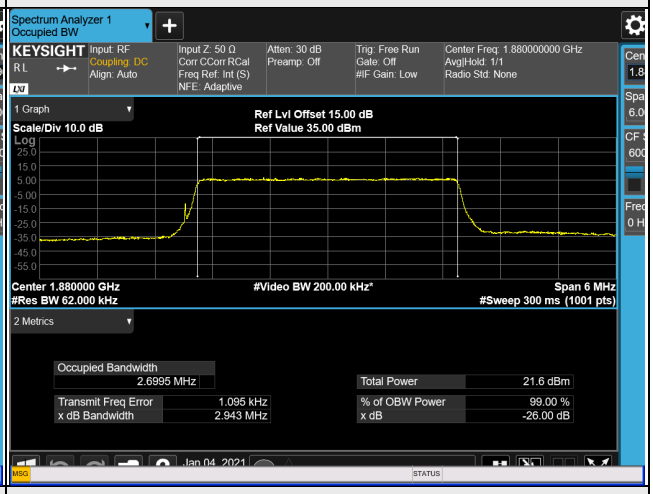
LTE Band 2, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18700	1860.0	18.45	18.45	19.01	19.02
18900	1880.0	18.66	19.03	19.12	19.03
19100	1900.0	18.68	19.04	19.12	19.02

Spectrum Plot of Worst Value

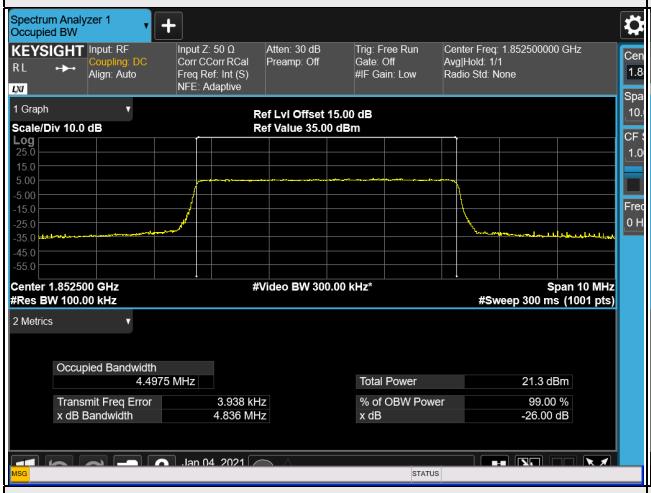
1.4MHz / 64QAM



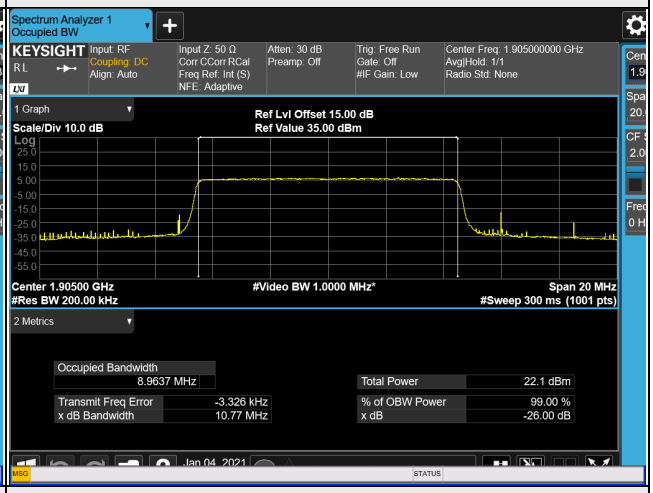
3MHz / 64QAM



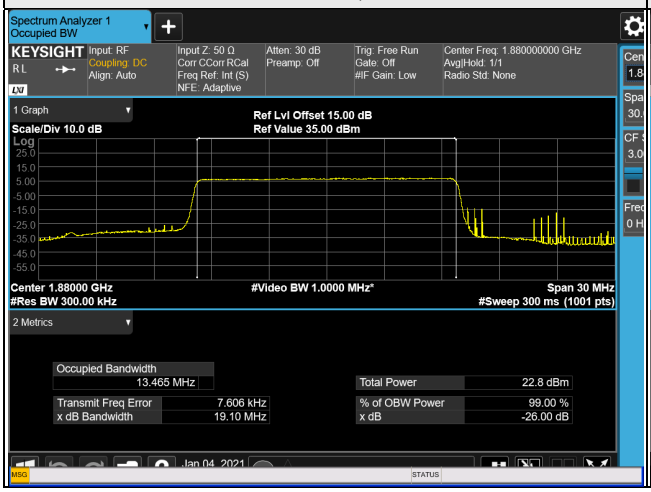
5MHz / 64QAM



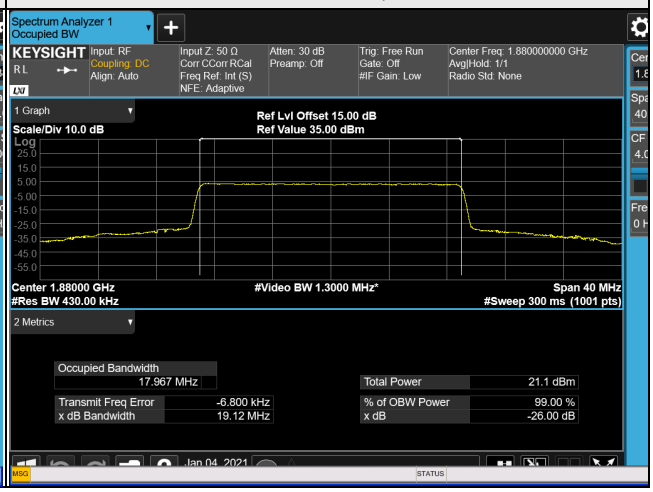
10MHz / 16QAM



15MHz / QPSK



20MHz / 64QAM

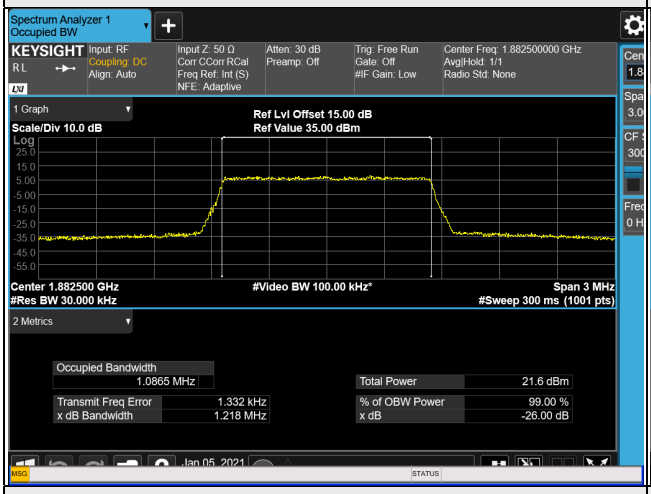


LTE Band 25, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
26047	1850.7	1.22	1.22	1.21	1.21
26365	1882.5	1.21	1.21	1.22	1.21
26683	1914.3	1.22	1.21	1.21	1.21
LTE Band 25, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
26055	1851.5	2.91	2.93	2.91	2.93
26365	1882.5	2.92	2.92	2.90	2.92
26675	1913.5	2.92	2.93	2.90	2.93
LTE Band 25, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
26065	1852.5	4.80	4.80	4.81	4.80
26365	1882.5	4.79	4.80	4.82	4.81
26665	1912.5	4.80	4.79	4.83	4.80
LTE Band 25, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
26090	1855.0	9.51	9.51	9.51	9.50
26365	1882.5	9.50	9.49	9.53	9.50
26640	1910.0	9.50	9.51	9.52	9.51
LTE Band 25, Channel Bandwidth 15MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
26115	1857.5	14.24	14.25	14.25	14.24
26365	1882.5	14.25	14.26	14.24	14.23
26615	1907.5	14.25	14.24	14.25	14.26

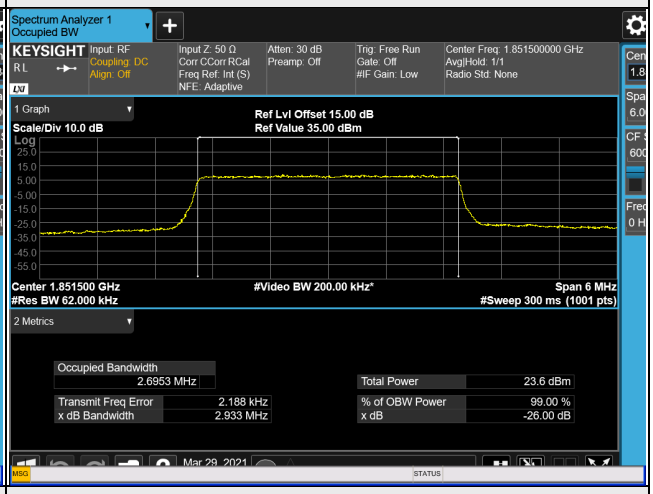
LTE Band 25, Channel Bandwidth 20MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
26140	1860.0	19.01	19.02	19.03	19.01
26365	1882.5	19.03	19.04	19.02	19.03
26590	1905.0	19.04	19.04	19.03	19.03

Spectrum Plot of Worst Value

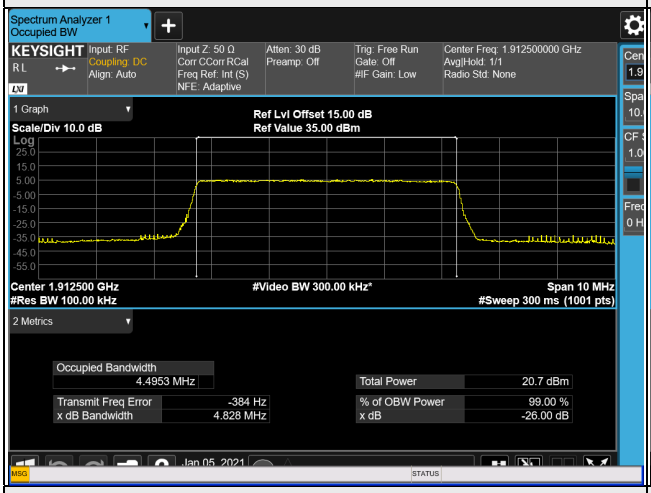
1.4MHz / 64QAM



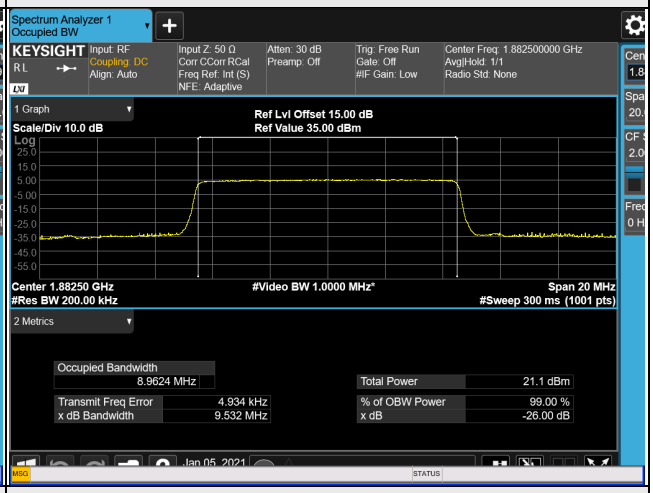
3MHz / 256QAM



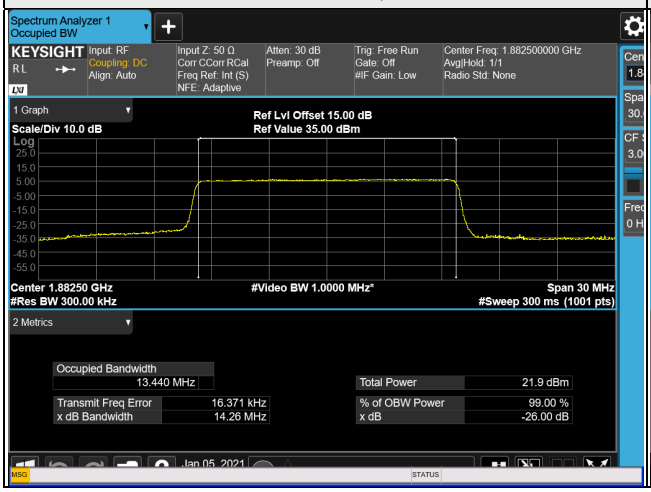
5MHz / 64QAM



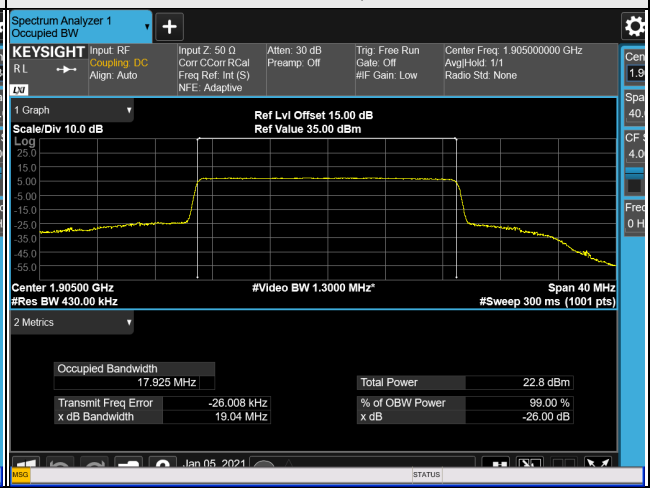
10MHz / 64QAM



15MHz / 16QAM



20MHz / QPSK

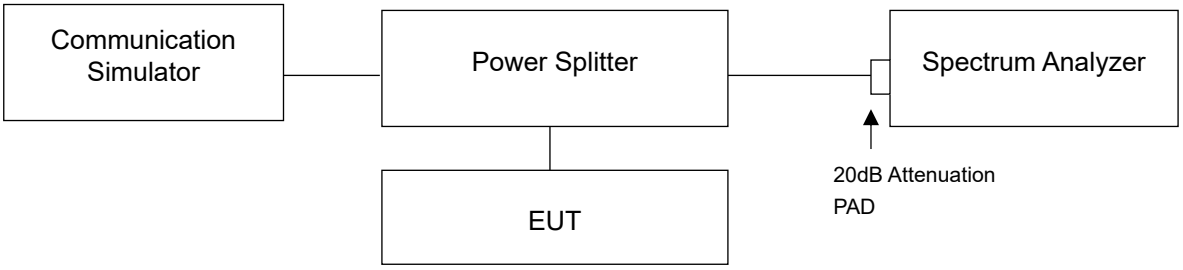


4.5 Band Edge Measurement

4.5.1 Limits of Band Edge Measurement

Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

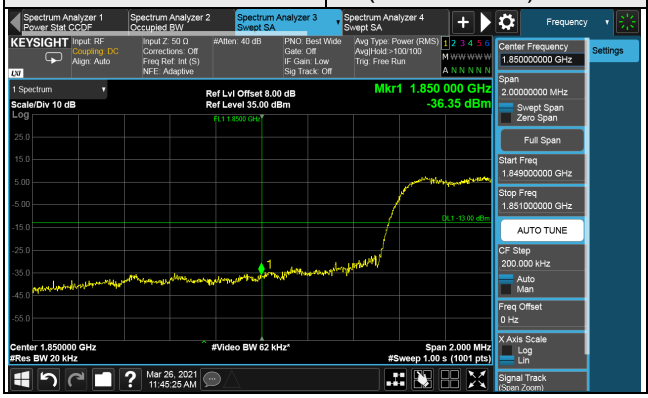
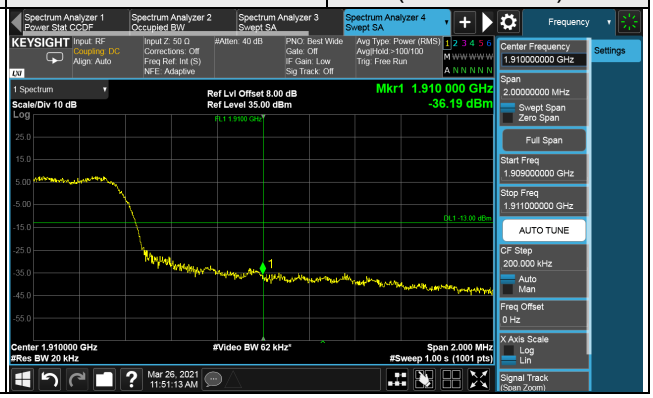
4.5.2 Test Setup

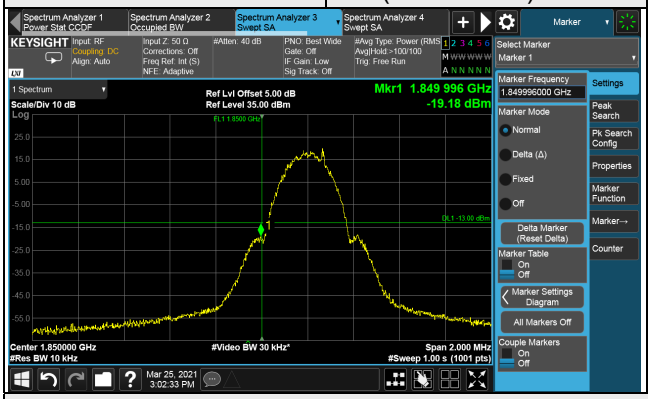
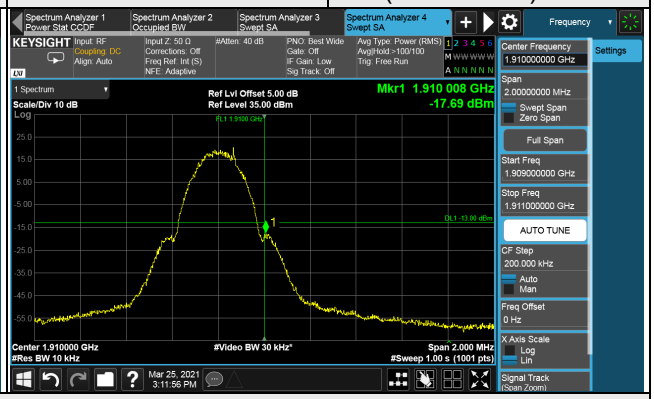
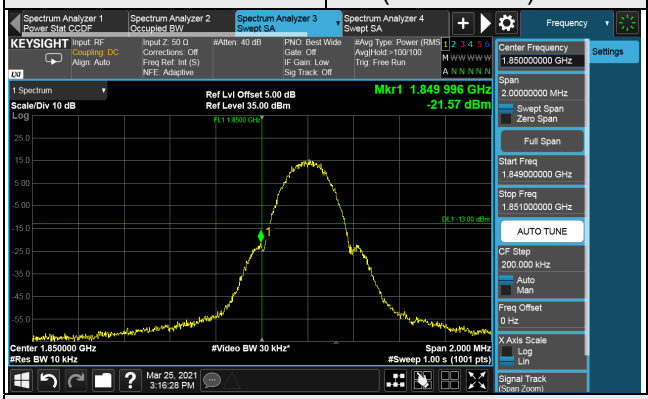
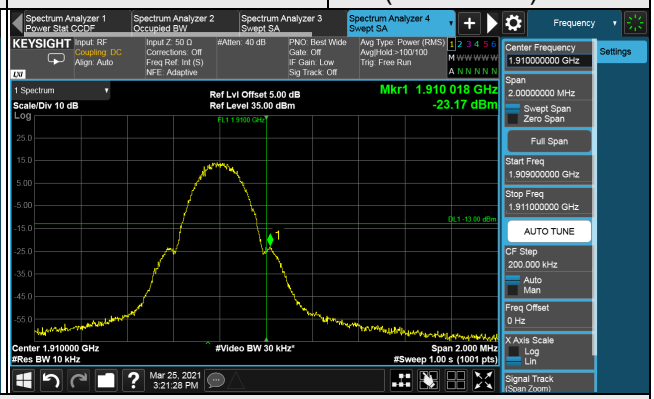


4.5.3 Test Procedures

a. All measurements were done at low and high operational frequency range.
b. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 20kHz and VB of the spectrum is 62kHz (CDMA).
c. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 10kHz and VB of the spectrum is 30kHz (GSM / GPRS / EDGE).
d. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 51kHz and VB of the spectrum is 160kHz (WCDMA / HSDPA / HSUPA).
e. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 15kHz and VB of the spectrum is 51kHz (LTE Channel Bandwidth 1.4MHz).
f. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 30kHz and VB of the spectrum is 100kHz (LTE Channel Bandwidth 3MHz).
g. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 51kHz and VB of the spectrum is 160kHz (LTE Channel Bandwidth 5MHz).
h. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (LTE Channel Bandwidth 10MHz).
i. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 150kHz and VB of the spectrum is 470kHz (LTE Channel Bandwidth 15MHz).
j. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 200kHz and VB of the spectrum is 1MHz (LTE Channel Bandwidth 20MHz).
k. Record the max trace plot into the test report.

4.5.4 Test Results

CDMA			
Channel	25 (1851.25MHz)	Channel	1175 (1908.75MHz)
			

GSM			
Channel	512 (1850.2MHz)	Channel	810 (1909.8MHz)
			
GPRS			
Channel	512 (1850.2MHz)	Channel	810 (1909.8MHz)
			
EDGE			
Channel	512 (1850.2MHz)	Channel	810 (1909.8MHz)