FCC Test Report
(Part 22 – GPRS, EDGE, WCDMA B5, LTE B5/B26)

Report No.: RFBEAD-WTW-P21060534-6

FCC ID: M82-AIM78S6

Test Model: AIM-78S-6

Series Model: AIM-78H-6, AIM-78H-6XXXXXXXXXXXXXXXX, AIM-78S-6XXXXXXXXXXXXXXXX (X: maybe 1-9, A-Z, or blank) (refer to item 3.1 for more details)

Received Date: Jun. 16, 2021

Test Date: Aug. 12 ~ Sep. 16, 2021

Issued Date: Dec. 27, 2021

Applicant: ADVANTECH CO., LTD

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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(1): No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan

FCC Registration / Designation Number(1): 788550 / TW0003

Test Location(2): B2F., No. 215, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 231, Taiwan

FCC Registration / Designation Number(2): 427177 / TW0011

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Release Control Record

Issue No.	Description	Date Issued
RFBEAD-WTW-P21060534-6	Original release.	Dec. 27, 2021

1 Certificate of Conformity

Product: 10.1" Tablet PC

Brand: ADVANTECH

Test Model: AIM-78S-6

Series Model: AIM-78H-6, AIM-78H-6XXXXXXXXXXXXXXXX, AIM-78S-6XXXXXXXXXXXXXXXX
(X: maybe 1-9, A-Z, or blank) (refer to item 3.1 for more details)

Sample Status: Engineering sample

Applicant: ADVANTECH CO., LTD

Test Date: Aug. 12 ~ Sep. 16, 2021

Standards: FCC Part 22, Subpart H

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:** Dec. 27, 2021

Celine Chou / Senior Specialist

Approved by : Jeremy Lin , **Date:** Dec. 27, 2021

Jeremy Lin / Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 22 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 22.913 (a)	Effective radiated power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement
22.913 (d)	Peak To Average Ratio	Pass	Meet the requirement of limit.
2.1055 22.355	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
22.917	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 22.917	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 22.917	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -29.21dB at 2509.20MHz.

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	2.0153 dB
	200MHz ~1000MHz	2.0224 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	1.0121 dB
	18GHz ~ 40GHz	1.1508 dB

2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver Agilent Technologies	N9038A	MY52260177	Aug. 24, 2020	Aug. 23, 2021
			Sep. 01, 2021	Aug. 31, 2022
Spectrum Analyzer ROHDE & SCHWARZ	FSW43	101582	Apr. 01, 2021	Mar. 31, 2022
HORN Antenna ETS-Lindgren	3117	00143293	Nov. 22, 2020	Nov. 21, 2021
BILOG Antenna SCHWARZBECK	VULB 9168	9168-616	Nov. 09, 2020	Nov. 08, 2021
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Nov. 22, 2020	Nov. 21, 2021
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 13, 2021	Apr. 12, 2022
Loop Antenna	EM-6879	269	Sep. 17, 2020	Sep. 16, 2021
MXG Vector signal generator Agilent	N5182B	MY53050430	Nov. 25, 2020	Nov. 24, 2021
Preamplifier Agilent	310N	187226	Jun. 17, 2021	Jun. 16, 2022
Preamplifier Agilent	83017A	MY39501357	Jun. 17, 2021	Jun. 16, 2022
Preamplifier EMCI	EMC 184045	980116	Oct. 07, 2020	Oct. 06, 2021
RF signal cable ETS-LINDGREN	5D-FB	Cable-CH1-01(RFC-SMS-100-SMS-120+RFC-SMS-100-SMS-400)	Jun. 17, 2021	Jun. 16, 2022
RF signal cable ETS-LINDGREN	8D-FB	Cable-CH1-02(RFC-SMS-100-SMS-24)	Jun. 17, 2021	Jun. 16, 2022
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Software BV ADT	E3 8.130425b	NA	NA	NA
Antenna Tower MF	NA	NA	NA	NA
Turn Table MF	NA	NA	NA	NA
Antenna Tower &Turn Table Controller MF	MF-7802	NA	NA	NA
Temperature & Humidity Chamber TERCHY	HRM-120RF	931022	Dec. 24, 2020	Dec. 23, 2021
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
True RMS Clamp Meter Fluke	325	31130711WS	Jun. 02, 2021	Jun. 01, 2022
DC power supply Keysight	U8002A	MY56330015	NA	NA
Radio Communication Analyzer Anritsu	MT8820C	6201010284	Dec. 28, 2020	Dec. 27, 2021
Universal Radio Communication Tester R&S	CMU200	101095	Nov. 18, 2020	Nov. 17, 2021

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 Xindian Chamber 6.

3 General Information

3.1 General Description of EUT

Product	10.1” Tablet PC	
Brand	ADVANTECH	
Test Model	AIM-78S-6	
Series Model	AIM-78H-6, AIM-78H-6XXXXXXXXXXXXXXXX, AIM-78S-6XXXXXXXXXXXXXXXX (X: maybe 1-9, A-Z, or blank)	
Model Difference	Refer to note	
Sample Status	Engineering sample	
Power Supply Rating	10.8Vdc (Battery) 19Vdc (Adapter)	
Modulation Type	GPRS: GMSK EDGE: 8PSK WCDMA: BPSK, QPSK HSDPA: BPSK HSUPA: QPSK LTE: QPSK, 16QAM, 64QAM	
Operating Frequency	GPRS, EDGE	824.2MHz ~ 848.8MHz
	WCDMA Band 5	826.4MHz ~ 846.6MHz
	LTE Band 5 (Channel Bandwidth 1.4MHz)	824.7MHz ~ 848.3MHz
	LTE Band 5 (Channel Bandwidth 3MHz)	825.5MHz ~ 847.5MHz
	LTE Band 5 (Channel Bandwidth 5MHz)	826.5MHz ~ 846.5MHz
	LTE Band 5 (Channel Bandwidth 10MHz)	829.0MHz ~ 844.0MHz
	LTE Band 26 (Channel Bandwidth 1.4MHz)	824.7MHz ~ 848.3MHz
	LTE Band 26 (Channel Bandwidth 3MHz)	825.5MHz ~ 847.5MHz
	LTE Band 26 (Channel Bandwidth 5MHz)	826.5MHz ~ 846.5MHz
	LTE Band 26 (Channel Bandwidth 10MHz)	829.0MHz ~ 844.0MHz
	LTE Band 26 (Channel Bandwidth 15MHz)	831.5MHz ~ 841.5MHz

Max. ERP Power	GPRS	1205.036mW (30.81dBm)		
	EDGE	291.072mW (24.64dBm)		
	WCDMA Band 5	161.436mW (22.08dBm)		
		QPSK	16QAM	64QAM
	LTE Band 5 (Channel Bandwidth 1.4MHz)	136.458mW (21.35dBm)	108.143mW (20.34dBm)	86.099mW (19.35dBm)
	LTE Band 5 (Channel Bandwidth 3MHz)	134.896mW (21.30dBm)	107.647mW (20.32dBm)	84.528mW (19.27dBm)
	LTE Band 5 (Channel Bandwidth 5MHz)	136.144mW (21.34dBm)	106.414mW (20.27dBm)	84.528mW (19.27dBm)
	LTE Band 5 (Channel Bandwidth 10MHz)	138.995mW (21.43dBm)	109.396mW (20.39dBm)	87.297mW (19.41dBm)
	LTE Band 26 (Channel Bandwidth 1.4MHz)	140.605mW (21.48dBm)	110.154mW (20.42dBm)	87.902mW (19.44dBm)
	LTE Band 26 (Channel Bandwidth 3MHz)	139.316mW (21.44dBm)	109.144mW (20.38dBm)	88.308mW (19.46dBm)
	LTE Band 26 (Channel Bandwidth 5MHz)	138.038mW (21.40dBm)	111.173mW (20.46dBm)	86.497mW (19.37dBm)
	LTE Band 26 (Channel Bandwidth 10MHz)	139.316mW (21.44dBm)	109.144mW (20.38dBm)	88.716mW (19.48dBm)
	LTE Band 26 (Channel Bandwidth 15MHz)	142.233mW (21.53dBm)	111.944mW (20.49dBm)	89.536mW (19.52dBm)
Emission Designator	GPRS	256KGXW		
	EDGE	267KG7W		
	WCDMA Band 5	4M15F9W		
		QPSK	16QAM	64QAM
	LTE Band 5 (Channel Bandwidth 1.4MHz)	1M09G7D	1M09D7W	1M09D7W
	LTE Band 5 (Channel Bandwidth 3MHz)	2M70G7D	2M70D7W	2M70D7W
	LTE Band 5 (Channel Bandwidth 5MHz)	4M50G7D	4M49D7W	4M50D7W
	LTE Band 5 (Channel Bandwidth 10MHz)	8M98G7D	8M98D7W	8M98D7W
	LTE Band 26 (Channel Bandwidth 1.4MHz)	1M09G7D	1M09D7W	1M09D7W
	LTE Band 26 (Channel Bandwidth 3MHz)	2M70G7D	2M70D7W	2M70D7W
	LTE Band 26 (Channel Bandwidth 5MHz)	4M49G7D	4M49D7W	4M50D7W
	LTE Band 26 (Channel Bandwidth 10MHz)	8M98G7D	8M98D7W	8M98D7W
	LTE Band 26 (Channel Bandwidth 15MHz)	13M5G7D	13M5D7W	13M5D7W
Antenna Type	Refer to note			
Antenna Connector	Refer to note			
Accessory Device	Refer to note			
Cable Supplied	Refer to note			

Note:

1. The following models are provided to this EUT. The model of the AIM-78S-6 was chosen for final test.

Model	Description
AIM-78S-6, AIM-78H-6, AIM-78H-6XXXXXXXXXXXXXXX, AIM-78S-6XXXXXXXXXXXXXXX (X: maybe 1-9, A-Z, or blank)	For marketing purpose

2. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter 1	Tamura	XEW1934N	Input: 100-240Vac~1.5A , 50/60Hz Output: 19Vdc / 3.42A Power Line: AC: 1.5m cable without core DC: 1.2m cable without core
Adapter 2 (option)	FSP	FSP065-DBCM1	Input: 100-240Vac~ 2.0-1.0A, 50-60Hz Output: 19Vdc / 3.43A Power Line: AC: 1.5m cable without core DC: 1.5m cable with 1 core
Battery	Advantech	AIM-BAT-10	Rating: 10.8Vdc, 24.84Wh, 2300mAh
WWAN+WLAN module	USI	MS-01 Pro	-
Docking Station (option)	Advantech	AIM-DOC-0001	Rating: 19Vdc, 3.42A (VESA Dock)
Docking Station (option)	Advantech	AIM-VED0	Rating: 9 ~ 32Vdc (Vehicle Dock)
Docking Station (option)	Advantech	AIM-OFD-0000	Rating: 19Vdc (Office Dock)
Extension Modules-Barcode scanner (20°) (option)	Advantech	AIM-EXT0-0040 (20 degree)	Sensor: 640 x 480 CMOS sensor
Extension Modules-Barcode scanner (70°) (option)	Advantech	AIM-EXT0-0041 (70 degree)	Sensor: 640 x 480 CMOS sensor

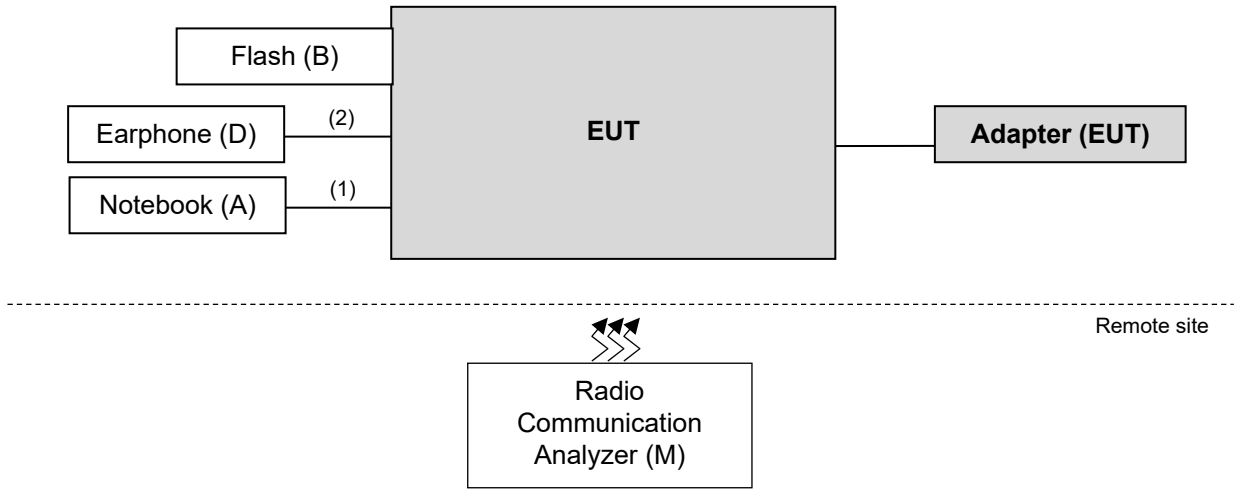
3. The following antennas were provided to the EUT.

Ant. Type	PIFA														
Ant. Connector	I-PEX_IV														
WWAN_Main															
Frequency (MHz)	704	710	716	734	740	746	751	756	777	782	787	791	806	821	824
Gain (dBi)	-3.77	-3.47	-3.24	-1.68	-1.24	-0.99	-0.45	-0.07	0.40	0.44	0.57	0.52	0.76	0.51	0.37
Frequency (MHz)	836	849	862	869	880	894	900	915	925	940	960	1710	1730	1750	1770
Gain (dBi)	0.02	0.10	0.10	0.16	0.19	-0.35	-0.83	-1.68	-2.29	-2.41	-2.39	1.67	2.19	2.73	3.25
Frequency (MHz)	1785	1805	1840	1850	1880	1910	1920	1930	1950	1960	1980	1990	2010	2018	2025
Gain (dBi)	3.52	3.43	2.63	1.99	-0.63	-0.88	-0.47	-0.20	0.84	1.18	2.07	2.17	2.48	2.14	1.91
Frequency (MHz)	2110	2140	2170	2300	2325	2350	2375	2400	2500	2515	2535	2555	2570	2595	2620
Gain (dBi)	1.08	1.00	1.14	0.05	-0.28	0.23	0.70	1.43	0.57	0.31	0.05	0.51	0.86	1.38	1.37
Frequency (MHz)	2630	2655	2680	2690											
Gain (dBi)	1.47	1.92	1.95	1.87											
WWAN_Aux (only RX)															
Frequency (MHz)	704	710	716	734	740	746	751	756	777	782	787	791	806	821	824
Gain (dBi)	-11.59	-11.10	-11.03	-9.89	-9.75	-9.54	-9.49	-9.59	-9.46	-9.38	-9.51	-9.28	-8.58	-7.57	-7.56
Frequency (MHz)	836	849	862	869	880	894	900	915	925	940	960	1710	1730	1750	1770
Gain (dBi)	-7.09	-6.80	-6.17	-5.74	-5.00	-4.53	-4.54	-4.52	-4.55	-4.26	-3.49	1.68	1.77	2.06	2.35
Frequency (MHz)	1785	1805	1840	1850	1880	1910	1920	1930	1950	1960	1980	1990	2010	2018	2025
Gain (dBi)	2.73	2.82	2.96	3.11	3.31	3.84	4.01	4.13	4.51	4.59	4.37	4.23	4.09	4.06	3.90
Frequency (MHz)	2110	2140	2170	2300	2325	2350	2375	2400	2500	2515	2535	2555	2570	2595	2620
Gain (dBi)	3.30	3.55	3.24	2.93	2.63	2.47	2.11	2.67	3.99	3.94	3.96	3.89	3.48	3.40	3.31
Frequency (MHz)	2630	2655	2680	2690											
Gain (dBi)	3.01	3.16	3.57	3.27											

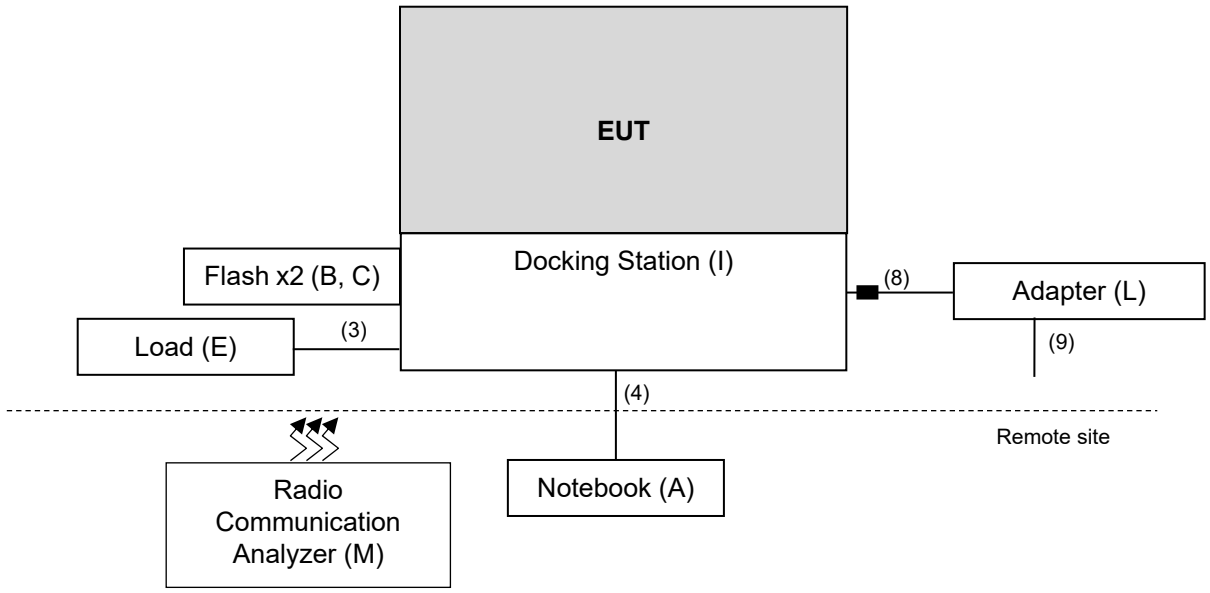
* The max. gain (Main Antenna) was chosen for final tests.
* The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.2 Configuration of System under Test

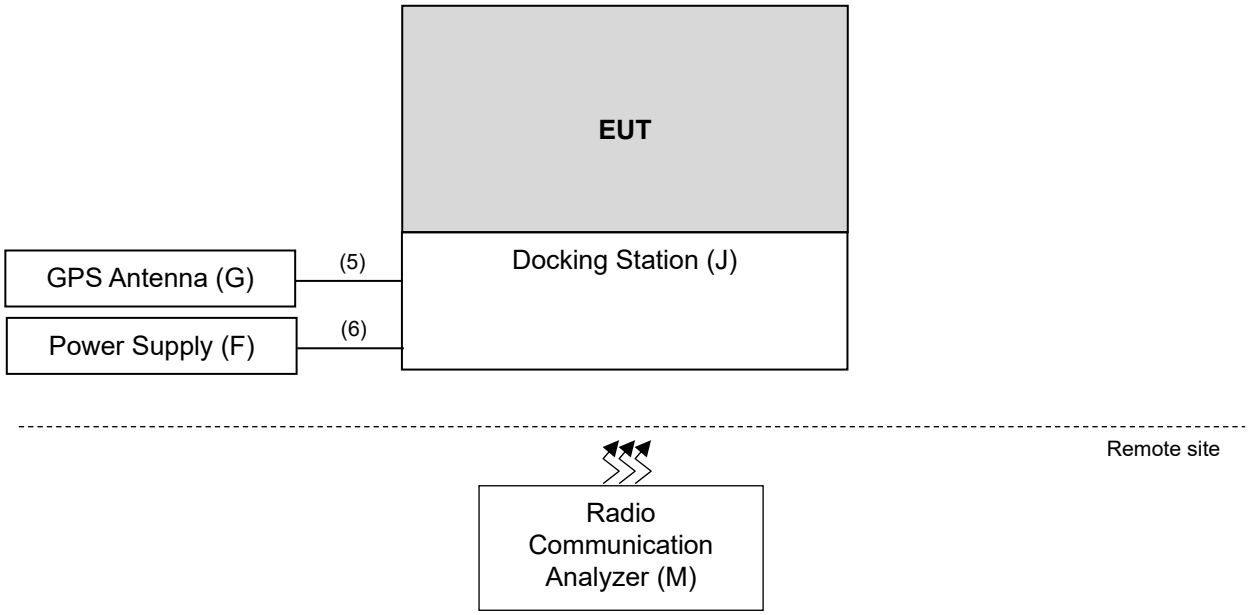
Test Mode A



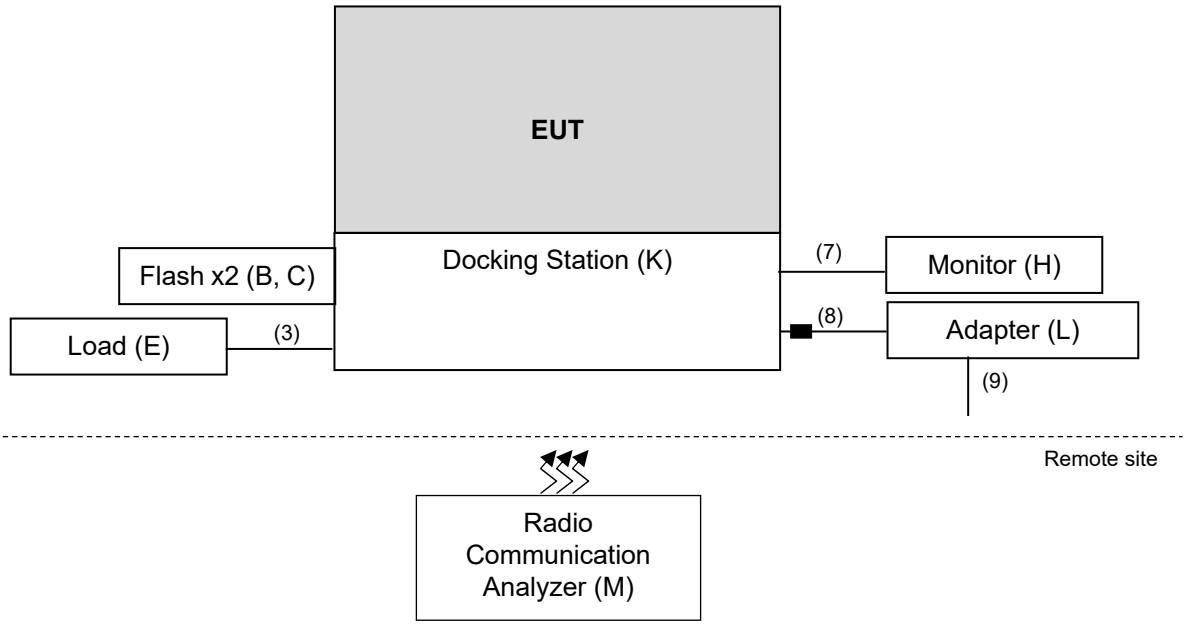
Test Mode B



Test Mode C



Test Mode D



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.	Notebook	Lenovo	20J4 MD A003TW	PF-11H9AK	FCC DoC Approved	-
B.	Flash	HP	v250W	05	NA	Type-A
C.	Flash	HP	v250W	03	NA	Type-A
D.	Earphone	APPLE	NA	NA	NA	-
E.	Load	NA	NA	NA	NA	-
F.	Power Supply	TOPWARD	6306D	809760	NA	-
G.	GPS Antenna	Connectec	SP070809-001	3-6004-031R000	NA	Provided by client
H.	Monitor	DELL	SE2416Hc	CN-OWJKMC-64180-66D-013B-A00	NA	-
I.	Docking Station	Advantech	AIM-DOC-0001	NA	NA	Provided by client
J.	Docking Station	Advantech	AIM-VED0	NA	NA	Provided by client
K.	Docking Station	Advantech	AIM-OFD-0000	NA	NA	Provided by client
L.	Adapter	FSP	FSP065-DBCM1	NA	NA	Provided by client
M.	Radio Communication Analyzer	Anritsu	MT8821C	6261806803	NA	-
			MT8820C	6201010284	NA	-

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	Type C cable	1	1	Y	0	-
2.	Audio cable	1	1.2	N	0	-
3.	RS232 cable	1	1.5	N	0	-
4.	LAN cable	1	7	N	0	RJ45, Cat.5e
5.	Antenna cable	1	5	N	0	Provided by client
6.	Power cable	1	1	N	0	Provided by client
7.	HDMI cable	1	2.0	Y	0	Provided by Lab. (Brand: Amber, Model: HDMI-AA120)
8.	DC Power cable	1	1.5	N	1	Provided by client
9.	AC Power cable	1	1.5	N	0	Provided by client

Note: The core(s) is(are) originally attached to the cable(s).

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
GPRS, EDGE	X-plane
WCDMA Band 5	X-plane
LTE Band 5	X-plane
LTE Band 26	X-plane

For radiated emission test item, the worst case (Test Mode A) was tested under radiated emission below 1GHz and above 1GHz. Test mode B, C and D were select the worst radiated emission mode (GPRS mode) for radiated emission below 1GHz tested only.

Test Mode	Test Condition
A	EUT + Adapter
B	EUT + VESA Dock
C	EUT + Vehicle Dock
D	EUT + Office Dock

GPRS, EDGE Mode

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	ERP	128 to 251	128 (824.2MHz), 189 (836.4MHz), 251 (848.8MHz)	GPRS, EDGE
-	Modulation Characteristics	128 to 251	189 (836.4MHz)	GPRS, EDGE
-	Frequency Stability	128 to 251	128 (824.2MHz), 251 (848.8MHz)	EDGE
-	Occupied Bandwidth	128 to 251	128 (824.2MHz), 189 (836.4MHz), 251 (848.8MHz)	GPRS, EDGE
-	Band Edge	128 to 251	128(824.2MHz), 251(848.8MHz)	GPRS, EDGE
-	Peak To Average Ratio	128 to 251	128 (824.2MHz), 189 (836.4MHz), 251 (848.8MHz)	GPRS, EDGE
-	Conducted Emission	128 to 251	128 (824.2MHz), 189 (836.4MHz), 251 (848.8MHz)	GPRS, EDGE
-	Radiated Emission	128 to 251	128 (824.2MHz), 189 (836.4MHz), 251 (848.8MHz)	GPRS, EDGE

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

WCDMA Band 5

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	ERP	4132 to 4233	4132 (826.4MHz), 4182 (836.4MHz), 4233 (846.6MHz)	WCDMA, HSDPA, HSUPA
-	Modulation Characteristics	4132 to 4233	4182 (836.4MHz)	WCDMA, HSDPA, HSUPA
-	Frequency Stability	4132 to 4233	4132 (826.4MHz), 4233 (846.6MHz)	WCDMA
-	Occupied Bandwidth	4132 to 4233	4132 (826.4MHz), 4182 (836.4MHz), 4233 (846.6MHz)	WCDMA, HSDPA, HSUPA
-	Band Edge	4132 to 4233	4132 (826.4MHz), 4233 (846.6MHz)	WCDMA, HSDPA, HSUPA
-	Peak To Average Ratio	4132 to 4233	4132 (826.4MHz), 4182 (836.4MHz), 4233 (846.6MHz)	WCDMA, HSDPA, HSUPA
-	Conducted Emission	4132 to 4233	4132 (826.4MHz), 4182 (836.4MHz), 4233 (846.6MHz)	WCDMA, HSDPA, HSUPA
-	Radiated Emission	4132 to 4233	4132 (826.4MHz), 4182 (836.4MHz), 4233 (846.6MHz)	WCDMA

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

LTE Band 5

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	ERP	20407 to 20643	20407 (824.7MHz), 20525 (836.5MHz), 20643 (848.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM	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
		20415 to 20635	20415 (825.5MHz), 20525 (836.5MHz), 20635 (847.5MHz)	3MHz	QPSK / 16QAM / 64QAM	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
		20425 to 20625	20425 (826.5MHz), 20525 (836.5MHz), 20625 (846.5MHz)	5MHz	QPSK / 16QAM / 64QAM	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
		20450 to 20600	20450 (829.0MHz), 20525 (836.5MHz), 20600 (844.0MHz)	10MHz	QPSK / 16QAM / 64QAM	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
-	Modulation Characteristics	20450 to 20600	20525 (836.5MHz)	10MHz	QPSK / 16QAM / 64QAM	50 RB / 0 RB Offset
-	Frequency Stability	20407 to 20643	20407 (824.7MHz), 20643 (848.3MHz)	1.4MHz	QPSK	6 RB / 0 RB Offset
		20415 to 20635	20415 (825.5MHz), 20635 (847.5MHz)	3MHz	QPSK	15 RB / 0 RB Offset
		20425 to 20625	20425 (826.5MHz), 20625 (846.5MHz)	5MHz	QPSK	25 RB / 0 RB Offset
		20450 to 20600	20450 (829.0MHz), 20600 (844.0MHz)	10MHz	QPSK	50 RB / 0 RB Offset
-	Occupied Bandwidth	20407 to 20643	20407 (824.7MHz), 20525 (836.5MHz), 20643 (848.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM	6 RB / 0RB Offset
		20415 to 20635	20415 (825.5MHz), 20525 (836.5MHz), 20635 (847.5MHz)	3MHz	QPSK / 16QAM / 64QAM	15 RB / 0RB Offset
		20425 to 20625	20425 (826.5MHz), 20525 (836.5MHz), 20625 (846.5MHz)	5MHz	QPSK / 16QAM / 64QAM	25RB / 0RB Offset
		20450 to 20600	20450 (829.0MHz), 20525 (836.5MHz), 20600 (844.0MHz)	10MHz	QPSK / 16QAM / 64QAM	50RB / 0RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Band Edge	20407 to 20643	20407 (824.7MHz), 20643 (848.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset 1 RB / 5 RB Offset 6 RB / 0 RB Offset
		20415 to 20635	20415 (825.5MHz), 20635 (847.5MHz)	3MHz	QPSK	1 RB / 0 RB Offset 1 RB / 14 RB Offset 15 RB / 0 RB Offset
		20425 to 20625	20425 (826.5MHz), 20625 (846.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		20450 to 20600	20450 (829.0MHz), 20600 (844.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
-	Peak to Average Ratio	20407 to 20643	20407 (824.7MHz), 20525 (836.5MHz), 20643 (848.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM	3 RB / 0 RB Offset
		20415 to 20635	20415 (825.5MHz), 20525 (836.5MHz), 20635 (847.5MHz)	3MHz	QPSK / 16QAM / 64QAM	1 RB / 0 RB Offset
		20425 to 20625	20425 (826.5MHz), 20525 (836.5MHz), 20625 (846.5MHz)	5MHz	QPSK / 16QAM / 64QAM	1 RB / 0 RB Offset
		20450 to 20600	20450 (829.0MHz), 20525 (836.5MHz), 20600 (844.0MHz)	10MHz	QPSK / 16QAM / 64QAM	1 RB / 0 RB Offset
-	Conducted Emission	20407 to 20643	20407 (824.7MHz), 20525 (836.5MHz), 20643 (848.3MHz)	1.4MHz	QPSK	3 RB / 0 RB Offset
		20415 to 20635	20415 (825.5MHz), 20525 (836.5MHz), 20635 (847.5MHz)	3MHz	QPSK	1 RB / 0 RB Offset
		20425 to 20625	20425 (826.5MHz), 20525 (836.5MHz), 20625 (846.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		20450 to 20600	20450 (829.0MHz), 20525 (836.5MHz), 20600 (844.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	20407 to 20643	20407 (824.7MHz), 20525 (836.5MHz), 20643 (848.3MHz)	1.4MHz	QPSK	3 RB / 0 RB Offset
		20425 to 20625	20425 (826.5MHz), 20525 (836.5MHz), 20625 (846.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		20450 to 20600	20450 (829.0MHz), 20525 (836.5MHz), 20600 (844.0MHz)	10MHz	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 36.521-1 Section 6.6.3.1.4.1, choose the lowest, 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM and 64QAM, measured value of QPSK is higher than 16QAM, and 64QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM and 64QAM modes, the other test items were performed under worse mode according to the maximum output power.

LTE Band 26

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	ERP	26797 to 27033	26797 (824.7MHz), 26915 (836.5MHz), 27033 (848.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM	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
		26805 to 27025	26805 (825.5MHz), 26915 (836.5MHz), 27025 (847.5MHz)	3MHz	QPSK / 16QAM / 64QAM	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
		26815 to 27015	26815 (826.5MHz), 26915 (836.5MHz), 27015 (846.5MHz)	5MHz	QPSK / 16QAM / 64QAM	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
		26840 to 26990	26840 (829.0MHz), 26915 (836.5MHz), 26990 (844.0MHz)	10MHz	QPSK / 16QAM / 64QAM	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
		26865 to 26965	26865 (831.5MHz), 26915 (836.5MHz), 26965 (841.5MHz)	15MHz	QPSK / 16QAM / 64QAM	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
-	Modulation Characteristics	26865 to 26965	26915 (836.5MHz)	15MHz	QPSK / 16QAM / 64QAM	75 RB / 0 RB Offset
-	Frequency Stability	26797 to 27033	26797 (824.7MHz), 27033 (848.3MHz)	1.4MHz	QPSK	6 RB / 0 RB Offset
		26805 to 27025	26805 (825.5MHz), 27025 (847.5MHz)	3MHz	QPSK	15 RB / 0 RB Offset
		26815 to 27015	26815 (826.5MHz), 27015 (846.5MHz)	5MHz	QPSK	25 RB / 0 RB Offset
		26840 to 26990	26840 (829.0MHz), 26990 (844.0MHz)	10MHz	QPSK	50 RB / 0 RB Offset
		26865 to 26965	26865 (831.5MHz), 26965 (841.5MHz)	15MHz	QPSK	75 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Occupied Bandwidth	26797 to 27033	26797 (824.7MHz), 26915 (836.5MHz), 27033 (848.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM	6 RB / 0 RB Offset
		26805 to 27025	26805 (825.5MHz), 26915 (836.5MHz), 27025 (847.5MHz)	3MHz	QPSK / 16QAM / 64QAM	15 RB / 0 RB Offset
		26815 to 27015	26815 (826.5MHz), 26915 (836.5MHz), 27015 (846.5MHz)	5MHz	QPSK / 16QAM / 64QAM	25 RB / 0 RB Offset
		26840 to 26990	26840 (829.0MHz), 26915 (836.5MHz), 26990 (844.0MHz)	10MHz	QPSK / 16QAM / 64QAM	50 RB / 0 RB Offset
		26865 to 26965	26865 (831.5MHz), 26915 (836.5MHz), 26965 (841.5MHz)	15MHz	QPSK / 16QAM / 64QAM	75 RB / 0 RB Offset
-	Band Edge	26797 to 27033	26797 (824.7MHz), 27033 (848.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset 1 RB / 5 RB Offset 6 RB / 0 RB Offset
		26805 to 27025	26805 (825.5MHz), 27025 (847.5MHz)	3MHz	QPSK	1 RB / 0 RB Offset 1 RB / 14 RB Offset 15 RB / 0 RB Offset
		26815 to 27015	26815 (826.5MHz), 27015 (846.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		26840 to 26990	26840 (829.0MHz), 26990 (844.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
		26865 to 26965	26865 (831.5MHz), 26965 (841.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 74 RB Offset 75 RB / 0 RB Offset
-	Peak to Average Ratio	26797 to 27033	26797 (824.7MHz), 26915 (836.5MHz), 27033 (848.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM	3 RB / 1 RB Offset
		26805 to 27025	26805 (825.5MHz), 26915 (836.5MHz), 27025 (847.5MHz)	3MHz	QPSK / 16QAM / 64QAM	1 RB / 14 RB Offset
		26815 to 27015	26815 (826.5MHz), 26915 (836.5MHz), 27015 (846.5MHz)	5MHz	QPSK / 16QAM / 64QAM	1 RB / 24 RB Offset
		26840 to 26990	26840 (829.0MHz), 26915 (836.5MHz), 26990 (844.0MHz)	10MHz	QPSK / 16QAM / 64QAM	1 RB / 0 RB Offset
		26865 to 26965	26865 (831.5MHz), 26915 (836.5MHz), 26965 (841.5MHz)	15MHz	QPSK / 16QAM / 64QAM	1 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Conducted Emission	26797 to 27033	26797 (824.7MHz), 26915 (836.5MHz), 27033 (848.3MHz)	1.4MHz	QPSK	3 RB / 1 RB Offset
		26805 to 27025	26805 (825.5MHz), 26915 (836.5MHz), 27025 (847.5MHz)	3MHz	QPSK	1 RB / 14 RB Offset
		26815 to 27015	26815 (826.5MHz), 26915 (836.5MHz), 27015 (846.5MHz)	5MHz	QPSK	1 RB / 24 RB Offset
		26840 to 26990	26840 (829.0MHz), 26915 (836.5MHz), 26990 (844.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset
		26865 to 26965	26865 (831.5MHz), 26915 (836.5MHz), 26965 (841.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission	26797 to 27033	26797 (824.7MHz), 26915 (836.5MHz), 27033 (848.3MHz)	1.4MHz	QPSK	3 RB / 1 RB Offset
		26815 to 27015	26815 (826.5MHz), 26915 (836.5MHz), 27015 (846.5MHz)	5MHz	QPSK	1 RB / 24 RB Offset
		26865 to 26965	26865 (831.5MHz), 26915 (836.5MHz), 26965 (841.5MHz)	15MHz	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 36.521-1 Section 6.6.3.1.4.1, choose the lowest, 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM and 64QAM, measured value of QPSK is higher than 16QAM, and 64QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM and 64QAM modes, the other test items were performed under worse mode according to the maximum output power.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
ERP	25deg. C, 60%RH	120Vac, 60Hz	Willy Cheng
Modulation Characteristics	25deg. C, 60%RH	120Vac, 60Hz	Willy Cheng
Frequency Stability	25deg. C, 60%RH	10.80Vdc	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	Harry Hsueh Charles Hsiao Karl Lee

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 22

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 7 watts e.r.p.

4.1.2 Test Procedures

Conducted Power Measurement:

The EUT was set up for the maximum power with GPRS, EDGE, 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	GPRS, EDGE 850		
Channel	128	189	251
Frequency	824.2	836.4	848.8
GPRS 1Tx Slot	32.23	32.42	32.59
GPRS 2Tx Slot	29.53	29.63	29.66
GPRS 3Tx Slot	27.71	27.73	27.84
GPRS 4Tx Slot	26.41	26.44	26.49
DTM 9 (GPRS)	29.49	29.48	29.49
DTM 11 (GPRS)	27.62	27.68	27.77
EDGE 1Tx Slot (MCS9)	26.32	26.22	26.42
EDGE 2Tx Slot (MCS9)	23.77	23.74	23.79
EDGE 3Tx Slot (MCS9)	22.12	22.00	22.17
EDGE 4Tx Slot (MCS9)	20.66	20.55	20.75
DTM 9 (EDGE)	23.72	23.65	23.71
DTM 11 (EDGE)	22.08	21.97	22.05

Band	WCDMA V		
TX Channel	4132	4182	4233
Rx Channel	4357	4407	4458
Frequency	826.4	836.4	846.6
RMC 12.2K	23.82	23.81	23.86
HSDPA Subtest-1	22.85	22.86	22.83
HSDPA Subtest-2	22.83	22.87	22.82
HSDPA Subtest-3	22.36	22.35	22.35
HSDPA Subtest-4	22.37	22.36	22.36
DC-HSDPA Subtest-1	22.77	22.85	22.74
DC-HSDPA Subtest-2	22.83	22.78	22.79
DC-HSDPA Subtest-3	22.30	22.28	22.25
DC-HSDPA Subtest-4	22.31	22.34	22.29
HSUPA Subtest-1	22.85	22.78	22.82
HSUPA Subtest-2	20.82	20.87	20.83
HSUPA Subtest-3	21.89	21.85	21.66
HSUPA Subtest-4	20.85	20.75	20.78
HSUPA Subtest-5	22.81	22.91	22.82
HSPA+ Subtest-1	20.13	20.12	20.15

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20450	20525	20600
		Frequency (MHz)		829	836.5	844
10M	QPSK	1	0	23.17	23.21	23.20
		1	24	23.12	23.16	23.15
		1	49	23.09	23.13	23.12
		25	0	22.16	22.20	22.19
		25	12	22.15	22.19	22.18
		25	25	22.11	22.15	22.14
		50	0	22.08	22.12	22.11
10M	16QAM	1	0	22.17	22.17	22.12
		1	24	22.10	22.09	22.14
		1	49	22.01	22.07	22.07
		25	0	21.12	21.20	21.11
		25	12	21.09	21.18	21.17
		25	25	21.04	21.12	21.09
		50	0	21.04	21.08	21.11
10M	64QAM	1	0	21.13	21.14	21.19
		1	24	21.02	21.12	21.11
		1	49	21.07	21.06	21.12
		25	0	20.10	20.19	20.11
		25	12	20.13	20.09	20.16
		25	25	20.06	20.11	20.09
		50	0	19.99	20.04	20.03

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20425	20525	20625
		Frequency (MHz)		826.5	836.5	846.5
5M	QPSK	1	0	23.11	23.06	23.12
		1	12	22.90	22.96	23.07
		1	24	22.98	23.10	22.87
		12	0	21.97	22.11	22.16
		12	6	22.11	22.15	22.16
		12	13	21.97	21.98	21.86
		25	0	21.86	21.97	21.82
5M	16QAM	1	0	21.96	22.05	21.98
		1	12	22.01	22.01	21.96
		1	24	21.88	21.84	21.96
		12	0	20.90	21.11	20.93
		12	6	21.04	20.97	21.05
		12	13	21.00	20.98	20.97
		25	0	20.82	20.96	20.99
5M	64QAM	1	0	20.99	20.91	21.01
		1	12	20.92	21.01	20.96
		1	24	20.96	20.87	21.05
		12	0	20.06	19.90	20.08
		12	6	20.06	20.01	19.98
		12	13	19.90	19.89	20.06
		25	0	19.91	19.92	20.03

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20415	20525	20635
		Frequency (MHz)		825.5	836.5	847.5
3M	QPSK	1	0	23.08	23.04	23.00
		1	7	22.99	23.03	23.04
		1	14	22.93	23.06	23.04
		8	0	22.01	22.00	22.07
		8	3	22.09	21.99	22.07
		8	7	22.00	22.07	21.98
		15	0	21.99	21.91	22.05
3M	16QAM	1	0	21.99	21.98	22.10
		1	7	21.96	22.06	22.07
		1	14	21.92	21.89	21.89
		8	0	21.05	21.01	20.92
		8	3	20.90	20.99	21.06
		8	7	20.90	20.89	21.02
		15	0	20.98	21.07	20.98
3M	64QAM	1	0	21.05	20.99	21.05
		1	7	20.91	20.95	21.02
		1	14	20.85	20.94	20.98
		8	0	19.94	20.14	20.06
		8	3	20.02	20.03	20.00
		8	7	20.01	20.10	20.05
		15	0	19.82	19.94	19.95

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20407	20525	20643
		Frequency (MHz)		824.7	836.5	848.3
1.4M	QPSK	1	0	23.09	23.07	23.03
		1	2	22.95	23.03	23.00
		1	5	22.94	22.97	22.93
		3	0	23.13	23.11	23.07
		3	1	23.03	23.06	23.11
		3	3	23.07	23.03	23.01
		6	0	22.04	21.99	21.95
1.4M	16QAM	1	0	21.99	21.97	22.12
		1	2	22.07	21.95	21.94
		1	5	21.95	22.01	22.04
		3	0	21.91	21.98	21.98
		3	1	21.89	22.04	22.12
		3	3	21.92	22.08	22.01
		6	0	20.88	21.04	20.83
1.4M	64QAM	1	0	20.93	20.94	21.13
		1	2	20.95	20.96	20.89
		1	5	21.01	20.88	20.86
		3	0	21.12	21.08	21.08
		3	1	20.96	20.96	21.05
		3	3	20.98	21.00	21.12
		6	0	19.90	19.94	19.86

LTE Band 26						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26865	26915	26965
		Frequency (MHz)		831.5	836.5	841.5
15M	QPSK	1	0	23.28	23.27	23.31
		1	37	23.22	23.21	23.25
		1	74	23.25	23.18	23.28
		36	0	22.33	22.29	22.36
		36	19	22.29	22.20	22.32
		36	39	22.26	22.22	22.29
		75	0	22.24	22.20	22.27
15M	16QAM	1	0	22.21	22.16	22.27
		1	37	22.16	22.13	22.23
		1	74	22.22	22.14	22.23
		36	0	21.30	21.25	21.27
		36	19	21.20	21.12	21.26
		36	39	21.18	21.08	21.21
		75	0	21.24	21.23	21.26
15M	64QAM	1	0	21.23	21.17	21.30
		1	37	21.13	21.07	21.16
		1	74	21.23	21.17	21.18
		36	0	20.29	20.24	20.34
		36	19	20.21	20.11	20.29
		36	39	20.23	20.17	20.27
		75	0	20.24	20.14	20.23

LTE Band 26						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26840	26915	26990
		Frequency (MHz)		829	836.5	844
10M	QPSK	1	0	23.17	23.22	23.14
		1	24	23.10	23.10	23.04
		1	49	23.14	23.07	23.12
		25	0	22.29	22.24	22.31
		25	12	22.23	22.11	22.23
		25	25	22.15	22.10	22.22
		50	0	22.24	22.12	22.08
10M	16QAM	1	0	22.09	22.10	22.06
		1	24	22.16	22.09	22.12
		1	49	22.11	22.01	22.16
		25	0	21.26	21.15	21.28
		25	12	21.17	20.99	21.25
		25	25	21.05	21.02	21.23
		50	0	21.09	21.13	21.09
10M	64QAM	1	0	21.17	21.14	21.26
		1	24	21.02	20.92	21.05
		1	49	21.13	21.16	20.99
		25	0	20.27	20.18	20.03
		25	12	20.20	20.10	20.17
		25	25	20.19	20.04	20.20
		50	0	20.23	20.13	20.07

LTE Band 26						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26815	26915	27015
		Frequency (MHz)		826.5	836.5	846.5
5M	QPSK	1	0	23.04	23.12	23.01
		1	12	23.00	23.05	23.04
		1	24	23.07	23.03	23.18
		12	0	22.15	22.18	22.30
		12	6	22.23	22.05	22.14
		12	13	22.01	21.97	22.01
		25	0	22.19	22.00	22.13
5M	16QAM	1	0	22.09	21.97	22.14
		1	12	22.03	21.96	22.24
		1	24	22.02	21.90	22.09
		12	0	21.13	21.12	21.30
		12	6	21.02	20.86	21.10
		12	13	20.92	20.92	21.17
		25	0	20.97	21.00	21.09
5M	64QAM	1	0	21.03	21.12	21.05
		1	12	20.88	20.88	21.14
		1	24	21.03	21.12	21.15
		12	0	20.15	20.17	20.27
		12	6	20.17	19.99	20.16
		12	13	20.12	20.03	20.18
		25	0	20.20	20.01	20.14

LTE Band 26						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26805	26915	27025
		Frequency (MHz)		825.5	836.5	847.5
3M	QPSK	1	0	23.19	23.01	23.19
		1	7	23.09	22.98	23.07
		1	14	22.93	23.03	23.22
		8	0	22.18	22.30	22.11
		8	3	22.03	22.18	22.31
		8	7	22.00	22.20	22.11
		15	0	22.12	22.03	22.10
3M	16QAM	1	0	22.09	21.96	22.08
		1	7	22.00	22.08	22.05
		1	14	21.93	22.08	22.16
		8	0	21.04	21.18	21.17
		8	3	20.98	21.18	21.15
		8	7	20.97	21.15	21.07
		15	0	21.05	20.95	21.05
3M	64QAM	1	0	21.04	21.24	21.15
		1	7	20.81	21.03	20.98
		1	14	21.03	20.99	21.08
		8	0	20.04	19.98	20.27
		8	3	19.98	20.02	20.02
		8	7	19.92	20.12	20.06
		15	0	20.11	19.92	20.10

LTE Band 26						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26797	26915	27033
		Frequency (MHz)		824.7	836.5	848.3
1.4M	QPSK	1	0	23.16	23.04	23.22
		1	2	22.98	22.96	23.16
		1	5	22.99	23.10	23.10
		3	0	23.19	23.16	23.12
		3	1	22.97	23.09	23.26
		3	3	23.03	23.22	23.17
		6	0	22.08	21.97	22.08
1.4M	16QAM	1	0	22.01	22.06	22.08
		1	2	21.99	22.07	22.02
		1	5	21.93	22.14	22.09
		3	0	22.14	22.20	22.13
		3	1	21.92	22.19	22.13
		3	3	21.94	22.11	22.17
		6	0	21.12	20.94	21.17
1.4M	64QAM	1	0	21.10	21.14	21.10
		1	2	20.87	21.02	21.14
		1	5	21.10	20.93	21.15
		3	0	21.05	21.02	21.22
		3	1	20.99	21.14	21.08
		3	3	20.91	21.18	21.02
		6	0	20.01	20.00	20.04

ERP Power (dBm)

Band	GPRS, EDGE 850		
Channel	128	189	251
Frequency	824.2	836.4	848.8
GPRS 1Tx Slot	30.45	30.64	30.81
GPRS 2Tx Slot	27.75	27.85	27.88
GPRS 3Tx Slot	25.93	25.95	26.06
GPRS 4Tx Slot	24.63	24.66	24.71
DTM 9 (GPRS)	27.71	27.70	27.71
DTM 11 (GPRS)	25.84	25.90	25.99
EDGE 1Tx Slot (MCS9)	24.54	24.44	24.64
EDGE 2Tx Slot (MCS9)	21.99	21.96	22.01
EDGE 3Tx Slot (MCS9)	20.34	20.22	20.39
EDGE 4Tx Slot (MCS9)	18.88	18.77	18.97
DTM 9 (EDGE)	21.94	21.87	21.93
DTM 11 (EDGE)	20.30	20.19	20.27

Band	WCDMA V		
TX Channel	4132	4182	4233
Rx Channel	4357	4407	4458
Frequency	826.4	836.4	846.6
RMC 12.2K	22.04	22.03	22.08
HSDPA Subtest-1	21.07	21.08	21.05
HSDPA Subtest-2	21.05	21.09	21.04
HSDPA Subtest-3	20.58	20.57	20.57
HSDPA Subtest-4	20.59	20.58	20.58
DC-HSDPA Subtest-1	20.99	21.07	20.96
DC-HSDPA Subtest-2	21.05	21.00	21.01
DC-HSDPA Subtest-3	20.52	20.50	20.47
DC-HSDPA Subtest-4	20.53	20.56	20.51
HSUPA Subtest-1	21.07	21.00	21.04
HSUPA Subtest-2	19.04	19.09	19.05
HSUPA Subtest-3	20.11	20.07	19.88
HSUPA Subtest-4	19.07	18.97	19.00
HSUPA Subtest-5	21.03	21.13	21.04
HSPA+ Subtest-1	18.35	18.34	18.37

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20450	20525	20600
		Frequency (MHz)		829	836.5	844
10M	QPSK	1	0	21.39	21.43	21.42
		1	24	21.34	21.38	21.37
		1	49	21.31	21.35	21.34
		25	0	20.38	20.42	20.41
		25	12	20.37	20.41	20.40
		25	25	20.33	20.37	20.36
		50	0	20.30	20.34	20.33
10M	16QAM	1	0	20.39	20.39	20.34
		1	24	20.32	20.31	20.36
		1	49	20.23	20.29	20.29
		25	0	19.34	19.42	19.33
		25	12	19.31	19.40	19.39
		25	25	19.26	19.34	19.31
		50	0	19.26	19.30	19.33
10M	64QAM	1	0	19.35	19.36	19.41
		1	24	19.24	19.34	19.33
		1	49	19.29	19.28	19.34
		25	0	18.32	18.41	18.33
		25	12	18.35	18.31	18.38
		25	25	18.28	18.33	18.31
		50	0	18.21	18.26	18.25

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20425	20525	20625
		Frequency (MHz)		826.5	836.5	846.5
5M	QPSK	1	0	21.33	21.28	21.34
		1	12	21.12	21.18	21.29
		1	24	21.20	21.32	21.09
		12	0	20.19	20.33	20.38
		12	6	20.33	20.37	20.38
		12	13	20.19	20.20	20.08
		25	0	20.08	20.19	20.04
5M	16QAM	1	0	20.18	20.27	20.20
		1	12	20.23	20.23	20.18
		1	24	20.10	20.06	20.18
		12	0	19.12	19.33	19.15
		12	6	19.26	19.19	19.27
		12	13	19.22	19.20	19.19
		25	0	19.04	19.18	19.21
5M	64QAM	1	0	19.21	19.13	19.23
		1	12	19.14	19.23	19.18
		1	24	19.18	19.09	19.27
		12	0	18.28	18.12	18.30
		12	6	18.28	18.23	18.20
		12	13	18.12	18.11	18.28
		25	0	18.13	18.14	18.25

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20415	20525	20635
		Frequency (MHz)		825.5	836.5	847.5
3M	QPSK	1	0	21.30	21.26	21.22
		1	7	21.21	21.25	21.26
		1	14	21.15	21.28	21.26
		8	0	20.23	20.22	20.29
		8	3	20.31	20.21	20.29
		8	7	20.22	20.29	20.20
		15	0	20.21	20.13	20.27
3M	16QAM	1	0	20.21	20.20	20.32
		1	7	20.18	20.28	20.29
		1	14	20.14	20.11	20.11
		8	0	19.27	19.23	19.14
		8	3	19.12	19.21	19.28
		8	7	19.12	19.11	19.24
		15	0	19.20	19.29	19.20
3M	64QAM	1	0	19.27	19.21	19.27
		1	7	19.13	19.17	19.24
		1	14	19.07	19.16	19.20
		8	0	18.16	18.36	18.28
		8	3	18.24	18.25	18.22
		8	7	18.23	18.32	18.27
		15	0	18.04	18.16	18.17

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20407	20525	20643
		Frequency (MHz)		824.7	836.5	848.3
1.4M	QPSK	1	0	21.31	21.29	21.25
		1	2	21.17	21.25	21.22
		1	5	21.16	21.19	21.15
		3	0	21.35	21.33	21.29
		3	1	21.25	21.28	21.33
		3	3	21.29	21.25	21.23
		6	0	20.26	20.21	20.17
1.4M	16QAM	1	0	20.21	20.19	20.34
		1	2	20.29	20.17	20.16
		1	5	20.17	20.23	20.26
		3	0	20.13	20.20	20.20
		3	1	20.11	20.26	20.34
		3	3	20.14	20.30	20.23
		6	0	19.10	19.26	19.05
1.4M	64QAM	1	0	19.15	19.16	19.35
		1	2	19.17	19.18	19.11
		1	5	19.23	19.10	19.08
		3	0	19.34	19.30	19.30
		3	1	19.18	19.18	19.27
		3	3	19.20	19.22	19.34
		6	0	18.12	18.16	18.08

LTE Band 26						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26865	26915	26965
		Frequency (MHz)		831.5	836.5	841.5
15M	QPSK	1	0	21.50	21.49	21.53
		1	37	21.44	21.43	21.47
		1	74	21.47	21.40	21.50
		36	0	20.55	20.51	20.58
		36	19	20.51	20.42	20.54
		36	39	20.48	20.44	20.51
		75	0	20.46	20.42	20.49
15M	16QAM	1	0	20.43	20.38	20.49
		1	37	20.38	20.35	20.45
		1	74	20.44	20.36	20.45
		36	0	19.52	19.47	19.49
		36	19	19.42	19.34	19.48
		36	39	19.40	19.30	19.43
		75	0	19.46	19.45	19.48
15M	64QAM	1	0	19.45	19.39	19.52
		1	37	19.35	19.29	19.38
		1	74	19.45	19.39	19.40
		36	0	18.51	18.46	18.56
		36	19	18.43	18.33	18.51
		36	39	18.45	18.39	18.49
		75	0	18.46	18.36	18.45

LTE Band 26						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26840	26915	26990
		Frequency (MHz)		829	836.5	844
10M	QPSK	1	0	21.39	21.44	21.36
		1	24	21.32	21.32	21.26
		1	49	21.36	21.29	21.34
		25	0	20.51	20.46	20.53
		25	12	20.45	20.33	20.45
		25	25	20.37	20.32	20.44
		50	0	20.46	20.34	20.30
10M	16QAM	1	0	20.31	20.32	20.28
		1	24	20.38	20.31	20.34
		1	49	20.33	20.23	20.38
		25	0	19.48	19.37	19.50
		25	12	19.39	19.21	19.47
		25	25	19.27	19.24	19.45
		50	0	19.31	19.35	19.31
10M	64QAM	1	0	19.39	19.36	19.48
		1	24	19.24	19.14	19.27
		1	49	19.35	19.38	19.21
		25	0	18.49	18.40	18.25
		25	12	18.42	18.32	18.39
		25	25	18.41	18.26	18.42
		50	0	18.45	18.35	18.29

LTE Band 26						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26815	26915	27015
		Frequency (MHz)		826.5	836.5	846.5
5M	QPSK	1	0	21.26	21.34	21.23
		1	12	21.22	21.27	21.26
		1	24	21.29	21.25	21.40
		12	0	20.37	20.40	20.52
		12	6	20.45	20.27	20.36
		12	13	20.23	20.19	20.23
		25	0	20.41	20.22	20.35
5M	16QAM	1	0	20.31	20.19	20.36
		1	12	20.25	20.18	20.46
		1	24	20.24	20.12	20.31
		12	0	19.35	19.34	19.52
		12	6	19.24	19.08	19.32
		12	13	19.14	19.14	19.39
		25	0	19.19	19.22	19.31
5M	64QAM	1	0	19.25	19.34	19.27
		1	12	19.10	19.10	19.36
		1	24	19.25	19.34	19.37
		12	0	18.37	18.39	18.49
		12	6	18.39	18.21	18.38
		12	13	18.34	18.25	18.40
		25	0	18.42	18.23	18.36

LTE Band 26						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26805	26915	27025
		Frequency (MHz)		825.5	836.5	847.5
3M	QPSK	1	0	21.41	21.23	21.41
		1	7	21.31	21.20	21.29
		1	14	21.15	21.25	21.44
		8	0	20.40	20.52	20.33
		8	3	20.25	20.40	20.53
		8	7	20.22	20.42	20.33
		15	0	20.34	20.25	20.32
3M	16QAM	1	0	20.31	20.18	20.30
		1	7	20.22	20.30	20.27
		1	14	20.15	20.30	20.38
		8	0	19.26	19.40	19.39
		8	3	19.20	19.40	19.37
		8	7	19.19	19.37	19.29
		15	0	19.27	19.17	19.27
3M	64QAM	1	0	19.26	19.46	19.37
		1	7	19.03	19.25	19.20
		1	14	19.25	19.21	19.30
		8	0	18.26	18.20	18.49
		8	3	18.20	18.24	18.24
		8	7	18.14	18.34	18.28
		15	0	18.33	18.14	18.32

LTE Band 26						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26797	26915	27033
		Frequency (MHz)		824.7	836.5	848.3
1.4M	QPSK	1	0	21.38	21.26	21.44
		1	2	21.20	21.18	21.38
		1	5	21.21	21.32	21.32
		3	0	21.41	21.38	21.34
		3	1	21.19	21.31	21.48
		3	3	21.25	21.44	21.39
		6	0	20.30	20.19	20.30
1.4M	16QAM	1	0	20.23	20.28	20.30
		1	2	20.21	20.29	20.24
		1	5	20.15	20.36	20.31
		3	0	20.36	20.42	20.35
		3	1	20.14	20.41	20.35
		3	3	20.16	20.33	20.39
		6	0	19.34	19.16	19.39
1.4M	64QAM	1	0	19.32	19.36	19.32
		1	2	19.09	19.24	19.36
		1	5	19.32	19.15	19.37
		3	0	19.27	19.24	19.44
		3	1	19.21	19.36	19.30
		3	3	19.13	19.40	19.24
		6	0	18.23	18.22	18.26

4.2 Modulation Characteristics Measurement

4.2.1 Limits of Modulation Characteristics

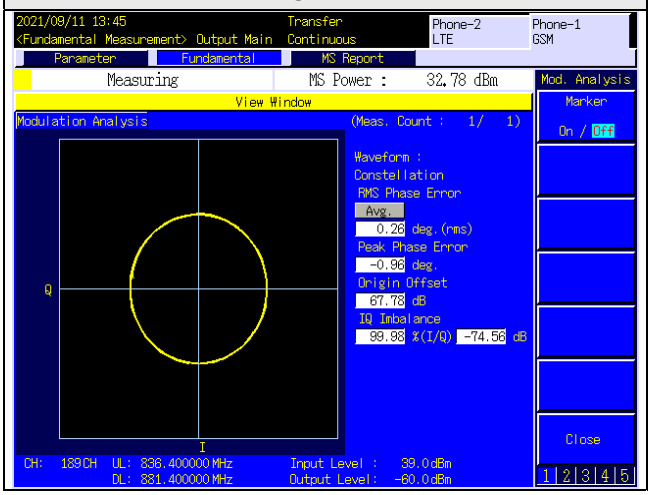
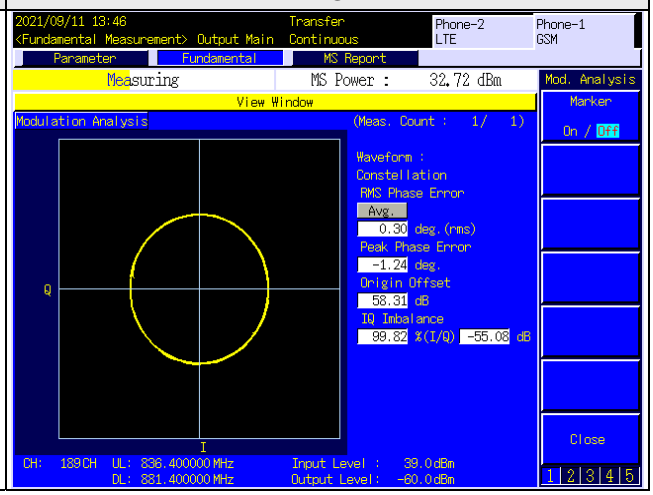
N/A

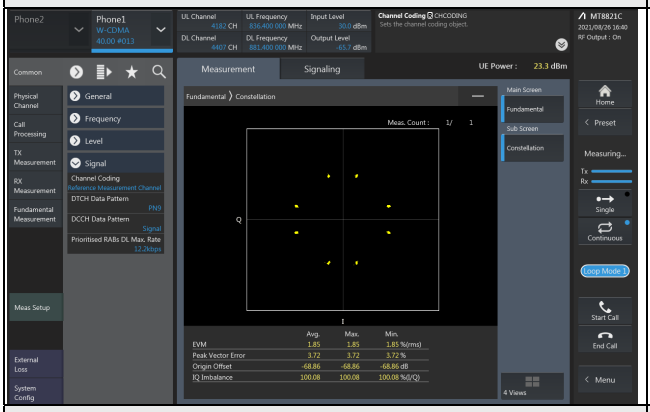
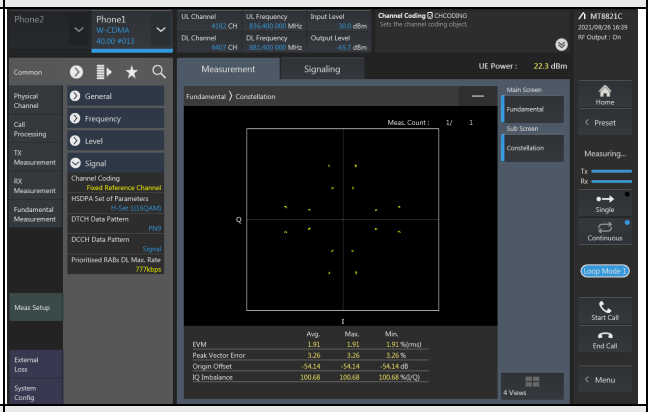
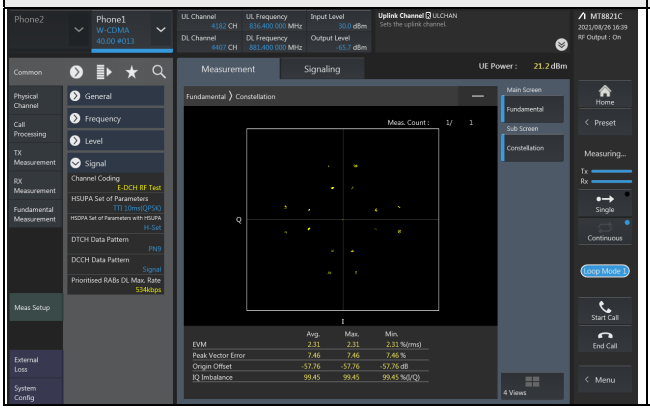
4.2.2 Test Procedure

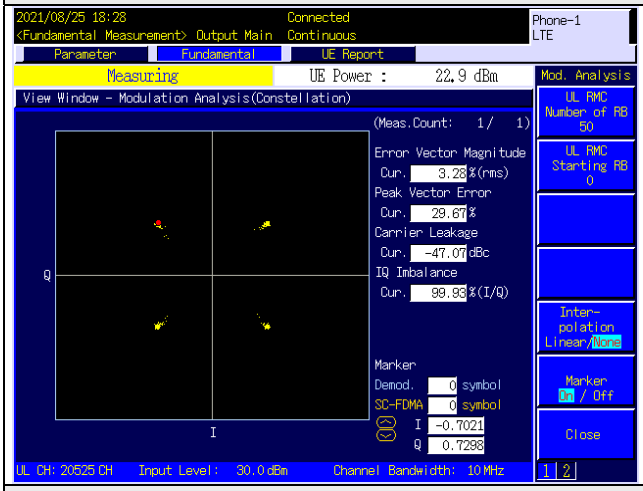
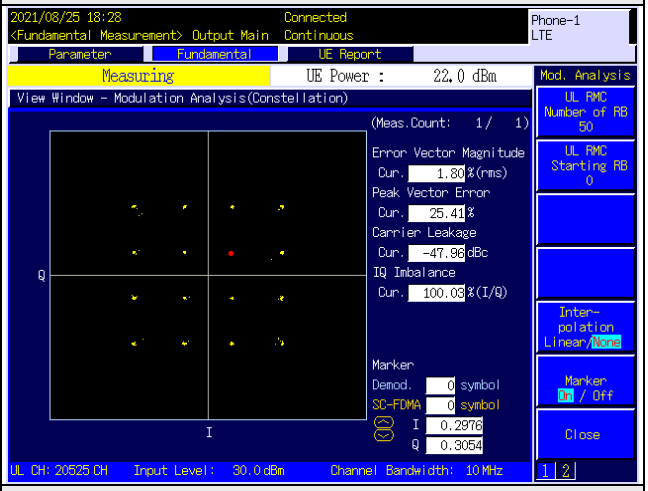
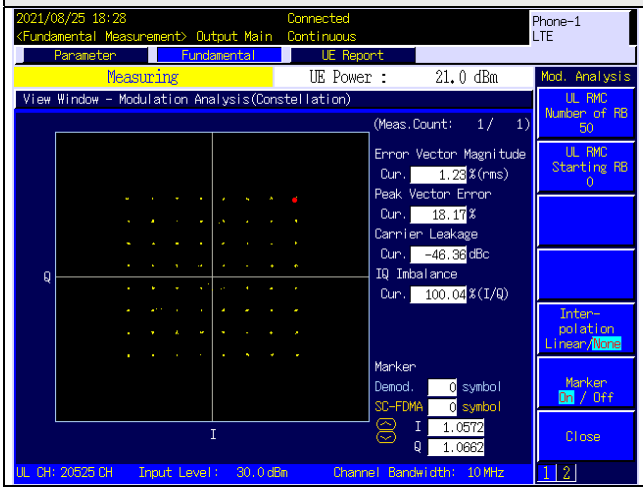
Connect the EUT to Communication Simulator via the antenna connector, The frequency band is set as EUT supported Modulation and Channels, the EUT output is matched with 50 ohm load, the waveform quality and constellation of the EUT was tested.

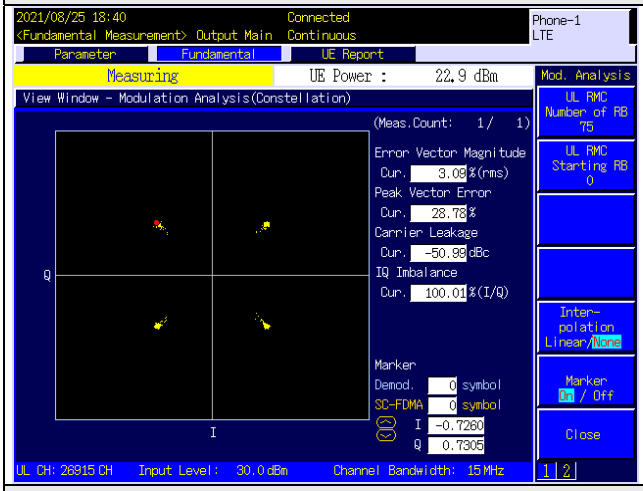
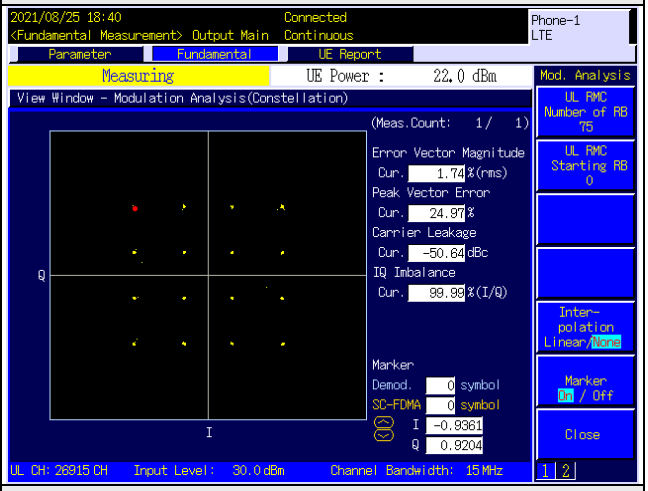
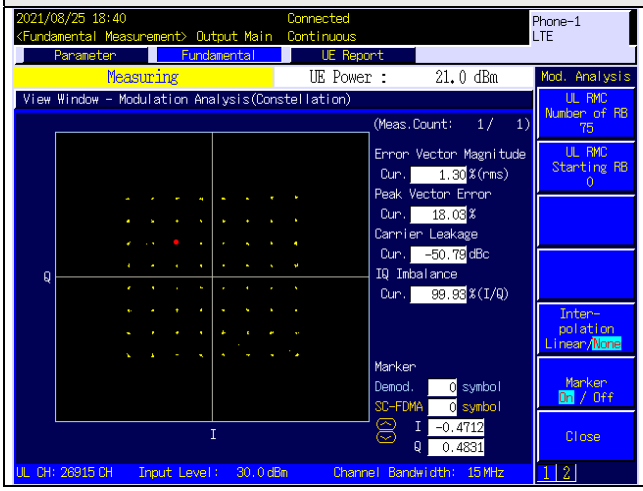
4.2.3 Test Setup

4.2.4 Test Results

GPRS, EDGE	
Spectrum Plot of Measurement Value	
Channel: 189 / Frequency (MHz): 836.4MHz	
GPRS	EDGE
	

WCDMA Band 5	
Spectrum Plot of Measurement Value	
Channel: 4182 / Frequency (MHz): 836.4MHz	
WCDMA	HSDPA
	
HSUPA	
	

LTE Band 5	
Spectrum Plot of Measurement Value	
Channel: 20525 / Frequency (MHz): 836.5MHz	
QPSK	16QAM
	
64QAM	
	

LTE Band 26	
Spectrum Plot of Measurement Value	
Channel: 26915 / Frequency (MHz): 836.5MHz	
QPSK	16QAM
	
64QAM	
	

4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stability Measurement

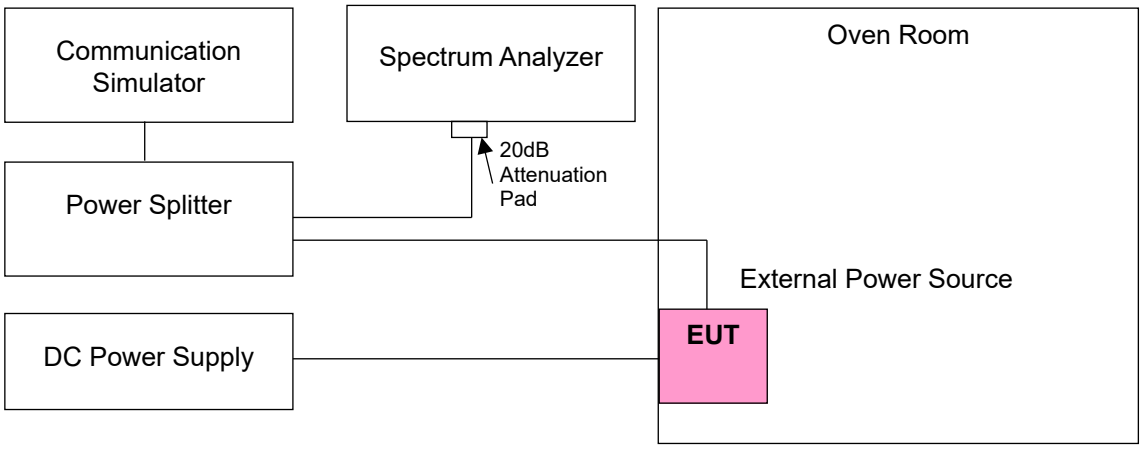
1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

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 Setup



4.3.4 Test Results

Frequency Error vs. Voltage

Voltage (Vdc)	EDGE			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
9.18	824.200004	0.0049	848.800004	0.0047
10.80	824.200003	0.0036	848.800003	0.0035
12.42	824.200002	0.0024	848.800004	0.0047

Note: The applicant defined the normal working voltage is from 9.18Vdc to 12.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	EDGE			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	824.200001	0.0012	848.800001	0.0012
-20	824.200002	0.0024	848.800003	0.0035
-10	824.200004	0.0049	848.800003	0.0035
0	824.200003	0.0036	848.800003	0.0035
10	824.200002	0.0024	848.800002	0.0024
20	824.199997	-0.0036	848.799996	-0.0047
30	824.199996	-0.0049	848.799998	-0.0024
40	824.199997	-0.0036	848.799997	-0.0035
50	824.199996	-0.0049	848.799998	-0.0024

Frequency Error vs. Voltage

Voltage (Vdc)	WCDMA Band 5			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
9.18	826.400004	0.0048	846.600002	0.0024
10.80	826.400002	0.0024	846.600002	0.0024
12.42	826.400003	0.0036	846.600002	0.0024

Note: The applicant defined the normal working voltage is from 9.18Vdc to 12.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	WCDMA Band 5			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	826.400004	0.0048	846.600003	0.0035
-20	826.400001	0.0012	846.600002	0.0024
-10	826.400002	0.0024	846.600004	0.0047
0	826.400001	0.0012	846.600001	0.0012
10	826.400001	0.0012	846.600002	0.0024
20	826.399996	-0.0048	846.599998	-0.0024
30	826.399998	-0.0024	846.599998	-0.0024
40	826.399998	-0.0024	846.599999	-0.0012
50	826.399998	-0.0024	846.599997	-0.0035

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 5			
	Channel Bandwidth 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
9.18	824.700004	0.0049	848.300002	0.0024
10.80	824.700004	0.0049	848.300003	0.0035
12.42	824.700003	0.0036	848.300004	0.0047

Note: The applicant defined the normal working voltage is from 9.18Vdc to 12.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 5			
	Channel Bandwidth 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	824.700004	0.0049	848.300003	0.0035
-20	824.700001	0.0012	848.300002	0.0024
-10	824.700004	0.0049	848.300002	0.0024
0	824.700001	0.0012	848.300004	0.0047
10	824.700001	0.0012	848.300002	0.0024
20	824.699998	-0.0024	848.299996	-0.0047
30	824.699999	-0.0012	848.299999	-0.0012
40	824.699996	-0.0049	848.299997	-0.0035
50	824.699997	-0.0036	848.299996	-0.0047

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 5			
	Channel Bandwidth 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
9.18	825.500003	0.0036	847.500004	0.0047
10.80	825.500004	0.0048	847.500004	0.0047
12.42	825.500003	0.0036	847.500002	0.0024

Note: The applicant defined the normal working voltage is from 9.18Vdc to 12.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 5			
	Channel Bandwidth 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	825.500004	0.0048	847.500002	0.0024
-20	825.500003	0.0036	847.500003	0.0035
-10	825.500003	0.0036	847.500002	0.0024
0	825.500001	0.0012	847.500002	0.0024
10	825.500003	0.0036	847.500004	0.0047
20	825.499997	-0.0036	847.499998	-0.0024
30	825.499997	-0.0036	847.499997	-0.0035
40	825.499997	-0.0036	847.499997	-0.0035
50	825.499999	-0.0012	847.499998	-0.0024

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 5			
	Channel Bandwidth 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
9.18	826.500001	0.0012	846.500003	0.0035
10.80	826.500001	0.0012	846.500001	0.0012
12.42	826.500003	0.0036	846.500002	0.0024

Note: The applicant defined the normal working voltage is from 9.18Vdc to 12.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 5			
	Channel Bandwidth 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	826.500001	0.0012	846.500002	0.0024
-20	826.500002	0.0024	846.500001	0.0012
-10	826.500001	0.0012	846.500002	0.0024
0	826.500004	0.0048	846.500001	0.0012
10	826.500002	0.0024	846.500002	0.0024
20	826.499997	-0.0036	846.499999	-0.0012
30	826.499998	-0.0024	846.499999	-0.0012
40	826.499996	-0.0048	846.499998	-0.0024
50	826.499998	-0.0024	846.499996	-0.0047

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 5			
	Channel Bandwidth 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
9.18	829.000002	0.0024	844.000003	0.0036
10.80	829.000003	0.0036	844.000004	0.0047
12.42	829.000004	0.0048	844.000001	0.0012

Note: The applicant defined the normal working voltage is from 9.18Vdc to 12.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 5			
	Channel Bandwidth 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	829.000002	0.0024	844.000002	0.0024
-20	829.000002	0.0024	844.000003	0.0036
-10	829.000003	0.0036	844.000001	0.0012
0	829.000002	0.0024	844.000002	0.0024
10	829.000002	0.0024	844.000002	0.0024
20	828.999997	-0.0036	843.999998	-0.0024
30	828.999996	-0.0048	843.999997	-0.0036
40	828.999997	-0.0036	843.999998	-0.0024
50	828.999998	-0.0024	843.999996	-0.0047

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 26			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
9.18	824.700002	0.0024	848.300000	0.0024
10.80	824.700002	0.0024	848.300000	0.0035
12.42	824.700001	0.0012	848.300000	0.0047

Note: The applicant defined the normal working voltage is from 9.18Vdc to 12.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 26			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	824.700003	0.0036	848.300000	0.0012
-20	824.700004	0.0049	848.300000	0.0012
-10	824.700002	0.0024	848.300000	0.0047
0	824.700002	0.0024	848.300000	0.0035
10	824.700003	0.0036	848.300000	0.0024
20	824.699999	-0.0012	848.300000	-0.0047
30	824.699996	-0.0049	848.300000	-0.0035
40	824.699997	-0.0036	848.300000	-0.0035
50	824.699999	-0.0012	848.300000	-0.0047

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 26			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
9.18	825.500002	0.0024	847.500000	0.0047
10.80	825.500004	0.0048	847.500000	0.0012
12.42	825.500004	0.0048	847.500000	0.0047

Note: The applicant defined the normal working voltage is from 9.18Vdc to 12.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 26			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	825.500002	0.0024	847.500000	0.0035
-20	825.500002	0.0024	847.500000	0.0024
-10	825.500002	0.0024	847.500000	0.0035
0	825.500002	0.0024	847.500000	0.0024
10	825.500002	0.0024	847.500000	0.0024
20	825.499996	-0.0048	847.500000	-0.0012
30	825.499998	-0.0024	847.500000	-0.0047
40	825.499998	-0.0024	847.500000	-0.0024
50	825.499999	-0.0012	847.500000	-0.0047

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 26			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
9.18	826.500003	0.0036	846.500002	0.0024
10.80	826.500003	0.0036	846.500002	0.0024
12.42	826.500001	0.0012	846.500003	0.0035

Note: The applicant defined the normal working voltage is from 9.18Vdc to 12.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 26			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	826.500003	0.0036	846.500003	0.0035
-20	826.500003	0.0036	846.500002	0.0024
-10	826.500002	0.0024	846.500001	0.0012
0	826.500004	0.0048	846.500004	0.0047
10	826.500003	0.0036	846.500002	0.0024
20	826.499999	-0.0012	846.499996	-0.0047
30	826.499998	-0.0024	846.499996	-0.0047
40	826.499998	-0.0024	846.499999	-0.0012
50	826.499997	-0.0036	846.499996	-0.0047

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 26			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
9.18	829.000002	0.0024	844.000002	0.0024
10.80	829.000001	0.0012	844.000001	0.0012
12.42	829.000002	0.0024	844.000001	0.0012

Note: The applicant defined the normal working voltage is from 9.18Vdc to 12.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 26			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	829.000004	0.0048	844.000004	0.0047
-20	829.000002	0.0024	844.000003	0.0036
-10	829.000002	0.0024	844.000002	0.0024
0	829.000004	0.0048	844.000002	0.0024
10	829.000001	0.0012	844.000003	0.0036
20	828.999997	-0.0036	843.999998	-0.0024
30	828.999998	-0.0024	843.999998	-0.0024
40	828.999997	-0.0036	843.999996	-0.0047
50	828.999998	-0.0024	843.999998	-0.0024

Frequency Error vs. Voltage

Voltage (Vdc)	LTE Band 26			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
9.18	831.500002	0.0024	841.500002	0.0024
10.80	831.500002	0.0024	841.500003	0.0036
12.42	831.500003	0.0036	841.500004	0.0048

Note: The applicant defined the normal working voltage is from 9.18Vdc to 12.42Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 26			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	831.500003	0.0036	841.500003	0.0036
-20	831.500002	0.0024	841.500004	0.0048
-10	831.500004	0.0048	841.500003	0.0036
0	831.500002	0.0024	841.500003	0.0036
10	831.500003	0.0036	841.500003	0.0036
20	831.499997	-0.0036	841.499998	-0.0024
30	831.499999	-0.0012	841.499998	-0.0024
40	831.499999	-0.0012	841.499997	-0.0036
50	831.499996	-0.0048	841.499997	-0.0036

4.4 Occupied Bandwidth Measurement

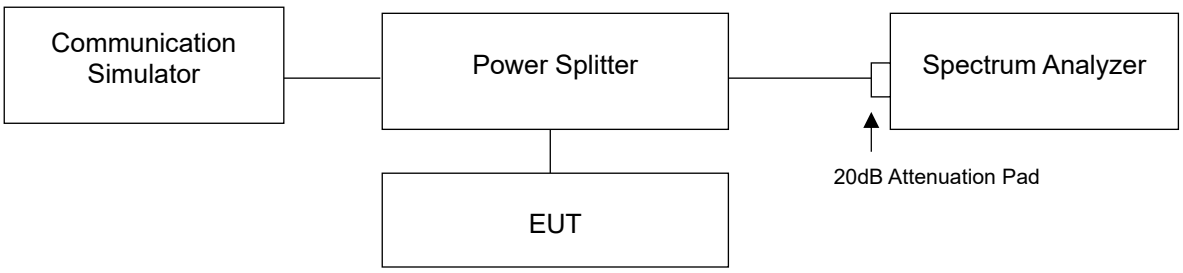
4.4.1 Test Procedure

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

a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.
b) The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set ≥ 3 × RBW.
c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
d) The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target "−X dB" requirement, i.e., if the requirement calls for measuring the −26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.
e) Set spectrum analyzer detection mode to peak, and the trace mode to max hold.
f) Determine the following reference values: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).
g) Determine the "−X dB amplitude" as equal to (Reference Value − X). Alternatively, this calculation can be performed on the spectrum analyzer using the delta-marker measurement function.
h) Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the "−X dB amplitude" determined in step f). If a marker is below this "−X dB amplitude" value it should be as close as possible to this value. The OBW is the positive frequency difference between the two markers.
i) The OBW shall be reported by providing plot(s) of the measuring instrument display, to include markers depicting the relevant frequency and amplitude information (e.g., marker table). The frequency and amplitude axis and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

For the occupied bandwidth measurement method, please refer to section 5.4.4 of ANSI C63.26.

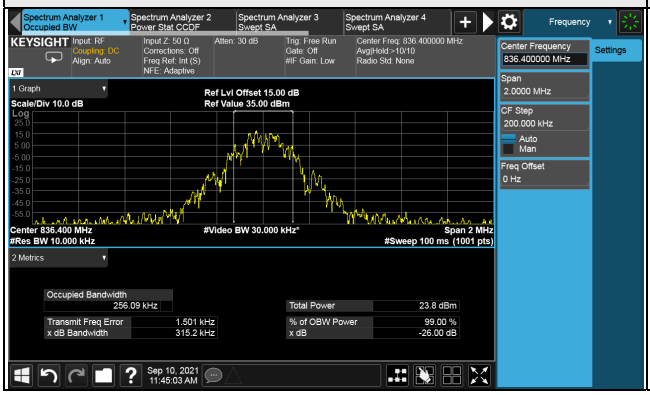
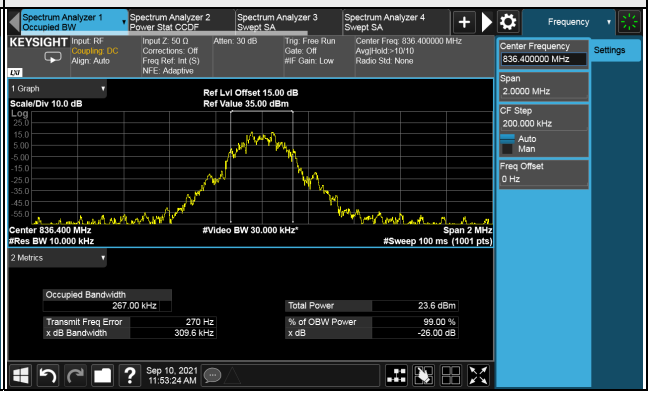
4.4.2 Test Setup



4.4.3 Test Result

Occupied Bandwidth

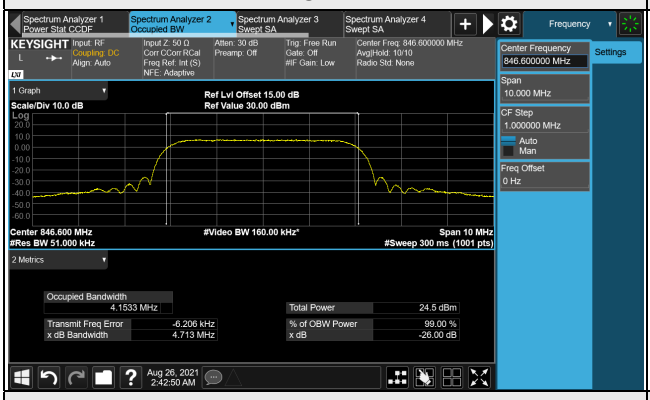
Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	
		GPRS	EDGE
128	824.2	256.09	259.94
189	836.4	256.09	267.00
251	848.8	255.77	247.74

Spectrum Plot of Worst Value	
GPRS	EDGE
	

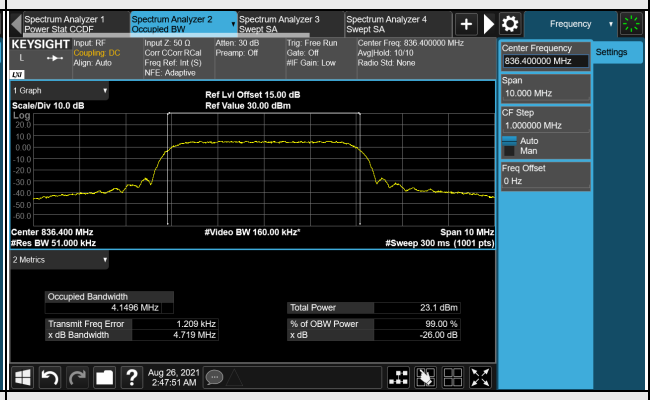
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		WCDMA	HSDPA	HSUPA
4132	826.4	4.14	4.15	4.14
4182	836.4	4.15	4.15	4.15
4233	846.6	4.15	4.15	4.15

Spectrum Plot of Worst Value

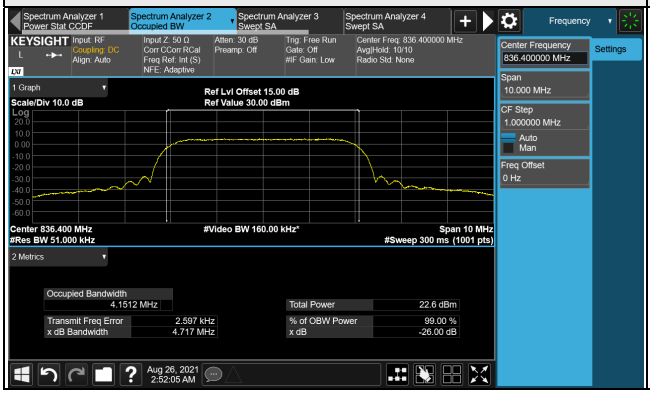
WCDMA



HSDPA



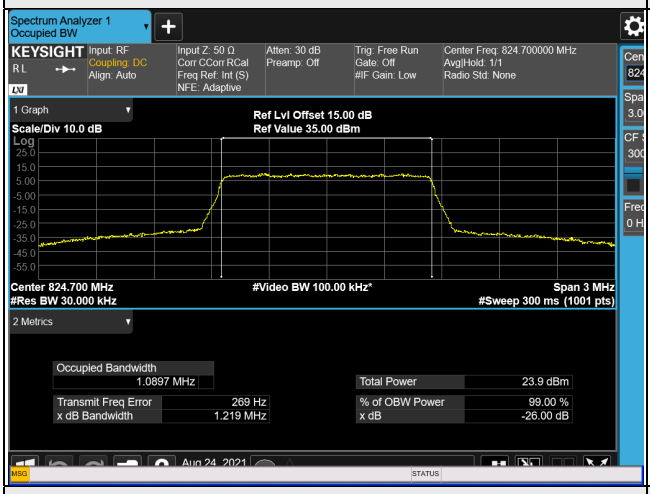
HSUPA



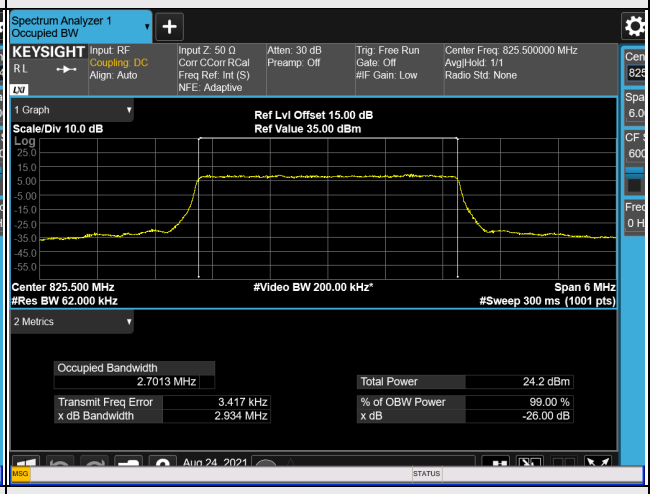
LTE Band 5, Channel Bandwidth 1.4MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
20407	824.7	1.09	1.09	1.09
20525	836.5	1.09	1.09	1.09
20643	848.3	1.09	1.09	1.09
LTE Band 5, Channel Bandwidth 3MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
20415	825.5	2.70	2.70	2.70
20525	836.5	2.70	2.70	2.70
20635	847.5	2.70	2.70	2.70
LTE Band 5, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
20425	826.5	4.49	4.49	4.50
20525	836.5	4.50	4.49	4.50
20625	846.5	4.49	4.49	4.50
LTE Band 5, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
20450	829.0	8.97	8.97	8.97
20525	836.5	8.98	8.98	8.98
20600	844.0	8.96	8.97	8.97

Spectrum Plot of Worst Value

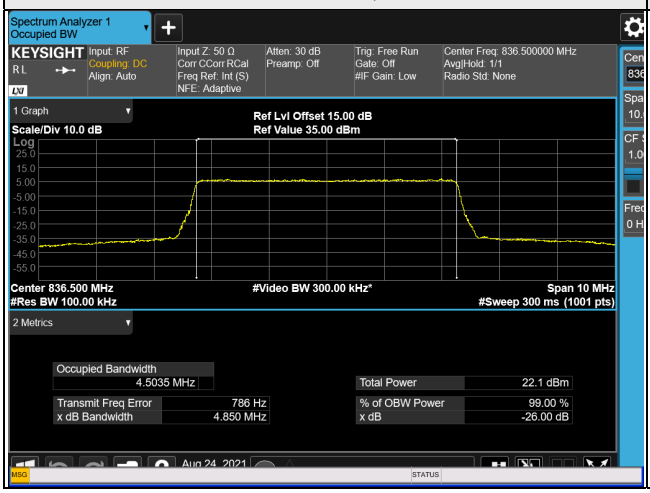
1.4MHz / 16QAM



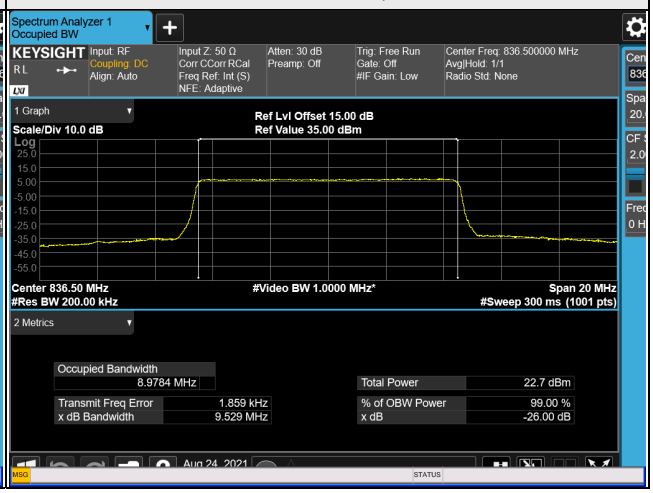
3MHz / QPSK



5MHz / 64QAM



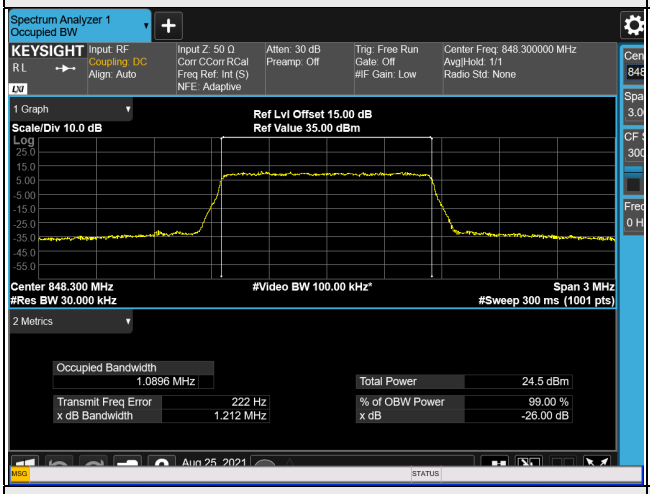
10MHz / 16QAM



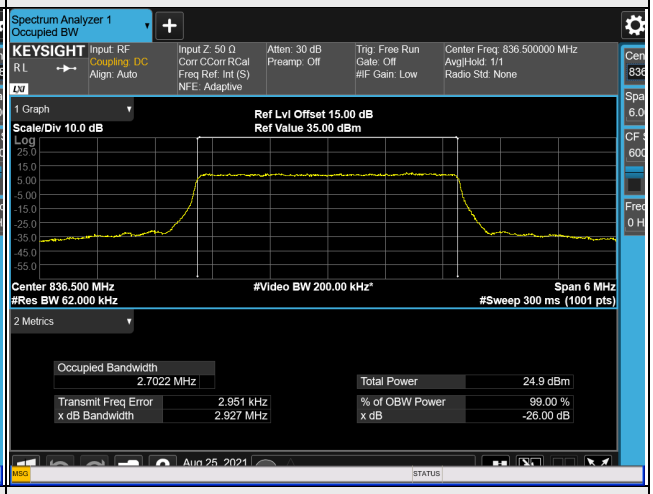
LTE Band 26, Channel Bandwidth 1.4MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
26797	824.7	1.09	1.09	1.09
26915	836.5	1.09	1.09	1.09
27033	848.3	1.09	1.09	1.09
LTE Band 26, Channel Bandwidth 3MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
26805	825.5	2.70	2.70	2.70
26915	836.5	2.70	2.70	2.70
27025	847.5	2.70	2.70	2.70
LTE Band 26, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
26815	826.5	4.49	4.49	4.50
26915	836.5	4.49	4.49	4.50
27015	846.5	4.49	4.49	4.50
LTE Band 26, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
26840	829.0	8.97	8.97	8.97
26915	836.5	8.98	8.98	8.98
26990	844.0	8.97	8.97	8.98
LTE Band 26, Channel Bandwidth 15MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
26865	831.5	13.46	13.45	13.45
26915	836.5	13.46	13.44	13.44
26965	841.5	13.44	13.43	13.42

Spectrum Plot of Worst Value

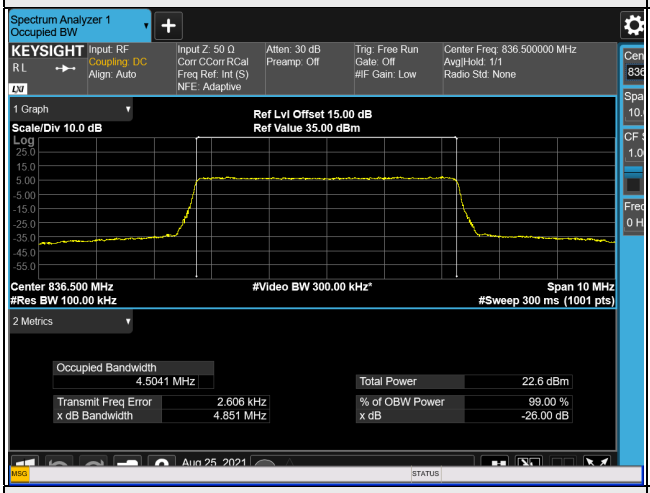
1.4MHz / 16QAM



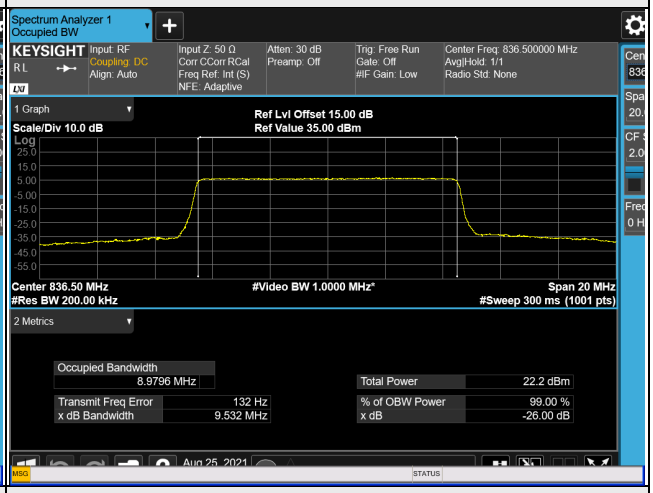
3MHz / QPSK



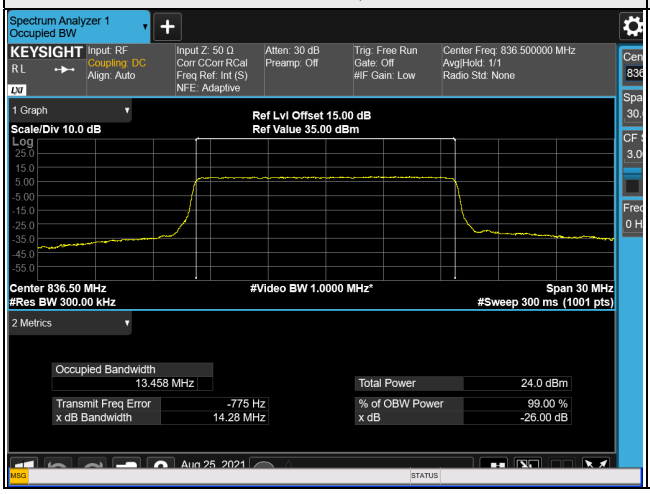
5MHz / 64QAM



10MHz / 64QAM

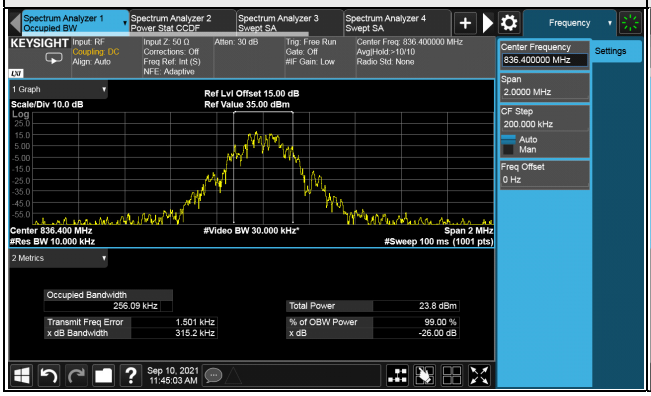
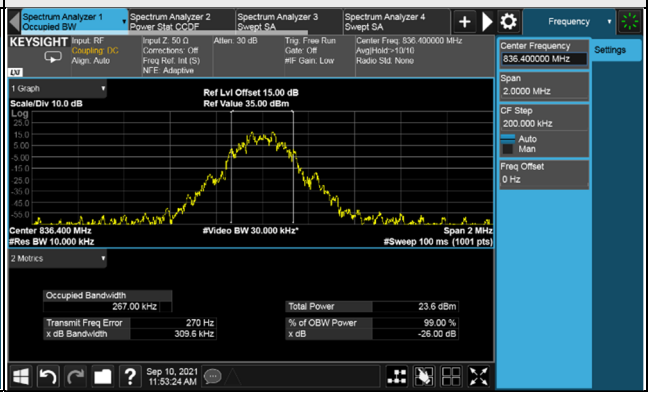


15MHz / QPSK



26dB Bandwidth

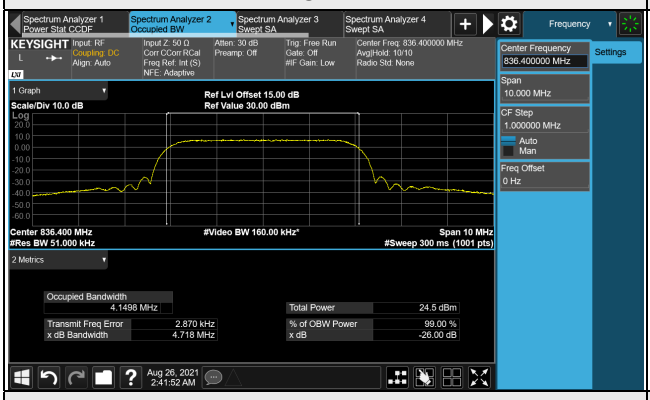
Channel	Frequency (MHz)	26dB Bandwidth (kHz)	
		GPRS	EDGE
128	824.2	306.50	290.90
189	836.4	315.20	309.60
251	848.8	305.90	308.40

Spectrum Plot of Worst Value	
GPRS	EDGE
	

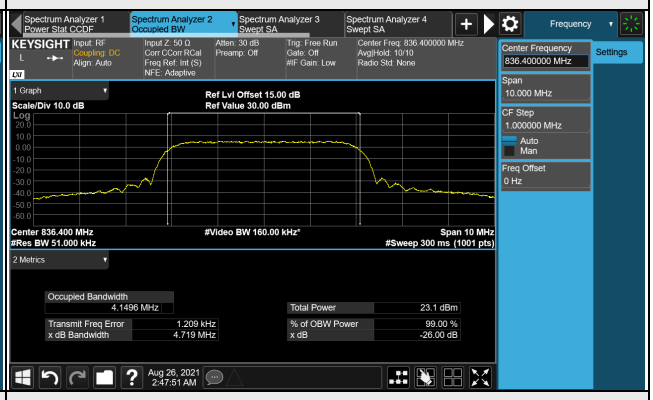
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		
		WCDMA	HSDPA	HSUPA
4132	826.4	4.71	4.71	4.71
4182	836.4	4.72	4.72	4.72
4233	846.6	4.71	4.72	4.72

Spectrum Plot of Worst Value

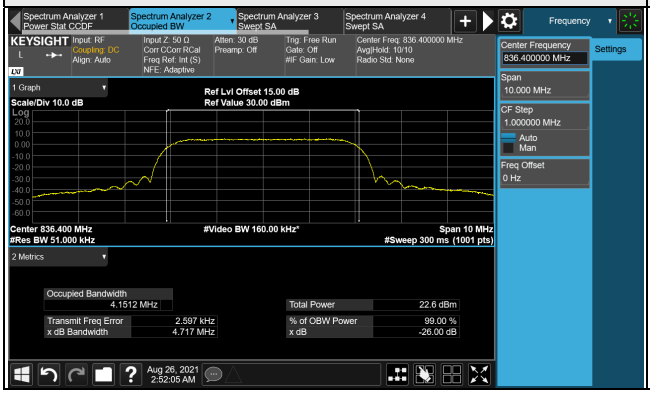
WCDMA



HSDPA



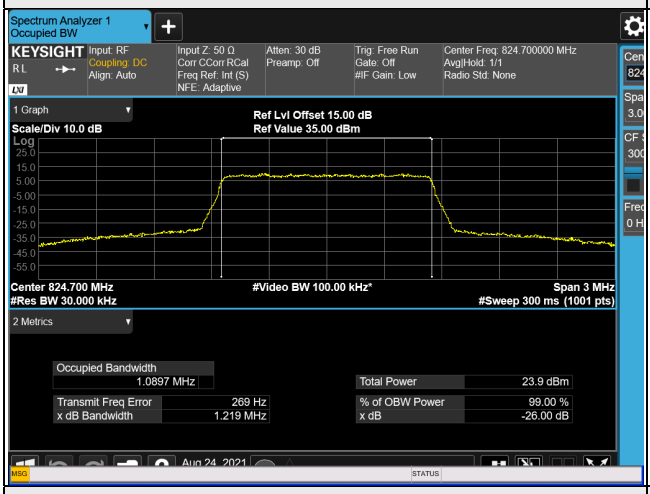
HSUPA



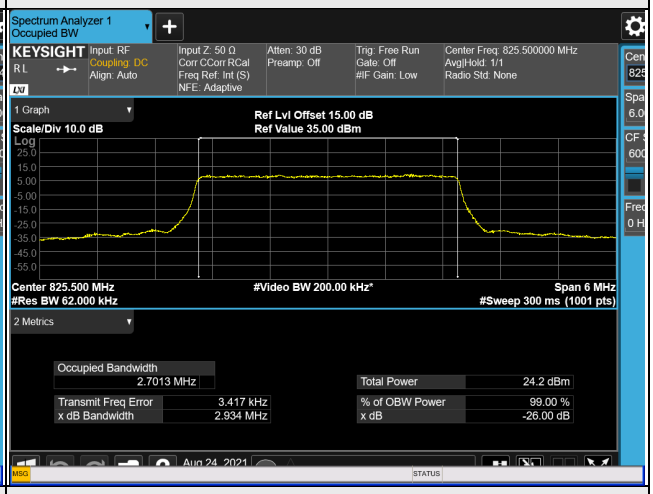
LTE Band 5, Channel Bandwidth 1.4MHz				
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM
20407	824.7	1.22	1.22	1.21
20525	836.5	1.22	1.22	1.21
20643	848.3	1.22	1.21	1.22
LTE Band 5, Channel Bandwidth 3MHz				
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM
20415	825.5	2.93	2.93	2.90
20525	836.5	2.92	2.93	2.90
20635	847.5	2.93	2.93	2.91
LTE Band 5, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM
20425	826.5	4.82	4.80	4.82
20525	836.5	4.83	4.81	4.85
20625	846.5	4.82	4.81	4.83
LTE Band 5, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM
20450	829.0	9.52	9.52	9.53
20525	836.5	9.53	9.53	9.53
20600	844.0	9.52	9.52	9.52

Spectrum Plot of Worst Value

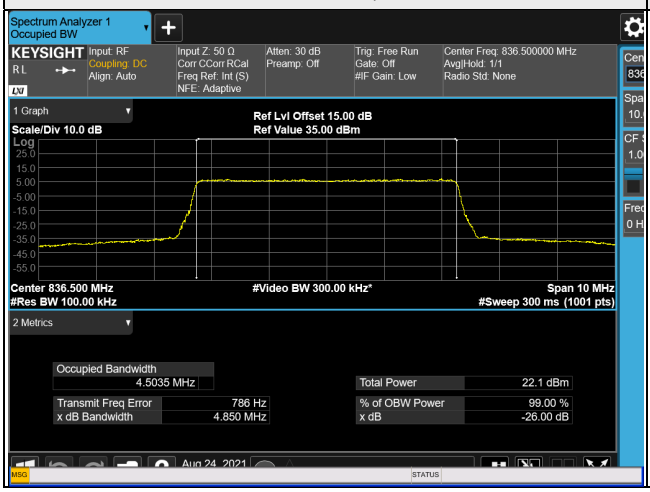
1.4MHz / 16QAM



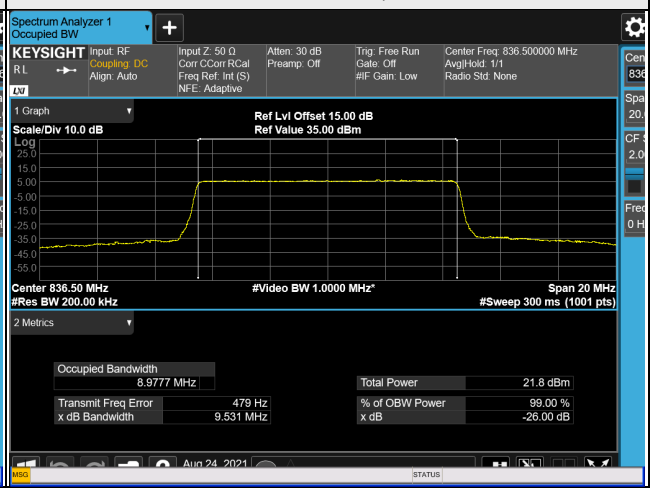
3MHz / QPSK



5MHz / 64QAM



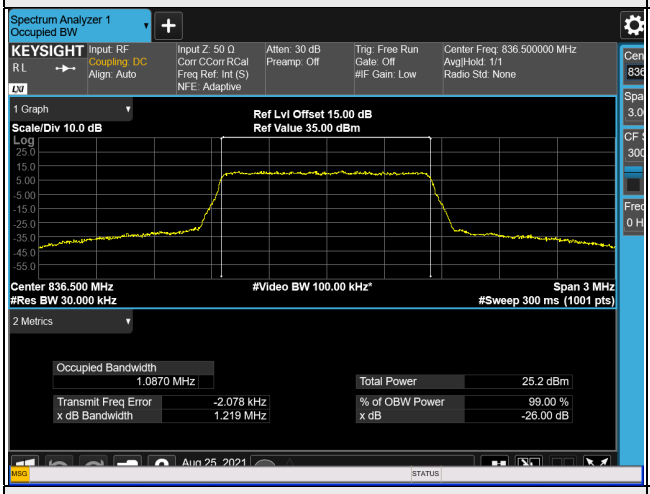
10MHz / 64QAM



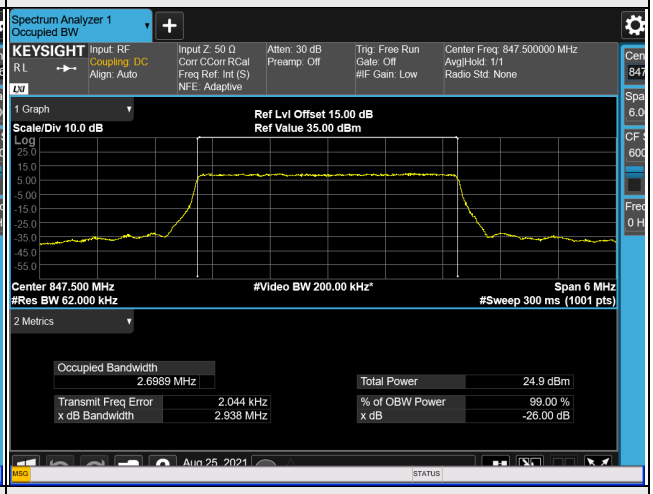
LTE Band 26, Channel Bandwidth 1.4MHz				
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM
26797	824.7	1.22	1.22	1.21
26915	836.5	1.22	1.21	1.21
27033	848.3	1.22	1.21	1.21
LTE Band 26, Channel Bandwidth 3MHz				
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM
26805	825.5	2.93	2.92	2.91
26915	836.5	2.93	2.93	2.91
27025	847.5	2.94	2.92	2.90
LTE Band 26, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM
26815	826.5	4.82	4.80	4.84
26915	836.5	4.82	4.81	4.85
27015	846.5	4.84	4.81	4.84
LTE Band 26, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM
26840	829.0	9.53	9.51	9.53
26915	836.5	9.53	9.52	9.53
26990	844.0	9.53	9.52	9.53
LTE Band 26, Channel Bandwidth 15MHz				
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM
26865	831.5	14.28	14.25	14.24
26915	836.5	14.28	14.25	14.24
26965	841.5	14.25	14.23	14.22

Spectrum Plot of Worst Value

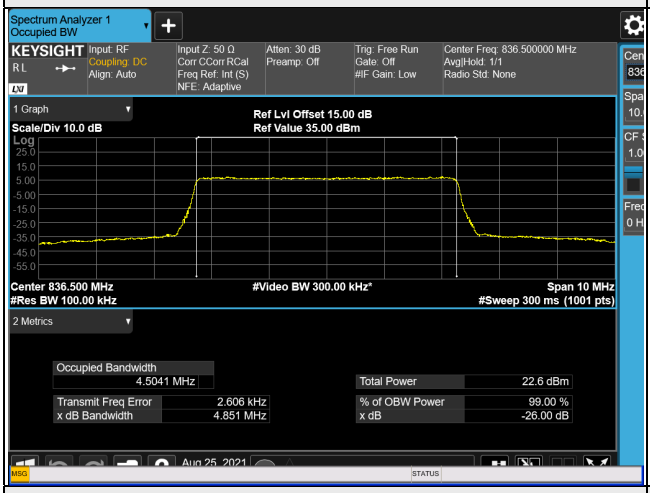
1.4MHz / QPSK



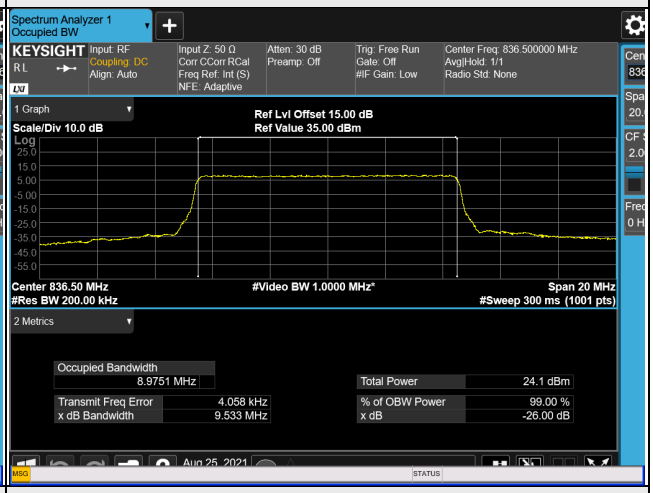
3MHz / QPSK



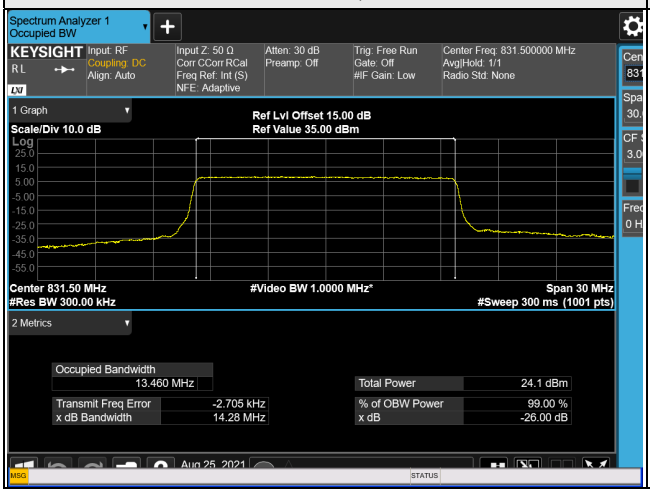
5MHz / 64QAM



10MHz / QPSK



15MHz / QPSK

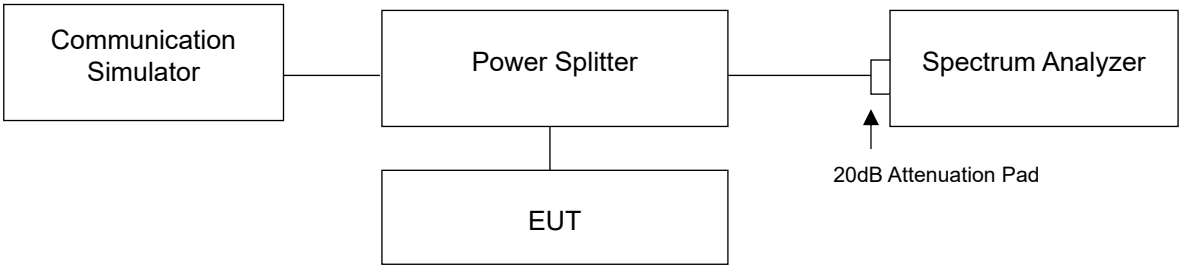


4.5 Band Edge Measurement

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.

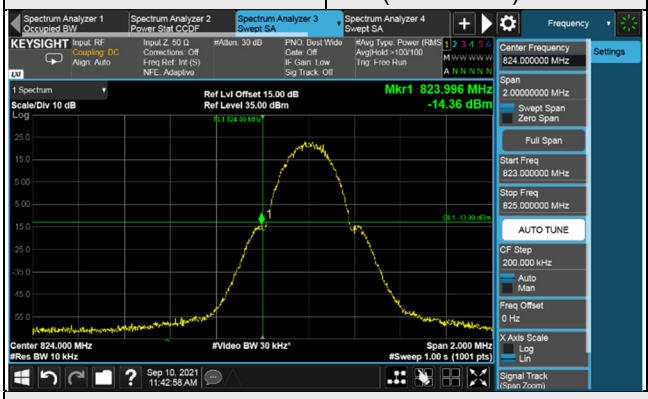
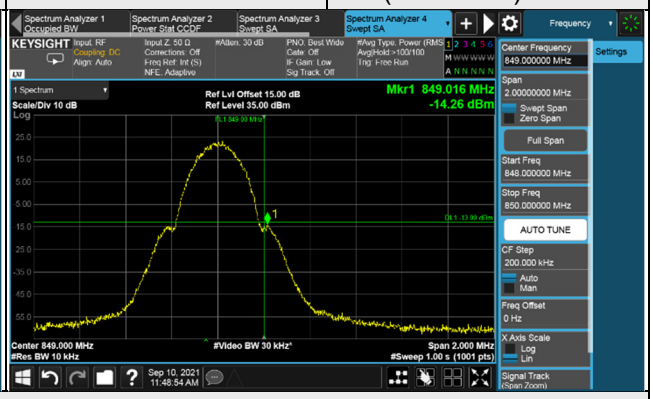
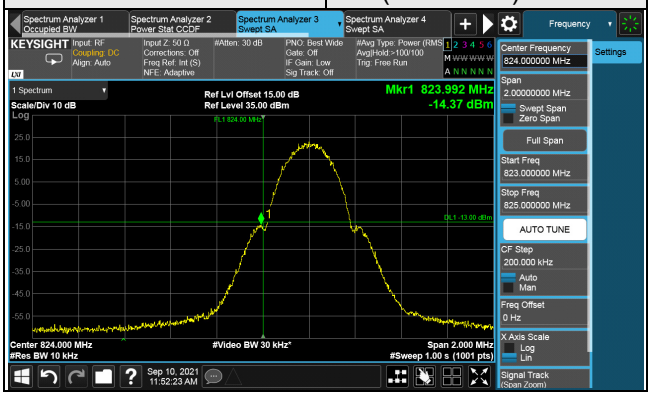
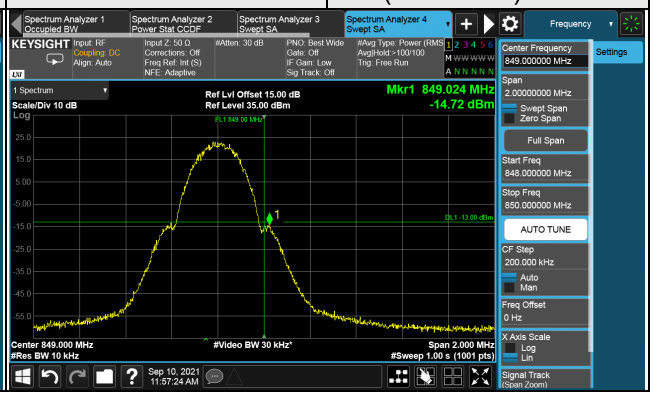
4.5.2 Test Setup



4.5.3 Test Procedures

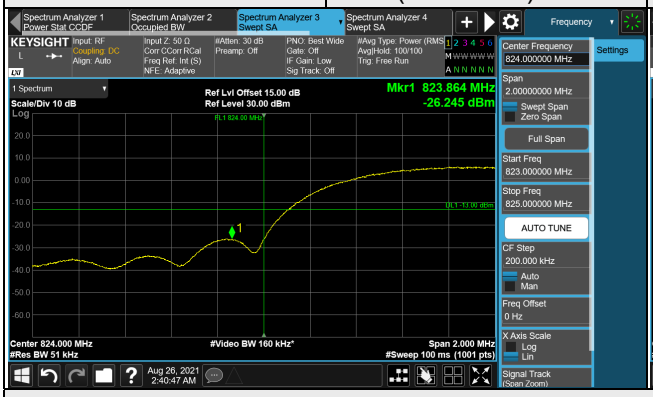
a. All measurements were done at low and high operational frequency range.
b. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 10kHz and VB of the spectrum is 30kHz (GPRS / EDGE).
c. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 51kHz and VB of the spectrum is 160kHz (WCDMA / HSDPA / HSUPA).
d. 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).
e. 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).
f. 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).
g. 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).
h. 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).
i. Record the max trace plot into the test report.

4.5.4 Test Results

GPRS			
Channel	128 (824.2MHz)	Channel	251 (848.8MHz)
			
EDGE			
Channel	128 (824.2MHz)	Channel	251 (848.8MHz)
			

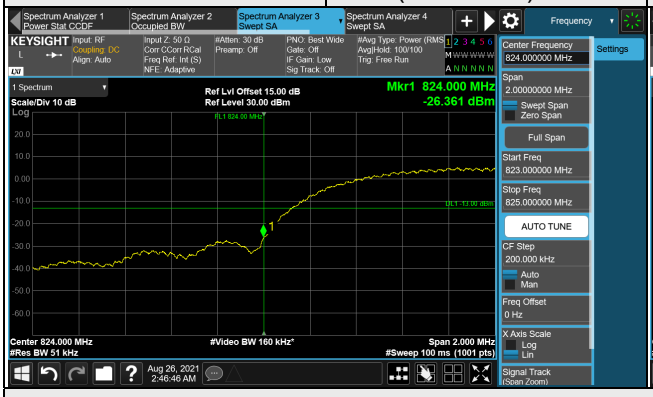
WCDMA

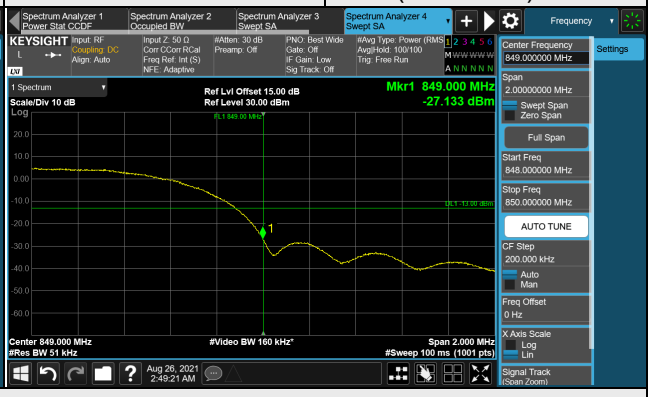
Channel	4132 (826.4MHz)	Channel	4233 (846.6MHz)



HSDPA

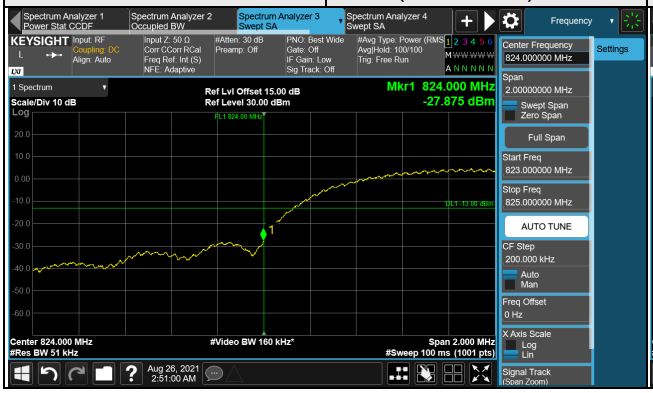
Channel	4132 (826.4MHz)	Channel	4233 (846.6MHz)

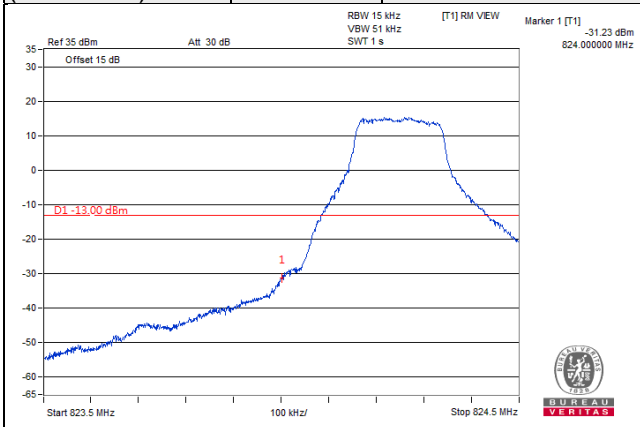
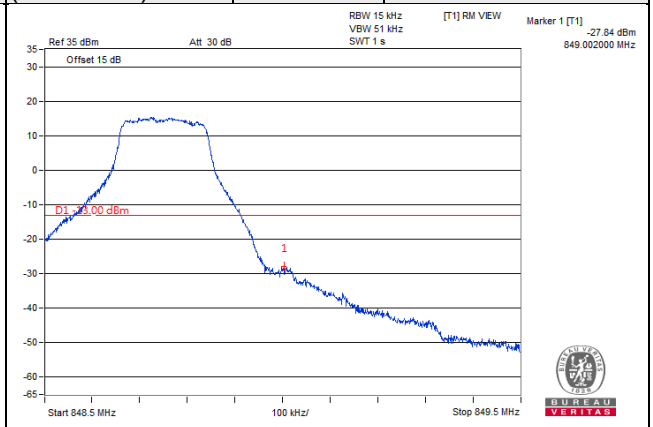
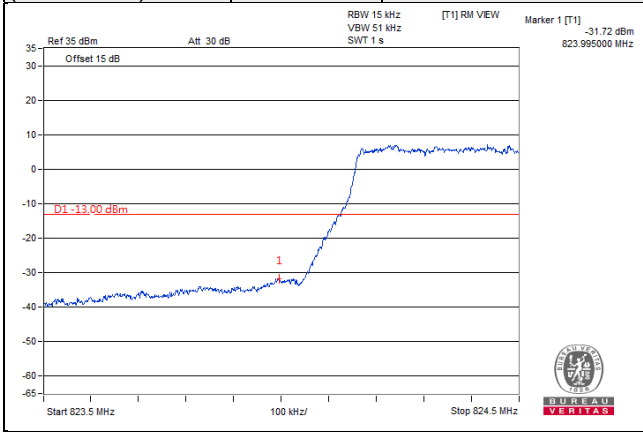
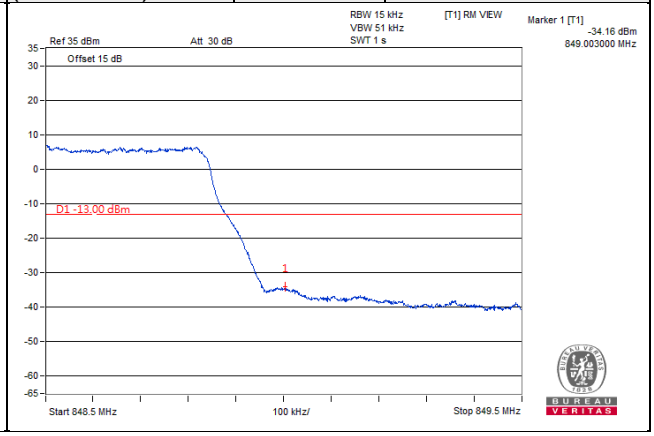


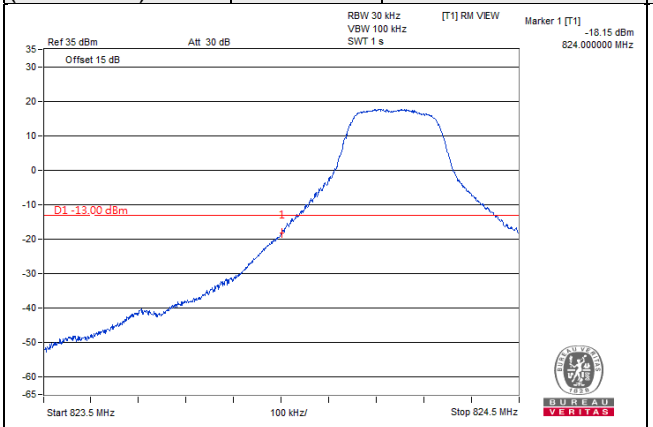
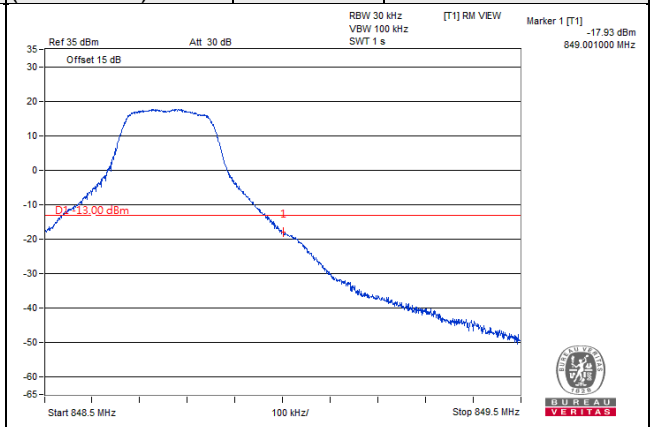
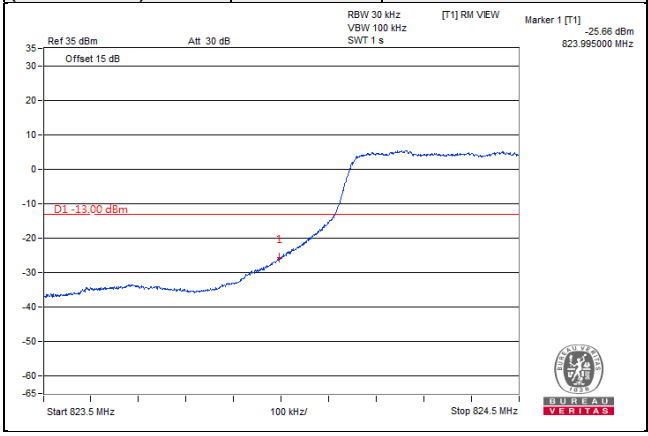
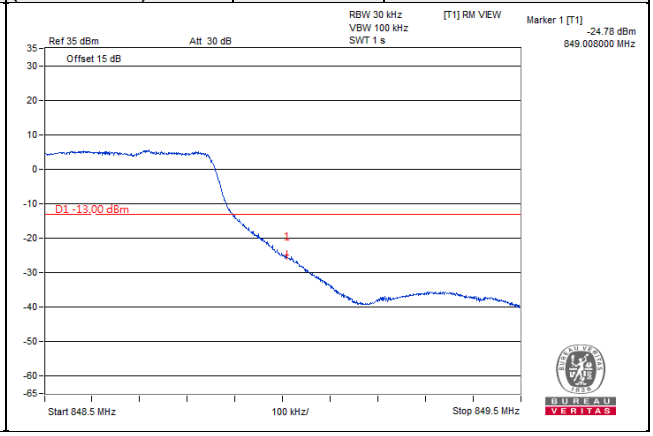


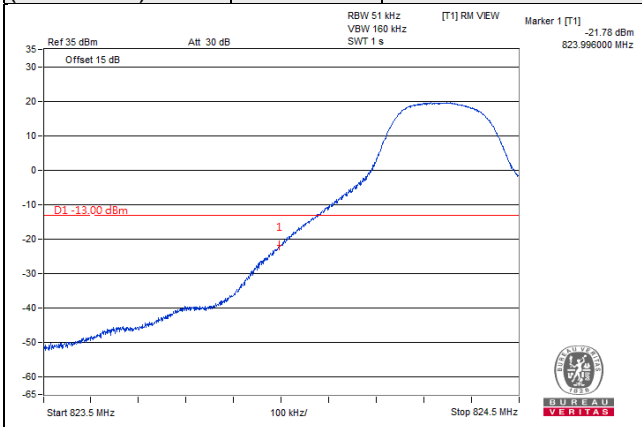
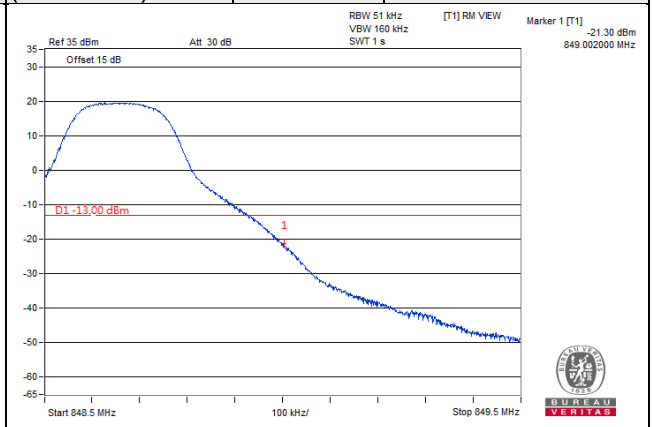
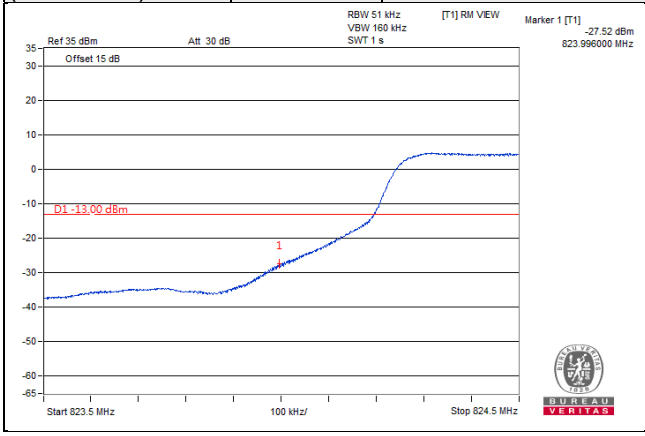
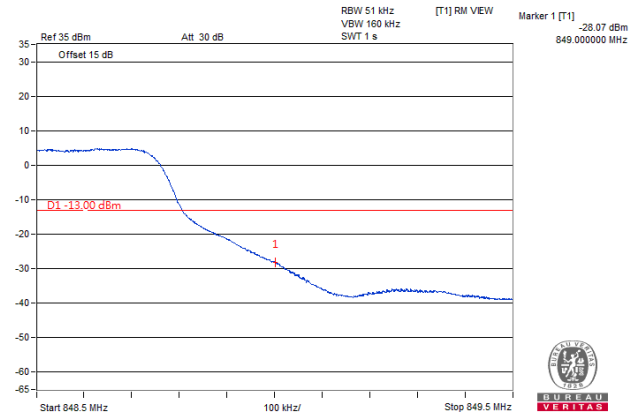
HSUPA

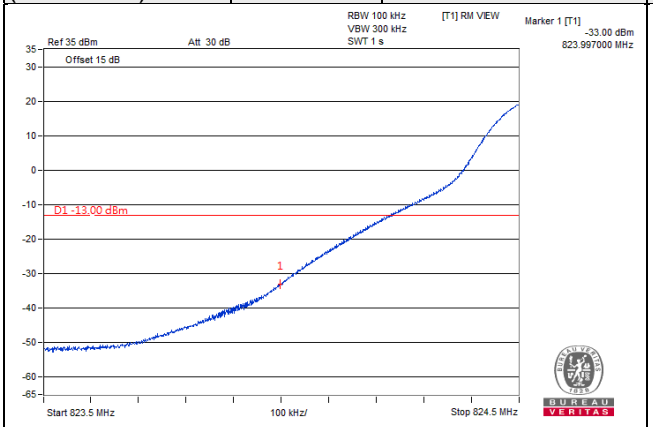
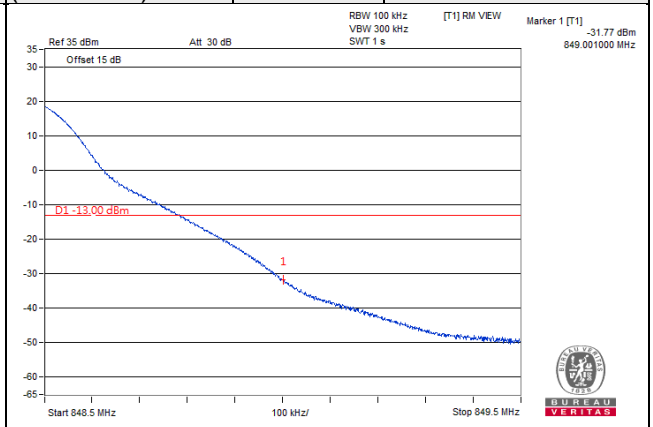
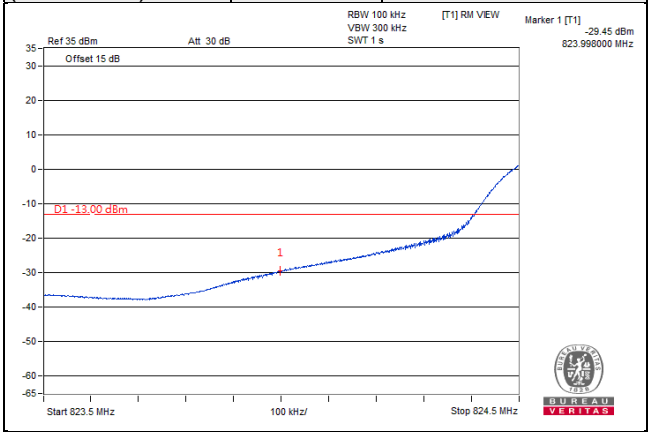
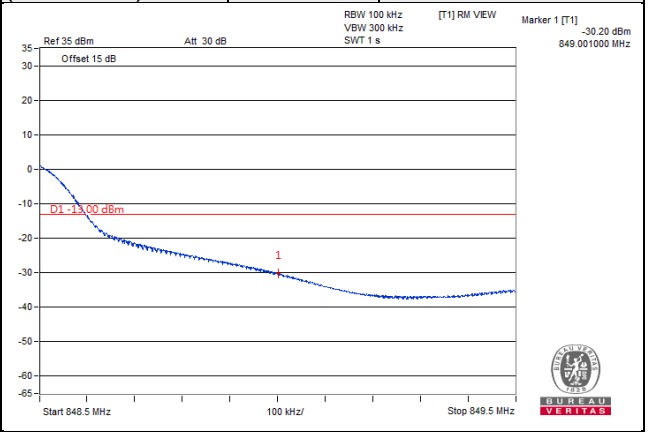
Channel	4132 (826.4MHz)	Channel	4233 (846.6MHz)

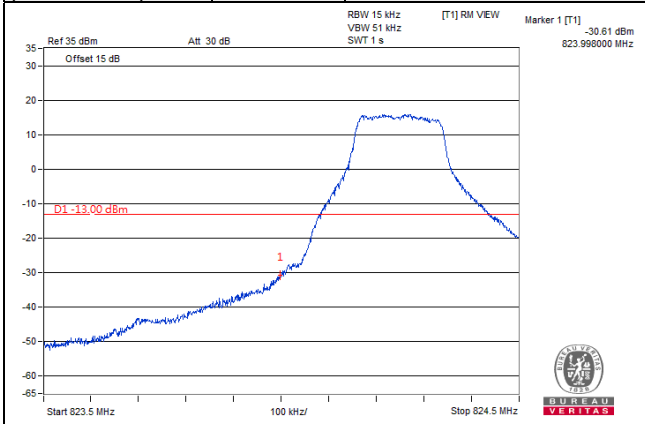
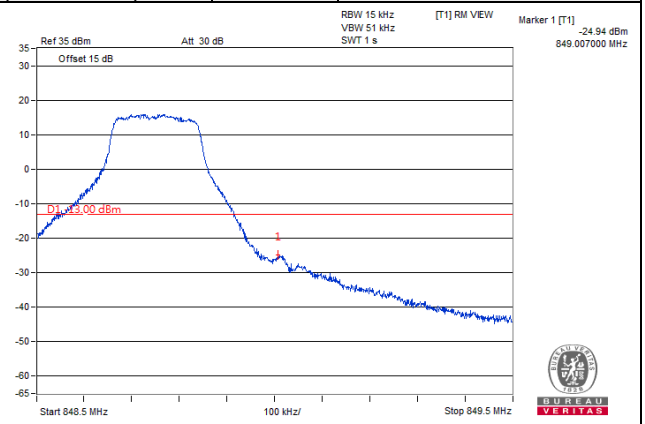
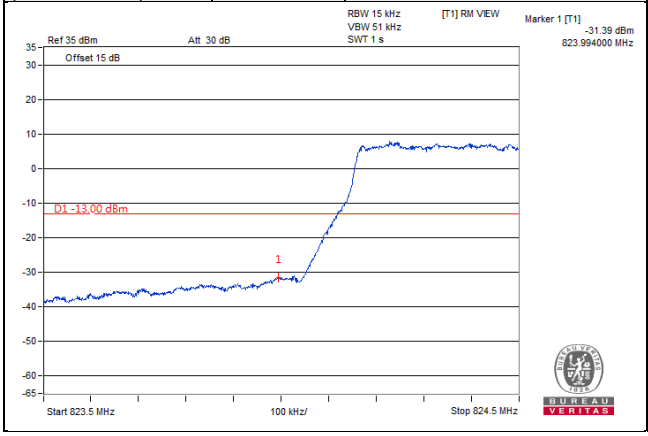
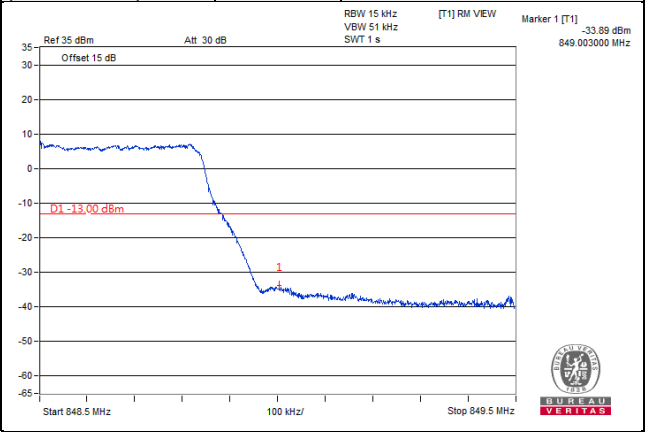


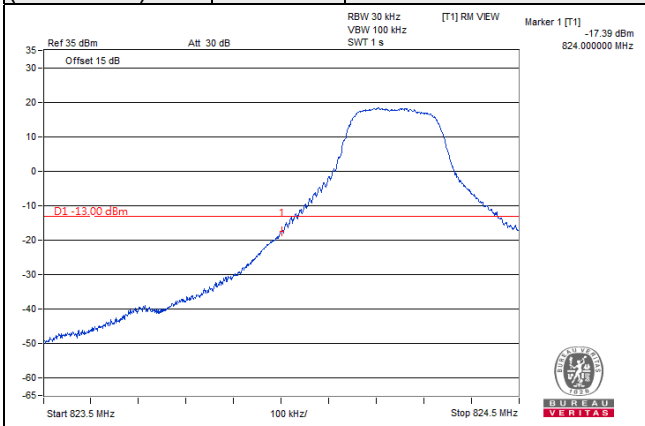
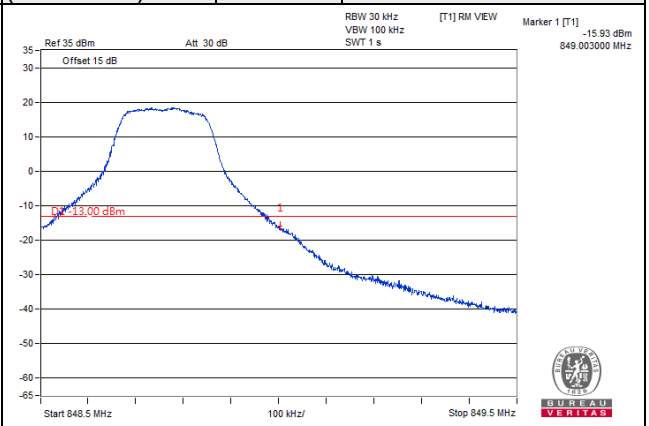
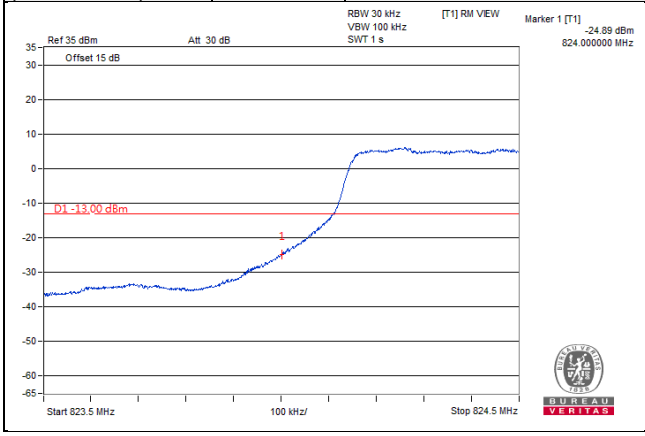
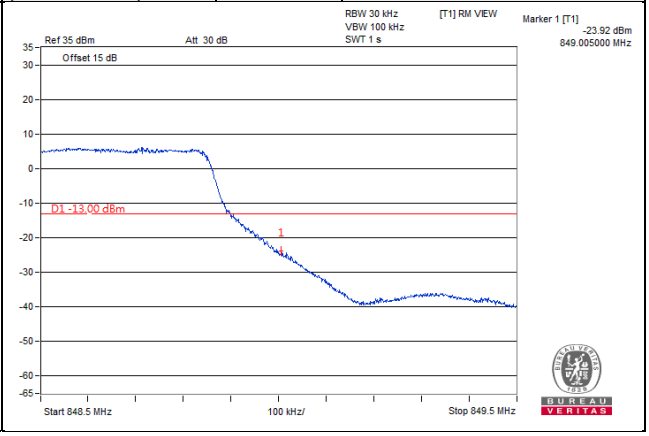
LTE Band 5, Channel Bandwidth 1.4MHz					
Channel 20407 (824.7MHz)	QPSK	1 RB / 0 RB Offset	Channel 20643 (848.3MHz)	QPSK	1 RB / 5 RB Offset
					
Channel 20407 (824.7MHz)	QPSK	6 RB / 0 RB Offset	Channel 20643 (848.3MHz)	QPSK	6 RB / 0 RB Offset
					

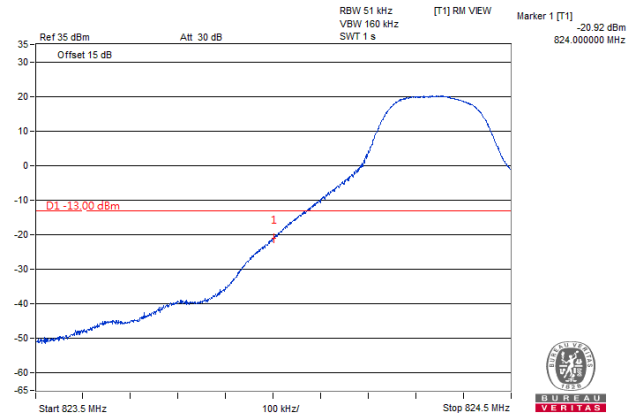
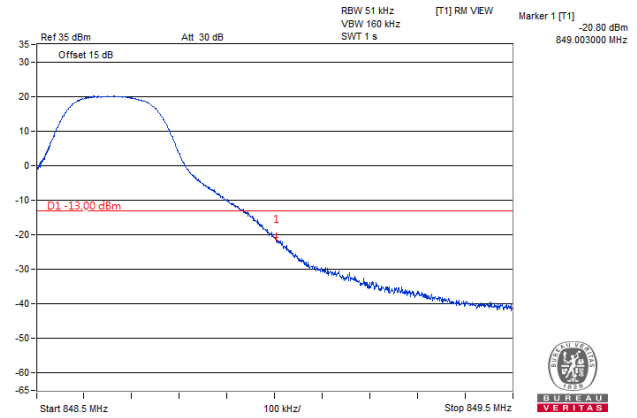
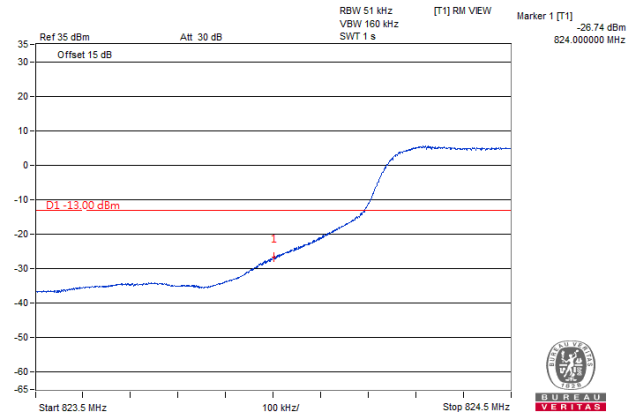
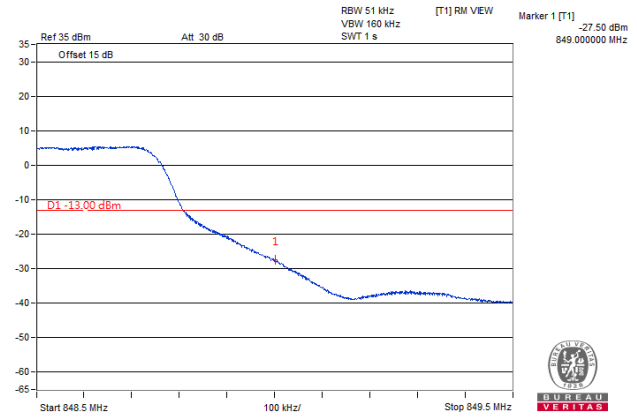
LTE Band 5, Channel Bandwidth 3MHz					
Channel 20415 (825.5MHz)	QPSK	1 RB / 0 RB Offset	Channel 20635 (847.5MHz)	QPSK	1 RB / 14 RB Offset
					
Channel 20415 (825.5MHz)	QPSK	15 RB / 0 RB Offset	Channel 20635 (847.5MHz)	QPSK	15 RB / 0 RB Offset
					

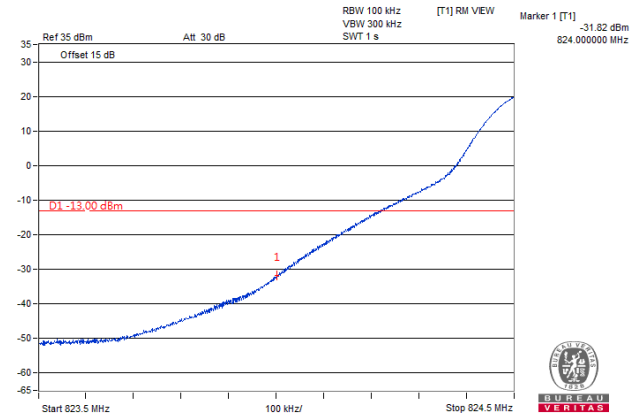
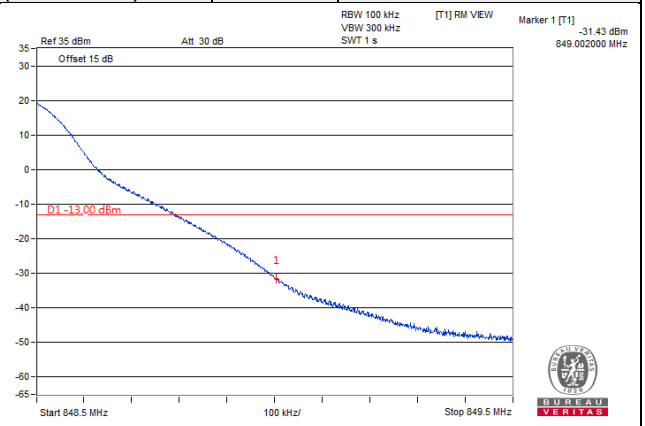
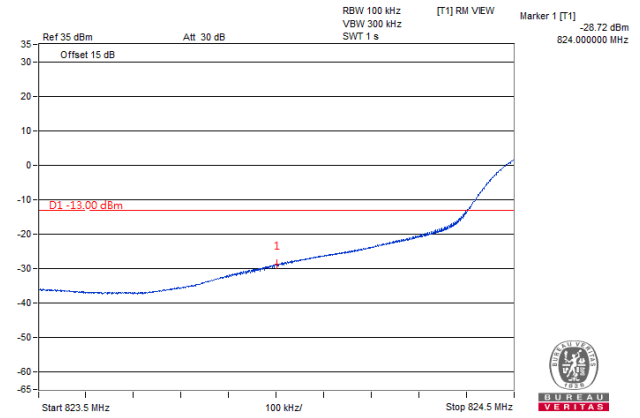
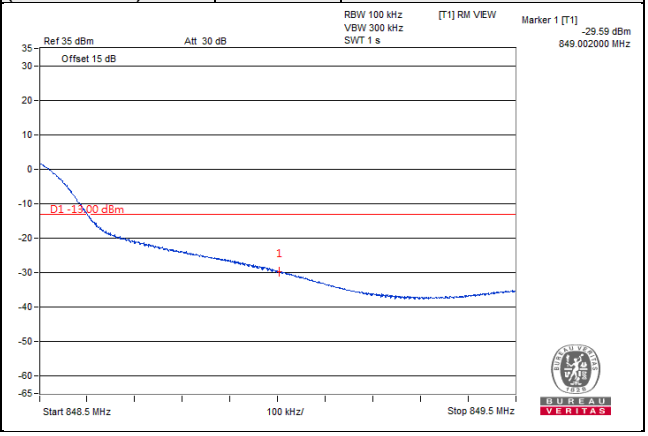
LTE Band 5, Channel Bandwidth 5MHz					
Channel 20425 (826.5MHz)	QPSK	1 RB / 0 RB Offset	Channel 20625 (846.5MHz)	QPSK	1 RB / 24 RB Offset
					
Channel 20425 (826.5MHz)	QPSK	25 RB / 0 RB Offset	Channel 20625 (846.5MHz)	QPSK	25 RB / 0 RB Offset
					

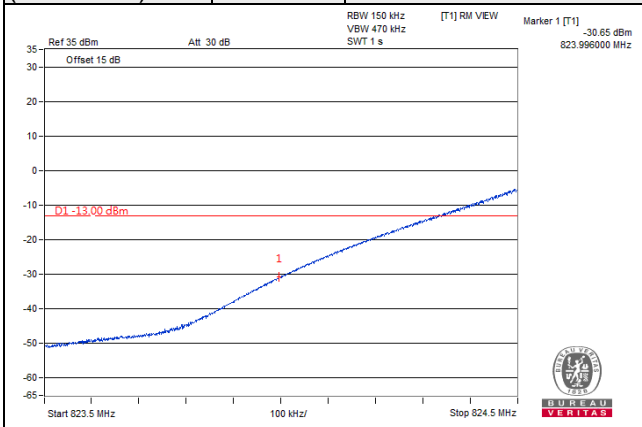
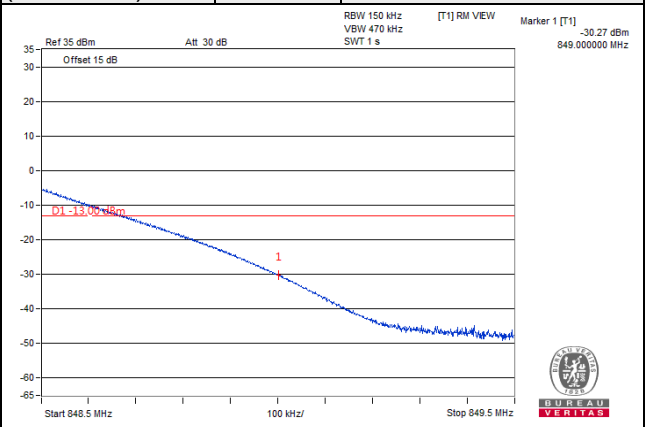
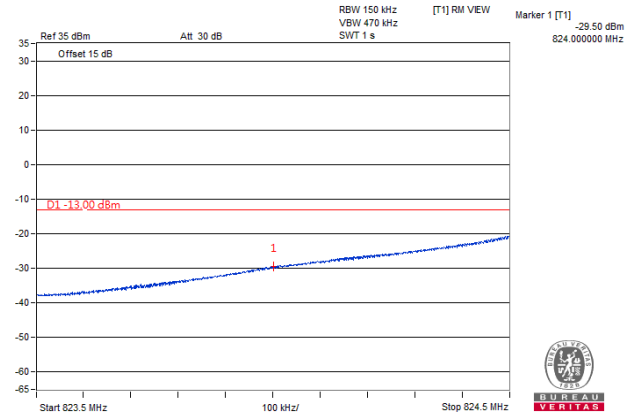
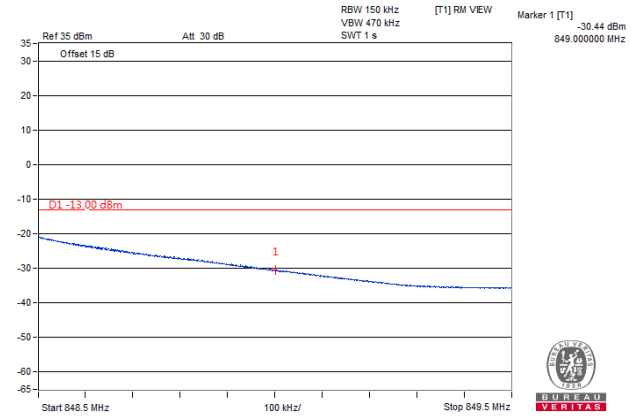
LTE Band 5, Channel Bandwidth 10MHz					
Channel 20450 (829.0MHz)	QPSK	1 RB / 0 RB Offset	Channel 20600 (844.0MHz)	QPSK	1 RB / 49 RB Offset
					
Channel 20450 (829.0MHz)	QPSK	50 RB / 0 RB Offset	Channel 20600 (844.0MHz)	QPSK	50 RB / 0 RB Offset
					

LTE Band 26, Channel Bandwidth 1.4MHz					
Channel 26797 (824.7MHz)	QPSK	1 RB / 0 RB Offset	Channel 27033 (848.3MHz)	QPSK	1 RB / 5 RB Offset
					
Channel 26797 (824.7MHz)	QPSK	6 RB / 0 RB Offset	Channel 27033 (848.3MHz)	QPSK	6 RB / 0 RB Offset
					

LTE Band 26, Channel Bandwidth 3MHz					
Channel 26805 (825.5MHz)	QPSK	1 RB / 0 RB Offset	Channel 27025 (847.5MHz)	QPSK	1 RB / 14 RB Offset
					
Channel 26805 (825.5MHz)	QPSK	15 RB / 0 RB Offset	Channel 27025 (847.5MHz)	QPSK	15 RB / 0 RB Offset
					

LTE Band 26, Channel Bandwidth 5MHz					
Channel 26815 (826.5MHz)	QPSK	1 RB / 0 RB Offset	Channel 27015 (846.5MHz)	QPSK	1 RB / 24 RB Offset
					
Channel 26815 (826.5MHz)	QPSK	25 RB / 0 RB Offset	Channel 27015 (846.5MHz)	QPSK	25 RB / 0 RB Offset
					

LTE Band 26, Channel Bandwidth 10MHz					
Channel 26840 (829.0MHz)	QPSK	1 RB / 0 RB Offset	Channel 26990 (844.0MHz)	QPSK	1 RB / 49 RB Offset
					
Channel 26840 (829.0MHz)	QPSK	50 RB / 0 RB Offset	Channel 26990 (844.0MHz)	QPSK	50 RB / 0 RB Offset
					

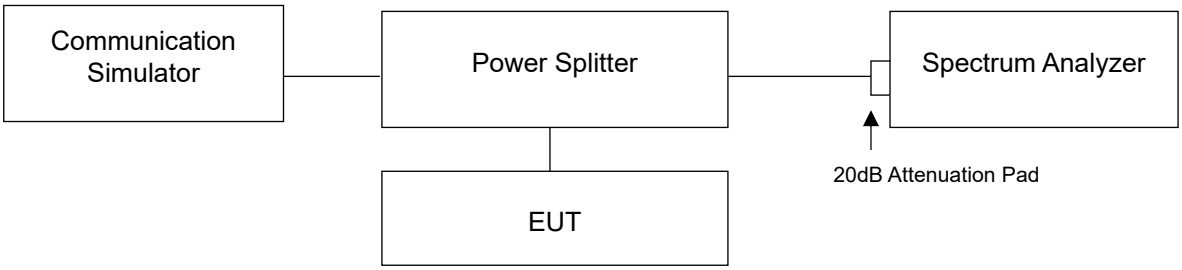
LTE Band 26, Channel Bandwidth 15MHz					
Channel 26865 (831.5MHz)	QPSK	1 RB / 0 RB Offset	Channel 26965 (841.5MHz)	QPSK	1 RB / 74 RB Offset
					
Channel 26865 (831.5MHz)	QPSK	75 RB / 0 RB Offset	Channel 26965 (841.5MHz)	QPSK	75 RB / 0 RB Offset
					

4.6 Peak to Average Ratio

4.6.1 Limits of Peak to Average Ratio Measurement

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

4.6.2 Test Setup

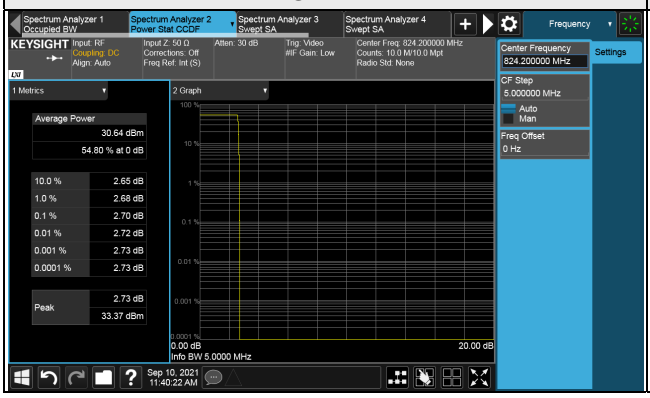
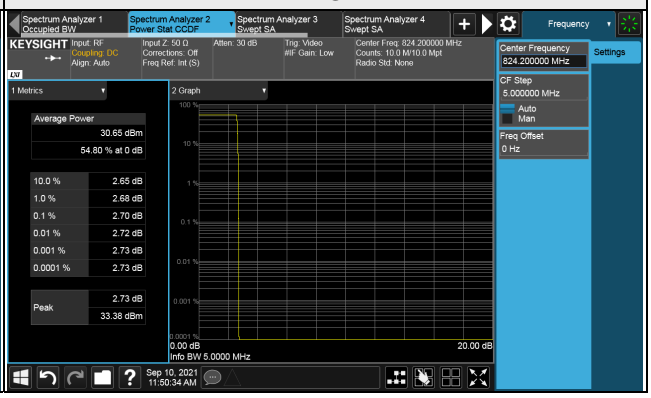


4.6.3 Test Procedures

a. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
b. Set the number of counts to a value that stabilizes the measured CCDF curve;
c. Record the maximum PAPR level associated with a probability of 0.1%.

4.6.4 Test Results

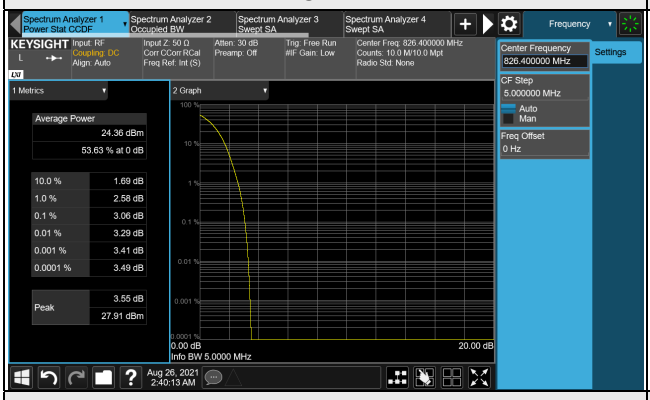
Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		GPRS	EDGE
128	824.2	2.70	2.70
189	836.4	2.69	2.69
251	848.8	2.70	2.70

Spectrum Plot of Worst Value	
GPRS	EDGE
	

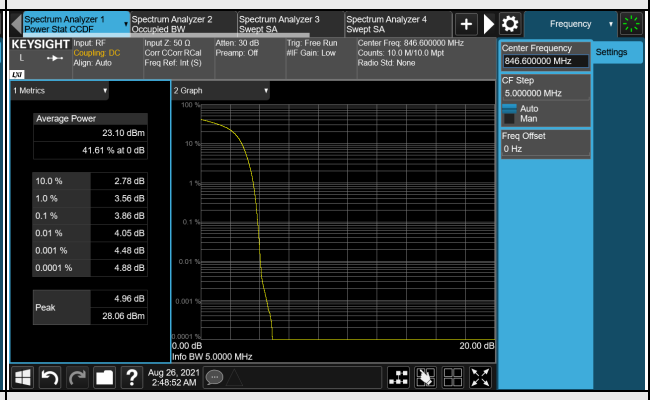
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		WCDMA	HSDPA	HSUPA
4132	826.4	3.06	3.80	3.78
4182	836.4	3.03	3.81	3.85
4233	846.6	3.04	3.86	3.86

Spectrum Plot of Worst Value

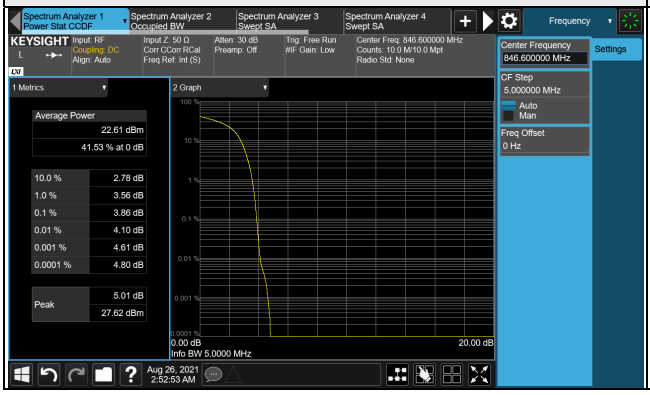
WCDMA



HSDPA



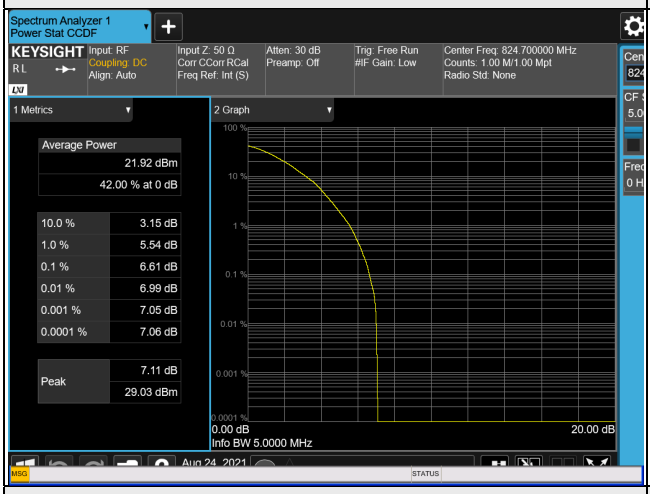
HSUPA



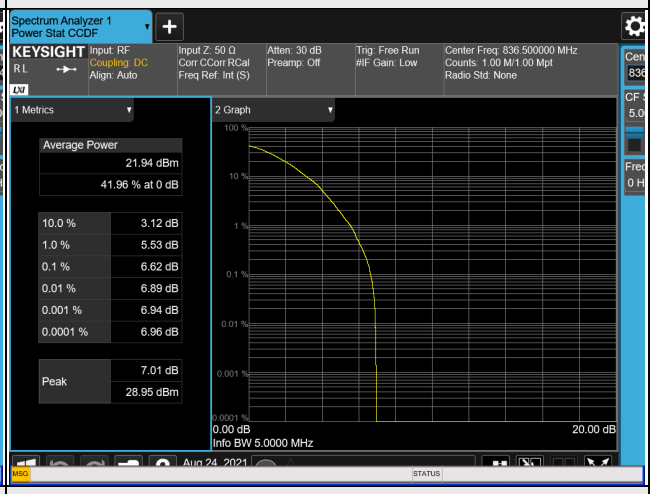
LTE Band 5, Channel Bandwidth 1.4MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
20407	824.7	3.85	5.43	6.61
20525	836.5	3.83	5.40	6.54
20643	848.3	3.70	4.96	6.04
LTE Band 5, Channel Bandwidth 3MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
20415	825.5	3.64	5.27	6.58
20525	836.5	3.63	5.26	6.62
20635	847.5	3.52	4.89	6.10
LTE Band 5, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
20425	826.5	3.65	5.21	6.60
20525	836.5	3.61	5.22	6.56
20625	846.5	3.51	4.84	6.04
LTE Band 5, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
20450	829.0	3.59	5.22	6.59
20525	836.5	3.55	5.13	6.47
20600	844.0	3.57	5.21	6.57

Spectrum Plot of Worst Value

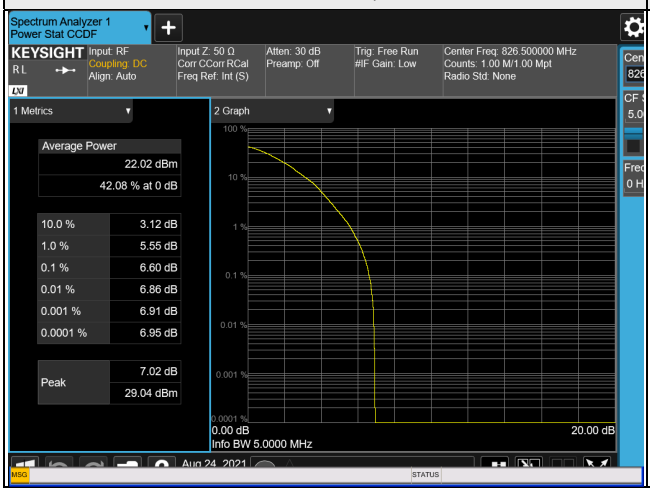
1.4MHz / 64QAM



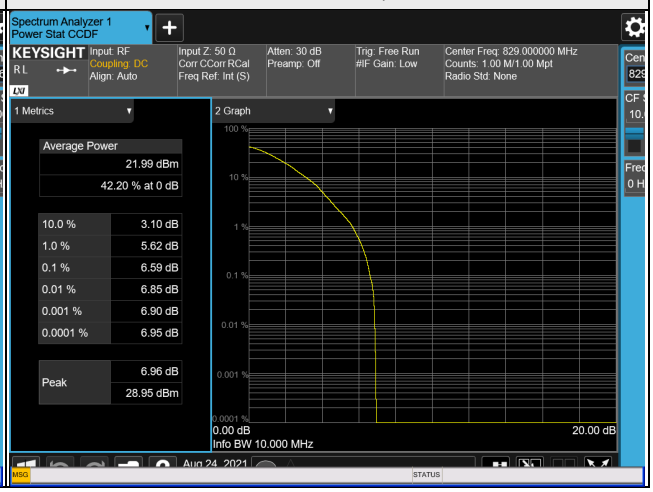
3MHz / 64QAM



5MHz / 64QAM



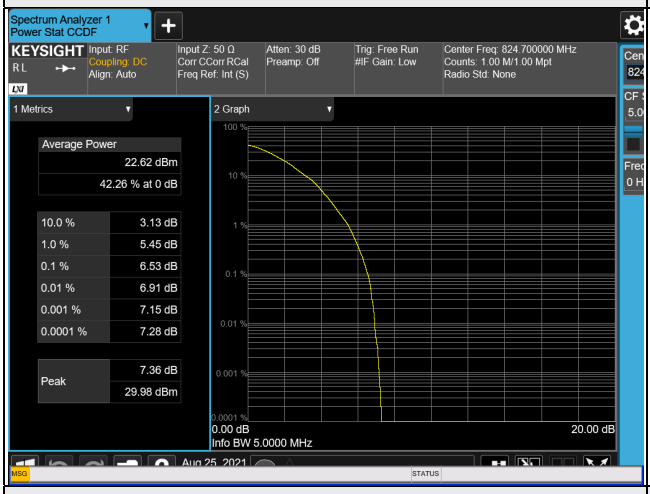
10MHz / 64QAM



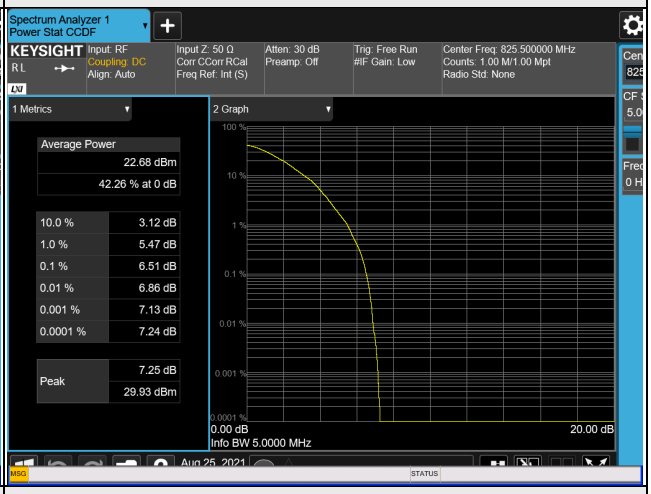
LTE Band 26, Channel Bandwidth 1.4MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
26797	824.7	3.84	5.36	6.53
26915	836.5	3.79	5.28	6.47
27033	848.3	3.76	5.11	6.05
LTE Band 26, Channel Bandwidth 3MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
26805	825.5	3.62	5.25	6.51
26915	836.5	3.59	5.17	6.48
27025	847.5	3.56	5.07	6.08
LTE Band 26, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
26815	826.5	3.62	5.21	6.50
26915	836.5	3.61	5.20	6.48
27015	846.5	3.55	5.04	6.03
LTE Band 26, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
26840	829.0	3.57	5.15	6.50
26915	836.5	3.52	5.14	6.40
26990	844.0	3.56	5.21	6.40
LTE Band 26, Channel Bandwidth 15MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
26865	831.5	3.54	5.18	6.43
26915	836.5	3.49	5.10	6.38
26965	841.5	3.50	5.15	6.36

Spectrum Plot of Worst Value

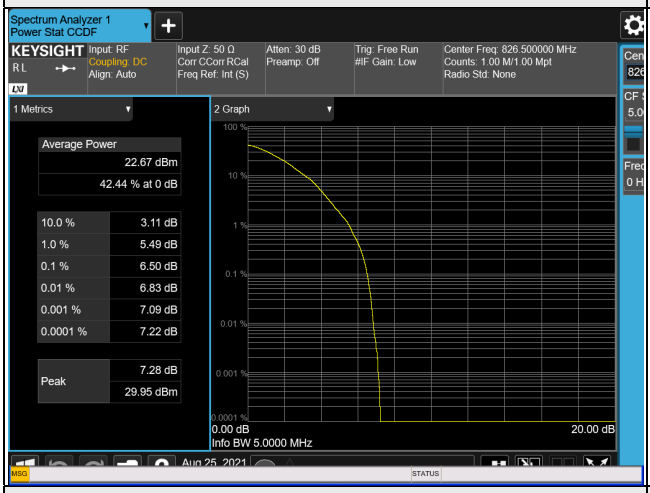
1.4MHz / 64QAM



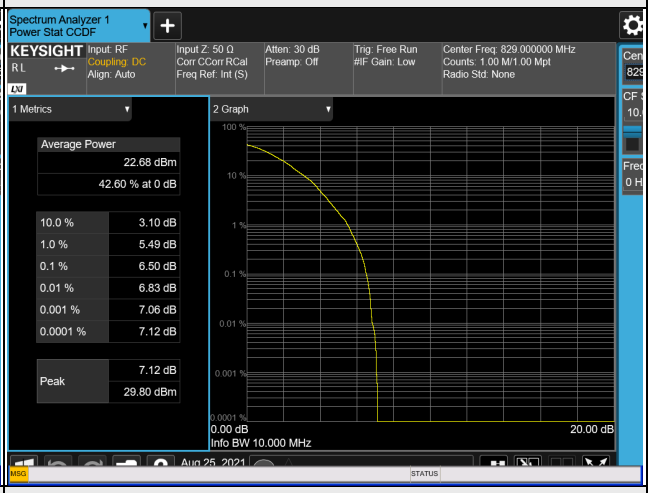
3MHz / 64QAM



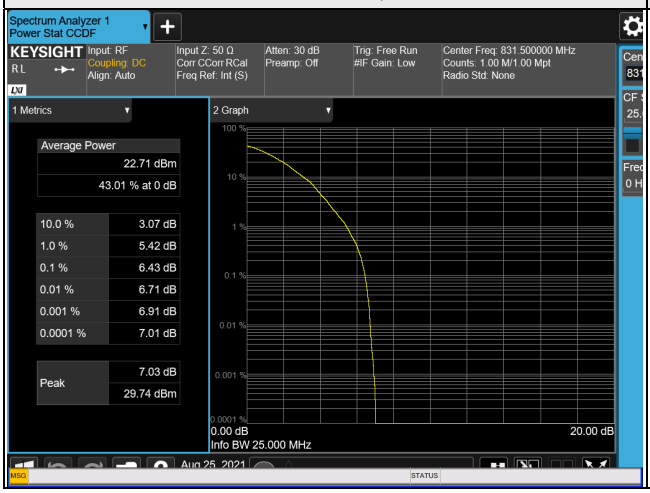
5MHz / 64QAM



10MHz / 64QAM



15MHz / 64QAM

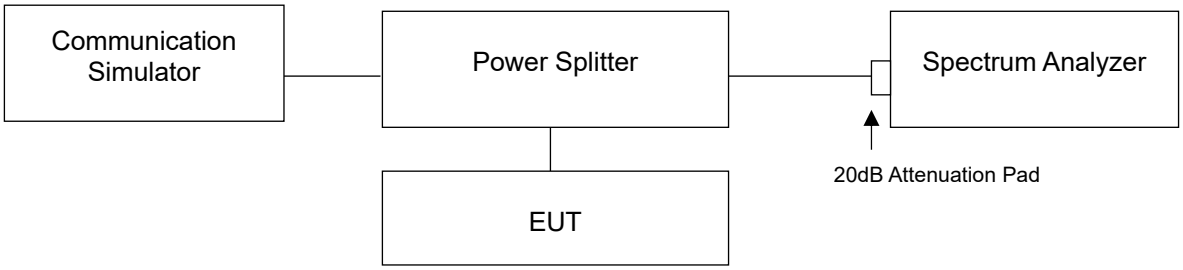


4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

4.7.2 Test Setup



4.7.3 Test Procedure

a. All measurements were done at low, middle and high channels operational frequency range.

a. Measuring frequency range is from 9kHz to 10GHz. 20dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz are used for GPRS, EDGE and WCDMA band conducted emission measurement.

b. Measuring frequency range is from 9kHz to 9GHz. 20dB attenuation pad is connected with spectrum. RBW=100kHz and VBW=300kHz for 9kHz to 1GHz and RBW=1MHz and VBW=3MHz for 1 GHz to 9GHz are used for LTE band conducted emission measurement.