

FCC Test Report

(Part 22, Part 24, Part 27 – NSA Mode: n5A + LTE Band 2 / 66)

Report No.: RF200514C16A-3

FCC ID: T8GSAN9000

Test Model: SA-N9000 OEM D1

Received Date: May 14, 2020

Test Date: Aug. 08 ~ Dec. 15, 2020

Issued Date: Dec. 22, 2020

Applicant: Harman Connected Car Division

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lin Kou Laboratories

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FCC Registration / 788550 / TW0003

Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
RF200514C16A-3	Original release	Dec. 22, 2020

1 Certificate of Conformity

Product: Module

Brand: Harman

Test Model: SA-N9000 OEM D1

Sample Status: Standard Sample

Applicant: Harman Connected Car Division

Test Date: Aug. 08 ~ Dec. 15, 2020

Standards: FCC Part 22, Subpart H
FCC Part 24, Subpart E
FCC Part 27, Subpart L

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. 22, 2020
Celine Chou / Senior Specialist

Approved by : Bruce Chen , **Date:** Dec. 22, 2020
Bruce Chen / Senior Project Engineer

2 Summary of Test Results

For n5

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 -12.40dB at 36.54MHz.

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

For LTE Band 2

Applied Standard: FCC Part 24 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 24.232	Effective radiated power	Pass	Meet the requirement of limit.
2.1046 24.232(d)	Peak To Average Ratio	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement
2.1055 24.235	Frequency Stability	Pass	Meet the requirement of limit.
2.1049 24.238(b)	Occupied Bandwidth	Pass	Meet the requirement of limit.
24.238(b)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 24.238	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 24.238	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -10.20dB at 36.54MHz.

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

For LTE Band 66

Applied Standard: FCC Part 27 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 27.50 (d)(4)	Equivalent Isotropically Radiated Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement of limit.
27.50 (d)(5)	Peak To Average Ratio	Pass	Meet the requirement of limit.
2.1055 27.54	Frequency Stability Stay with the authorized bands of operation	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
2.1051 27.53(h)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(h)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53(h)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -16.90dB at 32.18MHz.

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.63 dB
	200MHz ~ 1000MHz	3.64 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Dec. 31, 2019	Dec. 30, 2020
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Oct. 03, 2019	Oct. 02, 2020
			Sep. 16, 2020	Sep. 15, 2021
Signal Analyzer Keysight	N9010A	MY56070348	Sep. 09, 2019	Sep. 08, 2020
			Sep. 16, 2020	Sep. 15, 2021
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Nov. 11, 2019	Nov. 10, 2020
			Nov. 03, 2020	Nov. 02, 2021
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-1170	Nov. 24, 2019	Nov. 23, 2020
			Nov. 22, 2020	Nov. 21, 2021
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 24, 2019	Nov. 23, 2020
			Nov. 22, 2020	Nov. 21, 2021
Horn Antenna ETS	3117	00034128	Nov. 24, 2019	Nov. 23, 2020
			Nov. 22, 2020	Nov. 21, 2021
MXG Vector signal generator Agilent	N5182B	MY53050162	Jan. 14, 2020	Jan. 13, 2021
Spectrum Analyzer KEYSIGHT	N9030B	MY57140953	Jul. 02, 2020	Jul. 01, 2021
5G Wireless Test Platforms Keysight	E7515B	MY58300759	Apr. 18, 2020	Apr. 17, 2021
Loop Antenna TESEQ	HLA 6121	45745	Jul. 06, 2020	Jul. 05, 2021
Preamplifier Agilent (Below 1GHz)	8447D	2944A10631	Jun. 08, 2020	Jun. 07, 2021
Preamplifier KEYSIGHT (Above 1GHz)	83017A	MY53270295	Jun. 08, 2020	Jun. 07, 2021
RF Coaxial Cable WOKEN With 5dB PAD	8D-FB	Cable-CH4-01	Aug. 20, 2019	Aug. 19, 2020
			Aug. 16, 2020	Aug. 15, 2021
RF Coaxial Cable EMCI	EMC102-KM-KM-3000	150929	Aug. 20, 2019	Aug. 19, 2020
			Aug. 16, 2020	Aug. 15, 2021
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	Aug. 20, 2019	Aug. 19, 2020
			Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER	SUCOFLEX 104	MY 13380+295012/04	Jun. 08, 2020	Jun. 07, 2021
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03 (250724)	Jun. 08, 2020	Jun. 07, 2021
Software BV ADT	ADT_Radiated_V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021703	NA	NA
Turn Table BV ADT	TT100	TT93021703	NA	NA
Turn Table Controller BV ADT	SC100	SC93021703	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Pre-amplifier (18GHz-40GHz) EMC	EMC184045B	980175	Sep. 09, 2019	Sep. 08, 2020
			Sep. 04, 2020	Sep. 03, 2021
Standard Temperature And Humidity Chamber TERCHY	MHU-225AU	920842	May 27, 2020	May 26, 2021
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
True RMS Clamp Meter Fluke	325	31130711WS	Jun. 06, 2020	Jun. 05, 2021
DC power supply	U8002A	MY56330015	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 4.

3 General Information

3.1 General Description of EUT

Product	Module
Brand	Harman
Test Model	SA-N9000 OEM D1
Sample Status	Standard Sample
Power Supply rating	4.2Vdc

n5

Modulation Type	$\pi/2$ BPSK, QPSK, 16QAM, 64QAM, 256QAM					
Waveform Type	CP-OFDM, DFT-s-OFDM					
Operating Frequency	n5 (Channel Bandwidth: 5MHz)	826.5 ~ 846.5MHz				
	n5 (Channel Bandwidth: 10MHz)	829.0 ~ 844.0MHz				
	n5 (Channel Bandwidth: 15MHz)	831.5 ~ 841.5MHz				
	n5 (Channel Bandwidth: 20MHz)	834.0 ~ 839.0MHz				
Max. ERP Power		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
	n5 (Channel Bandwidth: 5MHz)	155.239mW (21.91dBm)	143.219mW (21.56dBm)	118.304mW (20.73dBm)	83.176mW (19.20dBm)	50.234mW (17.01dBm)
	n5 (Channel Bandwidth: 10MHz)	155.955mW (21.93dBm)	143.880mW (21.58dBm)	118.577mW (20.74dBm)	84.723mW (19.28dBm)	51.168mW (17.09dBm)
	n5 (Channel Bandwidth: 15MHz)	157.761mW (21.98dBm)	145.211mW (21.62dBm)	120.226mW (20.80dBm)	85.507mW (19.32dBm)	52.119mW (17.17dBm)
	n5 (Channel Bandwidth: 20MHz)	158.125mW (21.99dBm)	147.231mW (21.68dBm)	120.781mW (20.82dBm)	86.696mW (19.38dBm)	52.360mW (17.19dBm)
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
Emission Designator	n5 (Channel Bandwidth: 5MHz)	4M49G7D	4M46G7D	4M45D7W	4M46D7W	4M46D7W
	n5 (Channel Bandwidth: 10MHz)	8M99G7D	9M16G7D	9M27D7W	9M27D7W	9M27D7W
	n5 (Channel Bandwidth: 15MHz)	13M5G7D	14M1G7D	14M1D7W	14M1D7W	14M1D7W
	n5 (Channel Bandwidth: 20MHz)	18M0G7D	19M0G7D	18M9D7W	18M9D7W	18M9D9W

LTE Band

Modulation Type	QPSK, 16QAM, 64QAM, 256QAM				
Operating Frequency	LTE Band 2 (Channel Bandwidth: 1.4MHz)	1850.7 ~ 1909.3MHz			
	LTE Band 2 (Channel Bandwidth: 3MHz)	1851.5 ~ 1908.5MHz			
	LTE Band 2 (Channel Bandwidth: 5MHz)	1852.5 ~ 1907.5MHz			
	LTE Band 2 (Channel Bandwidth: 10MHz)	1855.0 ~ 1905.0MHz			
	LTE Band 2 (Channel Bandwidth: 15MHz)	1857.5 ~ 1902.5MHz			
	LTE Band 2 (Channel Bandwidth: 20MHz)	1860.0 ~ 1900.0MHz			
	LTE Band 66 (Channel Bandwidth: 1.4MHz)	1710.7 ~ 1779.3MHz			
	LTE Band 66 (Channel Bandwidth: 3MHz)	1711.5 ~ 1778.5MHz			
	LTE Band 66 (Channel Bandwidth: 5MHz)	1712.5 ~ 1777.5MHz			
	LTE Band 66 (Channel Bandwidth: 10MHz)	1715.0 ~ 1775.0MHz			
	LTE Band 66 (Channel Bandwidth: 15MHz)	1717.5 ~ 1772.5MHz			
	LTE Band 66 (Channel Bandwidth: 20MHz)	1720.0 ~ 1770.0MHz			
Max. EIRP Power		QPSK	16QAM	64QAM	256QAM
	LTE Band 2 (Channel Bandwidth: 1.4MHz)	399.025mW (26.01dBm)	306.196mW (24.86dBm)	252.348mW (24.02dBm)	158.125mW (21.99dBm)
	LTE Band 2 (Channel Bandwidth: 3MHz)	394.457mW (25.96dBm)	313.329mW (24.96dBm)	248.313mW (23.95dBm)	158.855mW (22.01dBm)
	LTE Band 2 (Channel Bandwidth: 5MHz)	391.742mW (25.93dBm)	313.329mW (24.96dBm)	250.035mW (23.98dBm)	155.597mW (21.92dBm)
	LTE Band 2 (Channel Bandwidth: 10MHz)	399.025mW (26.01dBm)	314.775mW (24.98dBm)	245.471mW (23.90dBm)	159.221mW (22.02dBm)
	LTE Band 2 (Channel Bandwidth: 15MHz)	392.645mW (25.94dBm)	317.687mW (25.02dBm)	250.035mW (23.98dBm)	155.239mW (21.91dBm)
	LTE Band 2 (Channel Bandwidth: 20MHz)	399.025mW (26.01dBm)	315.500mW (24.99dBm)	251.189mW (24.00dBm)	157.761mW (21.98dBm)
	LTE Band 66 (Channel Bandwidth: 1.4MHz)	459.198mW (26.62dBm)	364.754mW (25.62dBm)	291.072mW (24.64dBm)	182.390mW (22.61dBm)
	LTE Band 66 (Channel Bandwidth: 3MHz)	461.318mW (26.64dBm)	354.813mW (25.50dBm)	284.446mW (24.54dBm)	182.390mW (22.61dBm)
	LTE Band 66 (Channel Bandwidth: 5MHz)	450.817mW (26.54dBm)	349.140mW (25.43dBm)	284.446mW (24.54dBm)	176.604mW (22.47dBm)
	LTE Band 66 (Channel Bandwidth: 10MHz)	450.817mW (26.54dBm)	357.273mW (25.53dBm)	284.446mW (24.54dBm)	179.473mW (22.54dBm)
	LTE Band 66 (Channel Bandwidth: 15MHz)	434.510mW (26.38dBm)	350.752mW (25.45dBm)	279.254mW (24.46dBm)	174.582mW (22.42dBm)
	LTE Band 66 (Channel Bandwidth: 20MHz)	464.515mW (26.67dBm)	349.140mW (25.43dBm)	278.612mW (24.45dBm)	177.828mW (22.50dBm)

Emission Designator		QPSK	16QAM	64QAM	256QAM
	LTE Band 2 (Channel Bandwidth: 1.4MHz)	1M09G7D	1M09G7D	1M09D7W	1M09D7W
	LTE Band 2 (Channel Bandwidth: 3MHz)	2M69G7D	2M69G7D	2M68D7W	2M69D7W
	LTE Band 2 (Channel Bandwidth: 5MHz)	4M50G7D	4M50G7D	4M49D7W	4M50D7W
	LTE Band 2 (Channel Bandwidth: 10MHz)	8M98G7D	8M97G7D	8M97D7W	8M97D7W
	LTE Band 2 (Channel Bandwidth: 15MHz)	13M5G7D	13M4G7D	13M4D7W	13M4D7W
	LTE Band 2 (Channel Bandwidth: 20MHz)	18M0G7D	18M0G7D	18M0D7W	18M0D7W
	LTE Band 66 (Channel Bandwidth: 1.4MHz)	1M09G7D	1M09G7D	1M09D7W	1M09D7W
	LTE Band 66 (Channel Bandwidth: 3MHz)	2M69G7D	2M69G7D	2M68D7W	2M69D7W
	LTE Band 66 (Channel Bandwidth: 5MHz)	4M50G7D	4M50G7D	4M50D7W	4M50D7W
	LTE Band 66 (Channel Bandwidth: 10MHz)	8M98G7D	8M98G7D	8M98D7W	8M99D7W
	LTE Band 66 (Channel Bandwidth: 15MHz)	13M5G7D	13M5G7D	13M4D7W	13M4D7W
	LTE Band 66 (Channel Bandwidth: 20MHz)	18M0G7D	18M0G7D	18M0D7W	18M0D7W
Antenna Type	Refer to note				
Antenna Connector	Refer to note				
Accessory Device	NA				
Cable Supplied	NA				

Note:

1. The antenna information is listed as below.

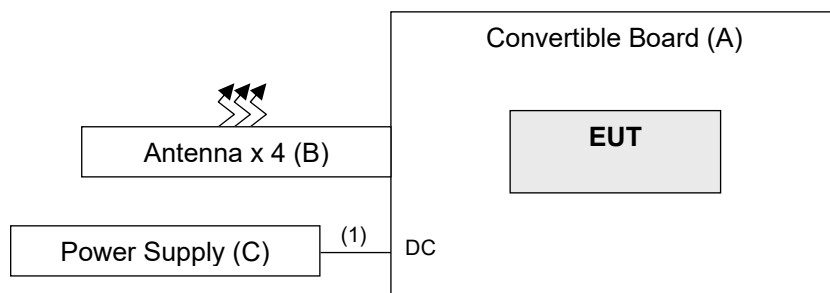
Operating frequency band	Antenna	Gain (dBi)	Connector Type
Band 2	5G/4G Terminal Mount Monopole Antenna	2.92	SMA
Band 5		1.01	
Band 7		2.20	
Band 12		-1.17	
Band 25		2.97	
Band 38		2.18	
Band 41		2.20	
Band 66		3.44	
Band 71		1.72	
Band 77		2.61	

* 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.

2. The EUT supports the following ENDC configuration.

5G NR	FCC 5G FR1			ENDC
	Band	SCS	Bandwidth (MHz)	
	n5	15kHz	5/10/15/20	Band 2/66
	n41	30kHz	10/15/20/40/50/60/80/90/100	Band 26
	n66	15kHz	5/10/15/20/40	Band 5/12
	n71	15kHz	5/10/15/20	Band 2/66

3.2 Configuration of System under Test



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.	Convertible Board	NA	NA	NA	NA	Provided by client
B.	Antenna x 4	TAOGLAS	TG.55.8113	NA	NA	Provided by client
C.	DC Power supply	TECPEL	GPS-3030DD	GEO855739	NA	-

Note: All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC cable	1	1	N	0	-

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 on X-plane. Following channel(s) was (were) selected for the final test as listed below.

n5

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	ERP	165300 to 169300	165300 (826.5MHz), 167300 (836.5MHz), 169300 (846.5MHz)	5MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		165800 to 168800	165800 (829.0MHz), 167300 (836.5MHz), 168800 (844.0MHz)	10MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 26 RB Offset 1 RB / 51 RB Offset 26 RB / 0 RB Offset 26 RB / 13 RB Offset 26 RB / 26 RB Offset 52 RB / 0 RB Offset
		166300 to 168300	166300 (831.5MHz), 167300 (836.5MHz), 168300 (841.5MHz)	15MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 39 RB Offset 1 RB / 78 RB Offset 39 RB / 0 RB Offset 39 RB / 19 RB Offset 39 RB / 40 RB Offset 79 RB / 0 RB Offset
		166800 to 167800	166800 (834.0MHz), 167300 (836.5MHz), 167800 (839.0MHz)	20MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 53 RB Offset 1 RB / 105 RB Offset 53 RB / 0 RB Offset 53 RB / 27 RB Offset 53 RB / 53 RB Offset 106 RB / 0 RB Offset
-	Modulation characteristics	166800 to 167800	167300 (836.5MHz)	20MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	106 RB / 0 RB Offset
-	Frequency Stability	165300 to 169300	165300 (826.5MHz), 169300 (846.5MHz)	5MHz	$\pi/2$ BPSK	25 RB / 0 RB Offset
		165800 to 168800	165800 (829.0MHz), 168800 (844.0MHz)	10MHz	$\pi/2$ BPSK	52 RB / 0 RB Offset
		166300 to 168300	166300 (831.5MHz), 168300 (841.5MHz)	15MHz	$\pi/2$ BPSK	79 RB / 0 RB Offset
		166800 to 167800	166800 (834.0MHz), 167800 (839.0MHz)	20MHz	$\pi/2$ BPSK	106 RB / 0 RB Offset
-	Occupied Bandwidth	165300 to 169300	165300 (826.5MHz), 167300 (836.5MHz), 169300 (846.5MHz)	5MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	25 RB / 0 RB Offset
		165800 to 168800	165800 (829.0MHz), 167300 (836.5MHz), 168800 (844.0MHz)	10MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	52 RB / 0 RB Offset
		166300 to 168300	166300 (831.5MHz), 167300 (836.5MHz), 168300 (841.5MHz)	15MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	79 RB / 0 RB Offset
		166800 to 167800	166800 (834.0MHz), 167300 (836.5MHz), 167800 (839.0MHz)	20MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	106 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Band Edge	165300 to 169300	165300 (826.5MHz), 169300 (846.5MHz)	5MHz	$\pi/2$ BPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		165800 to 168800	165800 (829.0MHz), 168800 (844.0MHz)	10MHz	$\pi/2$ BPSK	1 RB / 0 RB Offset 1 RB / 51 RB Offset 52 RB / 0 RB Offset
		166300 to 168300	166300 (831.5MHz), 168300 (841.5MHz)	15MHz	$\pi/2$ BPSK	1 RB / 0 RB Offset 1 RB / 78 RB Offset 79 RB / 0 RB Offset
		166800 to 167800	166800 (834.0MHz), 167800 (839.0MHz)	20MHz	$\pi/2$ BPSK	1 RB / 0 RB Offset 1 RB / 105 RB Offset 106 RB / 0 RB Offset
-	Peak to Average Ratio	165300 to 169300	165300 (826.5MHz), 167300 (836.5MHz), 169300 (846.5MHz)	5MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		165800 to 168800	165800 (829.0MHz), 167300 (836.5MHz), 168800 (844.0MHz)	10MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		166300 to 168300	166300 (831.5MHz), 167300 (836.5MHz), 168300 (841.5MHz)	15MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		166800 to 167800	166800 (834.0MHz), 167300 (836.5MHz), 167800 (839.0MHz)	20MHz	$\pi/2$ BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
-	Conducted Emission	165300 to 169300	165300 (826.5MHz), 167300 (836.5MHz), 169300 (846.5MHz)	5MHz	$\pi/2$ BPSK	1 RB / 0 RB Offset
		165800 to 168800	165800 (829.0MHz), 167300 (836.5MHz), 168800 (844.0MHz)	10MHz	$\pi/2$ BPSK	1 RB / 0 RB Offset
		166300 to 168300	166300 (831.5MHz), 167300 (836.5MHz), 168300 (841.5MHz)	15MHz	$\pi/2$ BPSK	1 RB / 0 RB Offset
		166800 to 167800	166800 (834.0MHz), 167300 (836.5MHz), 167800 (839.0MHz)	20MHz	$\pi/2$ BPSK	1 RB / 0 RB Offset
-	Radiated Emission Below 1GHz	166800 to 167800	166800 (834.0MHz)	20MHz	$\pi/2$ BPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	165300 to 169300	165300 (826.5MHz), 167300 (836.5MHz), 169300 (846.5MHz)	5MHz	$\pi/2$ BPSK	1 RB / 0 RB Offset
		165800 to 168800	165800 (829.0MHz), 167300 (836.5MHz), 168800 (844.0MHz)	10MHz	$\pi/2$ BPSK	1 RB / 0 RB Offset
		166300 to 168300	166300 (831.5MHz), 167300 (836.5MHz), 168300 (841.5MHz)	15MHz	$\pi/2$ BPSK	1 RB / 0 RB Offset
		166800 to 167800	166800 (834.0MHz), 167300 (836.5MHz), 167800 (839.0MHz)	20MHz	$\pi/2$ BPSK	1 RB / 0 RB Offset

Note: The conducted output power for $\pi/2$ BPSK, QPSK, 16QAM, 64QAM and 256QAM, measured value of $\pi/2$ BPSK is higher than QPSK, 16QAM, 64QAM and 256QAM mode. Therefore, only ERP, Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under $\pi/2$ BPSK, QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under $\pi/2$ BPSK mode only.

LTE Band 2

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	18607 to 19193	18607 (1850.70MHz), 18900 (1880.00MHz), 19193 (1909.30MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 2 RB Offset 1 RB / 5 RB Offset 3 RB / 0 RB Offset 3 RB / 1 RB Offset 3 RB / 3 RB Offset 6 RB / 0 RB Offset
		18615 to 19185	18615 (1851.50MHz), 18900 (1880.00MHz), 19185 (1908.50MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 7 RB Offset 1 RB / 14 RB Offset 8 RB / 0 RB Offset 8 RB / 3 RB Offset 8 RB / 7 RB Offset 15 RB / 0 RB Offset
		18625 to 19175	18625 (1852.50MHz), 18900 (1880.00MHz), 19175 (1907.50MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		18650 to 19150	18650 (1855.00MHz), 18900 (1880.00MHz), 19150 (1905.00MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 1 RB / 49 RB Offset 25 RB / 0 RB Offset 25 RB / 12 RB Offset 25 RB / 25 RB Offset 50 RB / 0 RB Offset
		18675 to 19125	18675 (1857.50MHz), 18900 (1880.00MHz), 19125 (1902.50MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 37 RB Offset 1 RB / 74 RB Offset 36 RB / 0 RB Offset 36 RB / 19 RB Offset 36 RB / 39 RB Offset 75 RB / 0 RB Offset
		18700 to 19100	18700 (1860.00MHz), 18900 (1880.00MHz), 19100 (1900.00MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 50 RB Offset 1 RB / 99 RB Offset 50 RB / 0 RB Offset 50 RB / 25 RB Offset 50 RB / 50 RB Offset 100 RB / 0 RB Offset
-	Frequency Stability	18607 to 19193	18607 (1850.70MHz), 19193 (1909.30MHz)	1.4MHz	QPSK	6 RB / 0 RB Offset
		18615 to 19185	18615 (1851.50MHz), 19185 (1908.50MHz)	3MHz	QPSK	15 RB / 0 RB Offset
		18625 to 19175	18625 (1852.50MHz), 19175 (1907.50MHz)	5MHz	QPSK	25 RB / 0 RB Offset
		18650 to 19150	18650 (1855.00MHz), 19150 (1905.00MHz)	10MHz	QPSK	50 RB / 0 RB Offset
		18675 to 19125	18675 (1857.50MHz), 19125 (1902.50MHz)	15MHz	QPSK	75 RB / 0 RB Offset
		18700 to 19100	18700 (1860.00MHz), 19100 (1900.00MHz)	20MHz	QPSK	100 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Occupied Bandwidth	18607 to 19193	18607 (1850.70MHz), 18900 (1880.00MHz), 19193 (1909.30MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	6 RB / 0 RB Offset
		18615 to 19185	18615 (1851.50MHz), 18900 (1880.00MHz), 19185 (1908.50MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	15 RB / 0 RB Offset
		18625 to 19175	18625 (1852.50MHz), 18900 (1880.00MHz), 19175 (1907.50MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	25 RB / 0 RB Offset
		18650 to 19150	18650 (1855.00MHz), 18900 (1880.00MHz), 19150 (1905.00MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	50 RB / 0 RB Offset
		18675 to 19125	18675 (1857.50MHz), 18900 (1880.00MHz), 19125 (1902.50MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	75 RB / 0 RB Offset
		18700 to 19100	18700 (1860.00MHz), 18900 (1880.00MHz), 19100 (1900.00MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	100 RB / 0 RB Offset
-	Band Edge	18607 to 19193	18607 (1850.70MHz), 19193 (1909.30MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset 1 RB / 5 RB Offset 6 RB / 0 RB Offset
		18615 to 19185	18615 (1851.50MHz), 19185 (1908.50MHz)	3MHz	QPSK	1 RB / 0 RB Offset 1 RB / 14 RB Offset 15 RB / 0 RB Offset
		18625 to 19175	18625 (1852.50MHz), 19175 (1907.50MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		18650 to 19150	18650 (1855.00MHz), 19150 (1905.00MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
		18675 to 19125	18675 (1857.50MHz), 19125 (1902.50MHz)	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 74 RB Offset 75 RB / 0 RB Offset
		18700 to 19100	18700 (1860.00MHz), 19100 (1900.00MHz)	20MHz	QPSK	1 RB / 0 RB Offset 1 RB / 99 RB Offset 100 RB / 0 RB Offset
-	Peak to Average Ratio	18607 to 19193	18607 (1850.70MHz), 18900 (1880.00MHz), 19193 (1909.30MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		18615 to 19185	18615 (1851.50MHz), 18900 (1880.00MHz), 19185 (1908.50MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		18625 to 19175	18625 (1852.50MHz), 18900 (1880.00MHz), 19175 (1907.50MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		18650 to 19150	18650 (1855.00MHz), 18900 (1880.00MHz), 19150 (1905.00MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		18675 to 19125	18675 (1857.50MHz), 18900 (1880.00MHz), 19125 (1902.50MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		18700 to 19100	18700 (1860.00MHz), 18900 (1880.00MHz), 19100 (1900.00MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Conducted Emission	18607 to 19193	18607 (1850.70MHz), 18900 (1880.00MHz), 19193 (1909.30MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset
		18615 to 19185	18615 (1851.50MHz), 18900 (1880.00MHz), 19185 (1908.50MHz)	3MHz	QPSK	1 RB / 0 RB Offset
		18625 to 19175	18625 (1852.50MHz), 18900 (1880.00MHz), 19175 (1907.50MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		18650 to 19150	18650 (1855.00MHz), 18900 (1880.00MHz), 19150 (1905.00MHz)	10MHz	QPSK	1 RB / 0 RB Offset
		18675 to 19125	18675 (1857.50MHz), 18900 (1880.00MHz), 19125 (1902.50MHz)	15MHz	QPSK	1 RB / 0 RB Offset
		18700 to 19100	18700 (1860.00MHz), 18900 (1880.00MHz), 19100 (1900.00MHz)	20MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Below 1GHz	18625 to 19175	18900 (1880.00MHz)	5MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	18607 to 19193	18607 (1850.70MHz), 18900 (1880.00MHz), 19193 (1909.30MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset
		18625 to 19175	18625 (1852.50MHz), 18900 (1880.00MHz), 19175 (1907.50MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		18700 to 19100	18700 (1860.00MHz), 18900 (1880.00MHz), 19100 (1900.00MHz)	20MHz	QPSK	1 RB / 0 RB Offset

Note: The conducted output power for QPSK, 16QAM, 64QAM and 256QAM, measured value of QPSK is higher than 16QAM, 64QAM and 256QAM mode. Therefore, only EIRP, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under QPSK mode only.

LTE Band 66

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	EIRP	131979 to 132665	131979 (1710.7MHz), 132322 (1745.0MHz), 132665 (1779.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 2 RB Offset 1 RB / 5 RB Offset 3 RB / 0 RB Offset 3 RB / 1 RB Offset 3 RB / 3 RB Offset 6 RB / 0 RB Offset
		131987 to 132657	131987 (1711.5MHz), 132322 (1745.0MHz), 132657 (1778.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 7 RB Offset 1 RB / 14 RB Offset 8 RB / 0 RB Offset 8 RB / 3 RB Offset 8 RB / 7 RB Offset 15 RB / 0 RB Offset
		131997 to 132647	131997 (1712.5MHz), 132322 (1745.0MHz), 132647 (1777.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		132022 to 132622	132022 (1715.0MHz), 132322 (1745.0MHz), 132622 (1775.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 1 RB / 49 RB Offset 25 RB / 0 RB Offset 25 RB / 12 RB Offset 25 RB / 25 RB Offset 50 RB / 0 RB Offset
		132047 to 132597	132047 (1717.5MHz), 132322 (1745.0MHz), 132597 (1772.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 37 RB Offset 1 RB / 74 RB Offset 36 RB / 0 RB Offset 36 RB / 19 RB Offset 36 RB / 39 RB Offset 75 RB / 0 RB Offset
		132072 to 132572	132072 (1720.0MHz), 132322 (1745.0MHz), 132572 (1770.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 50 RB Offset 1 RB / 99 RB Offset 50 RB / 0 RB Offset 50 RB / 25 RB Offset 50 RB / 50 RB Offset 100 RB / 0 RB Offset
-	Frequency Stability	131979 to 132665	131979 (1710.7MHz), 132665 (1779.3MHz)	1.4MHz	QPSK	6 RB / 0 RB Offset
		131987 to 132657	131987 (1711.5MHz), 132657 (1778.5MHz)	3MHz	QPSK	15 RB / 0 RB Offset
		131997 to 132647	131997 (1712.5MHz), 132647 (1777.5MHz)	5MHz	QPSK	25 RB / 0 RB Offset
		132022 to 132622	132022 (1715.0MHz), 132622 (1775.0MHz)	10MHz	QPSK	50 RB / 0 RB Offset
		132047 to 132597	132047 (1717.5MHz), 132597 (1772.5MHz)	15MHz	QPSK	75 RB / 0 RB Offset
		132072 to 132572	132072 (1720.0MHz), 132572 (1770.0MHz)	20MHz	QPSK	100 RB / 0 RB Offset

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Emission Bandwidth	131979 to 132665	131979 (1710.7MHz), 132322 (1745.0MHz), 132665 (1779.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	6 RB / 0 RB Offset
		131987 to 132657	131987 (1711.5MHz), 132322 (1745.0MHz), 132657 (1778.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	15 RB / 0 RB Offset
		131997 to 132647	131997 (1712.5MHz), 132322 (1745.0MHz), 132647 (1777.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	25 RB / 0 RB Offset
		132022 to 132622	132022 (1715.0MHz), 132322 (1745.0MHz), 132622 (1775.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	50 RB / 0 RB Offset
		132047 to 132597	132047 (1717.5MHz), 132322 (1745.0MHz), 132597 (1772.5MHz)	15MHz	QPSK / 16QAM / 64QAM / 256QAM	75 RB / 0 RB Offset
		132072 to 132572	132072 (1720.0MHz), 132322 (1745.0MHz), 132572 (1770.0MHz)	20MHz	QPSK / 16QAM / 64QAM / 256QAM	100 RB / 0 RB Offset
-	Band Edge	131979 to 132665	131979 (1710.7MHz), 132665 (1779.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset 1 RB / 5 RB Offset 6 RB / 0 RB Offset
		131987 to 132657	131987 (1711.5MHz), 132657 (1778.5MHz)	3MHz	QPSK	1 RB / 0 RB Offset 1 RB / 14 RB Offset 15 RB / 0 RB Offset
		131997 to 132647	131997 (1712.5MHz), 132647 (1777.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		132022 to 132622	132022 (1715.0MHz), 132622 (1775.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
		132047 to 132597	132047 (1717.5MHz), 132597 (1772.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 74 RB Offset 75 RB / 0 RB Offset
		132072 to 132572	132072 (1720.0MHz), 132572 (1770.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset 1 RB / 99 RB Offset 100 RB / 0 RB Offset
-	Peak to Average Ratio	131979 to 132665	131979 (1710.7MHz), 132322 (1745.0MHz), 132665 (1779.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset
		131987 to 132657	131987 (1711.5MHz), 132322 (1745.0MHz), 132657 (1778.5MHz)	3MHz	QPSK	1 RB / 0 RB Offset
		131997 to 132647	131997 (1712.5MHz), 132322 (1745.0MHz), 132647 (1777.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		132022 to 132622	132022 (1715.0MHz), 132322 (1745.0MHz), 132622 (1775.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset
		132047 to 132597	132047 (1717.5MHz), 132322 (1745.0MHz), 132597 (1772.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset
		132072 to 132572	132072 (1720.0MHz), 132322 (1745.0MHz), 132572 (1770.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Conducted Emission	131979 to 132665	131979 (1710.7MHz), 132322 (1745.0MHz), 132665 (1779.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset
		131987 to 132657	131987 (1711.5MHz), 132322 (1745.0MHz), 132657 (1778.5MHz)	3MHz	QPSK	1 RB / 0 RB Offset
		131997 to 132647	131997 (1712.5MHz), 132322 (1745.0MHz), 132647 (1777.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		132022 to 132622	132022 (1715.0MHz), 132322 (1745.0MHz), 132622 (1775.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset
		132047 to 132597	132047 (1717.5MHz), 132322 (1745.0MHz), 132597 (1772.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset
		132072 to 132572	132072 (1720.0MHz), 132322 (1745.0MHz), 132572 (1770.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Below 1GHz	131997 to 132647	132322 (1745.0MHz)	5MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	131979 to 132665	131979 (1710.7MHz), 132322 (1745.0MHz), 132665 (1779.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset
		131997 to 132647	131997 (1712.5MHz), 132322 (1745.0MHz), 132647 (1777.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		132072 to 132572	132072 (1720.0MHz), 132322 (1745.0MHz), 132572 (1770.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset

Note: The conducted output power for QPSK, 16QAM, 64QAM and 256QAM, measured value of QPSK is higher than 16QAM, 64QAM and 256QAM mode. Therefore, only EIRP, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under QPSK mode only.

Test Condition:

Test Item	Environmental Conditions	Input Power (System)	Tested By
ERP / EIRP	25deg. C, 70%RH	4.2Vdc	James Yang
Modulation characteristics	25deg. C, 70%RH	4.2Vdc	James Yang
Frequency Stability	24deg. C, 64%RH	4.2Vdc	James Yang
Occupied Bandwidth	24deg. C, 64%RH	4.2Vdc	James Yang
Band Edge	24deg. C, 64%RH	4.2Vdc	James Yang
Peak To Average Ratio	24deg. C, 64%RH	4.2Vdc	James Yang
Conducted Emission	24deg. C, 64%RH	4.2Vdc	James Yang
Radiated Emission	22deg. C, 66%RH	120Vac, 60Hz	Jones Chang

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 and References:

Test Standard:

FCC 47 CFR Part 2

FCC 47 CFR Part 22

FCC 47 CFR Part 24

FCC 47 CFR Part 27

ANSI/TIA/EIA-603-D-2010

ANSI/TIA/EIA-603-E 2016

ANSI 63.26-2015

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

References Test Guidance:

KDB 971168 D01 Power Meas License Digital Systems v03r01

KDB 971168 D02 Misc Rev Approv License Devices v02r01

All test items have been performed as a reference to the above KDB test guidance.

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

For n5:

Mobile / Portable station are limited to 7 watts e.r.p.

For LTE Band 2:

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

For LTE Band 66:

Mobile / Portable station are limited to 1 watts e.i.r.p.

4.1.2 Test Procedures

Conducted Power Measurement:

1. Connect the DUT transmitter output to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.
2. Set span to at least 1.5 times the OBW.
3. Set RBW = 1-5% of the OBW, not to exceed 1 MHz.
4. Set VBW $\geq 3 \times$ RBW.
5. Set number of points in sweep $\geq 2 \times$ span / RBW.
6. Sweep time = auto-couple.
7. Detector = RMS (power averaging).
8. If the EUT can be configured to transmit continuously (i.e., burst duty cycle $\geq 98\%$), then set the trigger to free run.
9. If the EUT cannot be configured to transmit continuously (i.e., burst duty cycle $< 98\%$), then use a sweep trigger with the level set to enable triggering only on full power bursts and configure the EUT to transmit at full power for the entire duration of each sweep. Ensure that the sweep time is less than or equal to the transmission burst duration.
10. Trace average at least 100 traces in power averaging (i.e., RMS) mode.
11. Compute the power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with the band limits set equal to the OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

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:

$$\text{EIRP} = P_{\text{Meas}} + G_T$$

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

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:



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.4 Test Results

Conducted Output Power (dBm)

NR Band 5 (SCS 15kHz)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		166800	167300	167800
		Frequency (MHz)		834	836.5	839
20M	pi/2 BPSK	1	0	22.58	22.41	22.21
		1	53	23.13	22.96	22.76
		1	105	21.55	21.38	21.18
		53	0	22.67	22.50	22.30
		53	27	21.52	21.35	21.15
		53	53	22.42	22.25	22.05
		106	0	21.98	21.81	21.61
	QPSK	1	0	21.81	21.64	21.49
		1	53	22.82	22.65	22.50
		1	105	20.66	20.49	20.34
		53	0	21.81	21.64	21.49
		53	27	20.65	20.48	20.33
		53	53	22.23	22.06	21.91
		106	0	21.18	21.01	20.86
	16QAM	1	0	20.99	20.82	20.67
		1	53	21.96	21.79	21.64
		1	105	19.74	19.57	19.42
		53	0	20.92	20.75	20.60
		53	27	19.83	19.66	19.51
		53	53	21.22	21.05	20.90
		106	0	20.18	20.01	19.86
	64QAM	1	0	20.52	20.35	20.20
		1	53	20.19	20.02	19.87
		1	105	19.07	18.90	18.75
		53	0	20.35	20.18	20.03
		53	27	19.25	19.08	18.93
		53	53	19.63	19.46	19.31
		106	0	19.65	19.48	19.33
	256QAM	1	0	18.24	18.07	17.92
		1	53	18.33	18.16	18.01
		1	105	17.25	17.08	16.93
		53	0	18.29	18.12	17.97
		53	27	17.19	17.02	16.87
		53	53	17.62	17.45	17.30
		106	0	17.73	17.56	17.41

NR Band 5 (SCS 15kHz)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		166300	167300	168300
		Frequency (MHz)		831.5	836.5	841.5
15M	pi/2 BPSK	1	0	22.50	22.34	22.19
		1	39	23.12	22.92	22.73
		1	78	21.51	21.33	21.16
		39	0	22.61	22.48	22.27
		39	19	21.50	21.27	21.14
		39	40	22.34	22.21	22.00
		79	0	21.95	21.75	21.59
	QPSK	1	0	21.80	21.59	21.41
		1	39	22.76	22.62	22.46
		1	78	20.60	20.41	20.32
		39	0	21.75	21.61	21.45
		39	19	20.63	20.41	20.28
		39	40	22.17	21.98	21.89
		79	0	21.17	20.99	20.78
	16QAM	1	0	20.92	20.74	20.61
		1	39	21.94	21.78	21.60
		1	78	19.66	19.53	19.37
		39	0	20.90	20.67	20.59
		39	19	19.75	19.62	19.46
		39	40	21.19	20.99	20.88
		79	0	20.16	19.94	19.81
	64QAM	1	0	20.46	20.27	20.18
		1	39	20.18	20.00	19.79
		1	78	19.04	18.84	18.73
		39	0	20.33	20.11	19.98
		39	19	19.18	19.00	18.87
		39	40	19.60	19.40	19.29
		79	0	19.63	19.41	19.28
	256QAM	1	0	18.18	17.99	17.90
		1	39	18.31	18.08	18.00
		1	78	17.23	17.00	16.92
		39	0	18.21	18.08	17.92
		39	19	17.16	16.96	16.85
		39	40	17.60	17.38	17.25
		79	0	17.67	17.48	17.39

NR Band 5 (SCS 15kHz)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		165800	167300	168800
		Frequency (MHz)		829	836.5	844
10M	pi/2 BPSK	1	0	22.49	22.28	22.17
		1	26	23.07	22.85	22.68
		1	51	21.46	21.25	21.15
		26	0	22.56	22.41	22.22
		26	13	21.48	21.19	21.12
		26	26	22.29	22.13	21.99
		52	0	21.91	21.70	21.54
	QPSK	1	0	21.72	21.58	21.36
		1	26	22.72	22.57	22.45
		1	51	20.53	20.36	20.30
		26	0	21.67	21.59	21.40
		26	13	20.61	20.33	20.26
		26	26	22.09	21.92	21.81
		52	0	21.11	20.97	20.72
	16QAM	1	0	20.85	20.69	20.59
		1	26	21.88	21.71	21.55
		1	51	19.58	19.51	19.31
		26	0	20.82	20.66	20.57
		26	13	19.68	19.57	19.44
		26	26	21.11	20.97	20.82
		52	0	20.08	19.93	19.79
	64QAM	1	0	20.42	20.22	20.10
		1	26	20.10	19.99	19.77
		1	51	18.98	18.82	18.70
		26	0	20.27	20.09	19.92
		26	13	19.11	18.95	18.85
		26	26	19.54	19.33	19.24
		52	0	19.56	19.36	19.26
	256QAM	1	0	18.10	17.97	17.84
		1	26	18.23	18.07	17.98
		1	51	17.15	16.99	16.90
		26	0	18.16	18.03	17.88
		26	13	17.14	16.88	16.84
		26	26	17.52	17.37	17.23
		52	0	17.62	17.43	17.35

NR Band 5 (SCS 15kHz)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		165300	167300	169300
		Frequency (MHz)		826.5	836.5	846.5
5M	pi/2 BPSK	1	0	22.46	22.22	22.15
		1	12	23.05	22.78	22.63
		1	24	21.45	21.23	21.07
		12	0	22.51	22.33	22.16
		12	6	21.47	21.13	21.10
		12	13	22.24	22.11	21.92
		25	0	21.89	21.62	21.53
	QPSK	1	0	21.64	21.54	21.31
		1	12	22.70	22.49	22.44
		1	24	20.50	20.30	20.28
		12	0	21.65	21.52	21.35
		12	6	20.53	20.29	20.21
		12	13	22.06	21.86	21.79
		25	0	21.09	20.90	20.67
	16QAM	1	0	20.79	20.61	20.57
		1	12	21.87	21.69	21.47
		1	24	19.57	19.45	19.29
		12	0	20.77	20.59	20.52
		12	6	19.66	19.49	19.42
		12	13	21.06	20.89	20.81
		25	0	20.04	19.88	19.74
	64QAM	1	0	20.34	20.21	20.05
		1	12	20.06	19.94	19.76
		1	24	18.91	18.77	18.68
		12	0	20.19	20.07	19.87
		12	6	19.09	18.87	18.83
		12	13	19.47	19.28	19.22
		25	0	19.48	19.34	19.21
	256QAM	1	0	18.08	17.89	17.82
		1	12	18.15	18.01	17.90
		1	24	17.10	16.91	16.89
		12	0	18.12	17.98	17.83
		12	6	17.12	16.81	16.79
		12	13	17.46	17.32	17.21
		25	0	17.61	17.41	17.27

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18700	18900	19100
		Frequency (MHz)		1860	1880	1900
20M	QPSK	1	0	23.09	22.76	22.61
		1	50	22.92	22.78	22.81
		1	99	23.00	22.84	22.82
		50	0	22.10	22.10	21.63
		50	25	21.91	22.09	21.78
		50	50	22.08	22.03	21.62
		100	0	21.81	21.86	21.65
	16QAM	1	0	21.96	21.62	21.68
		1	50	21.98	21.74	21.75
		1	99	22.07	21.78	21.73
		50	0	20.99	21.09	20.78
		50	25	21.03	21.02	20.69
		50	50	20.91	20.91	20.68
		100	0	20.99	20.78	20.75
	64QAM	1	0	20.93	20.73	20.67
		1	50	20.94	20.81	20.88
		1	99	21.08	20.71	20.78
		50	0	19.94	20.10	19.69
		50	25	20.03	19.92	19.74
		50	50	20.01	20.02	19.75
		100	0	19.97	19.88	19.68
	256QAM	1	0	18.90	18.62	18.65
		1	50	18.90	18.73	18.87
		1	99	19.06	18.73	18.86
		50	0	18.03	18.10	17.77
		50	25	18.00	17.92	17.80
		50	50	17.90	17.90	17.72
		100	0	17.83	17.71	17.80

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18675	18900	19125
		Frequency (MHz)		1857.5	1880	1902.5
15M	QPSK	1	0	22.90	22.65	22.77
		1	37	23.02	22.79	22.86
		1	74	22.91	22.85	22.78
		36	0	22.03	22.05	21.78
		36	19	22.00	21.98	21.65
		36	39	22.09	21.95	21.76
		75	0	21.90	21.84	21.75
	16QAM	1	0	21.94	21.61	21.68
		1	37	22.10	21.80	21.87
		1	74	22.03	21.70	21.72
		36	0	21.08	20.99	20.71
		36	19	20.95	21.02	20.79
		36	39	21.01	21.10	20.70
		75	0	21.00	20.84	20.60
	64QAM	1	0	21.06	20.73	20.75
		1	37	20.90	20.76	20.88
		1	74	20.96	20.77	20.82
		36	0	20.01	19.92	19.72
		36	19	19.96	19.99	19.73
		36	39	19.94	20.04	19.79
		75	0	19.89	19.72	19.66
	256QAM	1	0	18.95	18.65	18.73
		1	37	18.99	18.79	18.75
		1	74	18.95	18.89	18.88
		36	0	18.00	17.93	17.70
		36	19	17.96	17.93	17.61
		36	39	18.05	17.92	17.77
		75	0	17.89	17.79	17.77

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18650	18900	19150
		Frequency (MHz)		1855	1880	1905
10M	QPSK	1	0	23.01	22.76	22.71
		1	24	23.09	22.89	22.72
		1	49	22.92	22.87	22.87
		25	0	21.91	21.94	21.63
		25	12	21.91	21.96	21.73
		25	25	22.09	22.05	21.65
		50	0	21.91	21.89	21.70
	16QAM	1	0	21.90	21.71	21.67
		1	24	22.06	21.73	21.88
		1	49	22.03	21.73	21.80
		25	0	20.90	20.91	20.73
		25	12	21.06	21.07	20.68
		25	25	20.99	20.96	20.72
		50	0	20.87	20.72	20.60
	64QAM	1	0	20.93	20.67	20.62
		1	24	20.98	20.84	20.72
		1	49	20.90	20.80	20.85
		25	0	20.04	19.95	19.68
		25	12	19.98	20.07	19.67
		25	25	20.04	20.06	19.62
		50	0	19.99	19.84	19.63
	256QAM	1	0	18.90	18.71	18.73
		1	24	19.06	18.80	18.77
		1	49	19.10	18.89	18.81
		25	0	17.94	17.98	17.75
		25	12	18.09	18.09	17.65
		25	25	17.94	17.95	17.72
		50	0	17.91	17.71	17.70

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18625	18900	19175
		Frequency (MHz)		1852.5	1880	1907.5
5M	QPSK	1	0	22.98	22.65	22.62
		1	12	23.01	22.72	22.75
		1	24	22.93	22.88	22.86
		12	0	22.02	22.07	21.63
		12	6	22.01	21.95	21.75
		12	13	22.00	21.92	21.78
		25	0	21.80	21.75	21.78
	16QAM	1	0	21.94	21.75	21.76
		1	12	21.92	21.90	21.88
		1	24	22.04	21.85	21.81
		12	0	21.07	21.07	20.62
		12	6	21.09	21.03	20.62
		12	13	21.04	20.95	20.62
		25	0	20.99	20.90	20.75
	64QAM	1	0	20.99	20.61	20.66
		1	12	20.98	20.77	20.72
		1	24	21.06	20.78	20.73
		12	0	20.06	20.00	19.65
		12	6	20.07	20.03	19.80
		12	13	19.93	20.10	19.72
		25	0	19.92	19.74	19.69
	256QAM	1	0	18.99	18.68	18.74
		1	12	18.94	18.78	18.74
		1	24	19.00	18.72	18.71
		12	0	17.97	18.00	17.65
		12	6	17.93	18.02	17.70
		12	13	18.05	18.08	17.79
		25	0	17.83	17.89	17.72

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18615	18900	19185
		Frequency (MHz)		1851.5	1880	1908.5
3M	QPSK	1	0	22.99	22.64	22.76
		1	7	23.04	22.64	22.73
		1	14	23.00	22.76	22.84
		8	0	21.91	21.98	21.63
		8	3	21.90	21.96	21.74
		8	7	21.97	21.99	21.73
		15	0	21.87	21.77	21.72
	16QAM	1	0	22.04	21.77	21.63
		1	7	22.00	21.77	21.73
		1	14	22.01	21.82	21.78
		8	0	20.92	20.98	20.63
		8	3	20.93	20.84	20.63
		8	7	20.97	20.91	20.78
		15	0	20.84	20.63	20.79
	64QAM	1	0	20.90	20.77	20.67
		1	7	20.99	20.71	20.79
		1	14	21.03	20.75	20.72
		8	0	19.91	19.83	19.66
		8	3	20.04	19.93	19.71
		8	7	19.95	19.92	19.64
		15	0	19.86	19.79	19.79
	256QAM	1	0	19.00	18.62	18.72
		1	7	19.07	18.67	18.74
		1	14	19.09	18.85	18.83
		8	0	17.95	17.86	17.72
		8	3	17.91	17.86	17.72
		8	7	17.94	17.81	17.66
		15	0	17.95	17.70	17.72

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18607	18900	19193
		Frequency (MHz)		1850.7	1880	1909.3
1.4M	QPSK	1	0	23.02	22.74	22.64
		1	2	23.09	22.67	22.68
		1	5	22.95	22.72	22.72
		3	0	22.06	21.81	21.65
		3	1	22.04	21.80	21.68
		3	3	21.83	21.94	21.61
		6	0	21.96	21.78	21.79
	16QAM	1	0	21.93	21.71	21.70
		1	2	21.94	21.60	21.65
		1	5	21.91	21.76	21.71
		3	0	21.00	20.91	20.73
		3	1	20.92	21.00	20.71
		3	3	20.86	21.00	20.74
		6	0	20.95	20.72	20.62
	64QAM	1	0	20.90	20.73	20.71
		1	2	20.93	20.60	20.74
		1	5	21.10	20.78	20.81
		3	0	20.10	19.97	19.61
		3	1	20.09	19.99	19.62
		3	3	20.00	19.96	19.67
		6	0	19.98	19.66	19.62
	256QAM	1	0	19.07	18.71	18.73
		1	2	19.01	18.72	18.72
		1	5	18.90	18.86	18.70
		3	0	17.95	17.82	17.74
		3	1	17.95	18.00	17.76
		3	3	17.96	17.96	17.74
		6	0	17.88	17.66	17.80

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132072	132322	132575
		Frequency (MHz)		1720	1745	1770
20M	QPSK	1	0	23.23	22.74	22.65
		1	50	22.95	22.89	22.85
		1	99	23.01	22.74	22.88
		50	0	22.01	22.03	21.60
		50	25	21.98	22.07	21.76
		50	50	22.08	22.07	21.75
		100	0	21.91	21.71	21.62
	16QAM	1	0	21.99	21.64	21.65
		1	50	21.90	21.71	21.88
		1	99	21.99	21.86	21.88
		50	0	20.92	21.05	20.71
		50	25	20.99	20.96	20.61
		50	50	21.01	20.99	20.68
		100	0	20.88	20.84	20.68
	64QAM	1	0	20.93	20.78	20.73
		1	50	21.01	20.72	20.88
		1	99	20.93	20.77	20.78
		50	0	20.06	19.99	19.75
		50	25	19.91	19.98	19.77
		50	50	19.95	20.01	19.79
		100	0	19.97	19.70	19.69
	256QAM	1	0	19.06	18.70	18.63
		1	50	19.01	18.86	18.71
		1	99	18.98	18.85	18.87
		50	0	18.09	18.08	17.66
		50	25	18.10	18.01	17.68
		50	50	17.93	17.98	17.68
		100	0	17.85	17.80	17.79

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132047	132322	132597
		Frequency (MHz)		1717.5	1745	1772.5
15M	QPSK	1	0	22.92	22.61	22.66
		1	37	22.94	22.74	22.77
		1	74	22.94	22.89	22.77
		36	0	22.04	21.90	21.64
		36	19	22.03	21.93	21.64
		36	39	21.94	22.10	21.76
		75	0	21.83	21.77	21.67
	16QAM	1	0	22.00	21.72	21.72
		1	37	22.00	21.87	21.73
		1	74	22.01	21.90	21.80
		36	0	21.02	21.10	20.65
		36	19	21.01	21.07	20.70
		36	39	20.96	20.99	20.72
		75	0	20.87	20.89	20.79
	64QAM	1	0	21.00	20.66	20.60
		1	37	21.02	20.79	20.80
		1	74	20.96	20.75	20.73
		36	0	19.93	20.10	19.77
		36	19	19.93	20.04	19.76
		36	39	20.06	20.05	19.75
		75	0	19.92	19.71	19.74
	256QAM	1	0	18.91	18.60	18.80
		1	37	18.92	18.71	18.73
		1	74	18.98	18.78	18.75
		36	0	18.03	17.90	17.67
		36	19	17.98	17.94	17.71
		36	39	18.09	18.08	17.75
		75	0	17.89	17.82	17.69

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132022	132322	132622
		Frequency (MHz)		1715	1745	1775
10M	QPSK	1	0	22.91	22.75	22.78
		1	24	23.10	22.85	22.77
		1	49	22.99	22.89	22.85
		25	0	22.10	21.95	21.70
		25	12	22.08	21.90	21.75
		25	25	22.07	22.01	21.77
		50	0	21.83	21.75	21.66
	16QAM	1	0	22.03	21.71	21.69
		1	24	22.09	21.88	21.70
		1	49	21.95	21.73	21.75
		25	0	20.94	21.10	20.66
		25	12	21.05	21.05	20.62
		25	25	21.04	20.98	20.70
		50	0	20.90	20.81	20.71
	64QAM	1	0	20.98	20.64	20.79
		1	24	21.10	20.84	20.89
		1	49	21.07	20.86	20.72
		25	0	20.01	20.08	19.67
		25	12	19.91	19.97	19.73
		25	25	19.94	19.91	19.64
		50	0	19.89	19.79	19.62
	256QAM	1	0	18.97	18.70	18.80
		1	24	19.00	18.73	18.76
		1	49	19.10	18.78	18.88
		25	0	18.01	18.10	17.62
		25	12	18.07	17.93	17.80
		25	25	17.93	17.92	17.63
		50	0	17.96	17.70	17.60

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		131997	132322	132647
		Frequency (MHz)		1712.5	1745	1777.5
5M	QPSK	1	0	22.95	22.78	22.74
		1	12	23.10	22.84	22.74
		1	24	23.10	22.70	22.70
		12	0	22.06	21.93	21.71
		12	6	22.03	21.94	21.62
		12	13	21.94	21.90	21.62
		25	0	21.98	21.77	21.80
	16QAM	1	0	21.92	21.75	21.80
		1	12	21.97	21.84	21.79
		1	24	21.99	21.87	21.86
		12	0	20.95	21.00	20.69
		12	6	21.10	21.06	20.77
		12	13	21.07	20.96	20.77
		25	0	20.98	20.88	20.65
	64QAM	1	0	20.98	20.63	20.71
		1	12	20.91	20.84	20.77
		1	24	21.10	20.85	20.74
		12	0	20.00	20.08	19.74
		12	6	19.96	20.07	19.64
		12	13	20.00	20.02	19.66
		25	0	19.97	19.70	19.68
	256QAM	1	0	19.03	18.74	18.61
		1	12	18.93	18.71	18.83
		1	24	18.95	18.88	18.76
		12	0	17.94	18.09	17.78
		12	6	17.90	17.95	17.75
		12	13	18.10	18.05	17.63
		25	0	17.88	17.82	17.62

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		131987	132322	132657
		Frequency (MHz)		1711.5	1745	1778.5
3M	QPSK	1	0	22.95	22.74	22.78
		1	7	23.10	22.73	22.66
		1	14	23.20	22.82	22.61
		8	0	22.06	21.94	21.60
		8	3	21.96	21.93	21.75
		8	7	22.10	22.09	21.70
		15	0	21.93	21.82	21.60
	16QAM	1	0	22.01	21.90	21.61
		1	7	22.06	21.86	21.61
		1	14	22.02	21.72	21.68
		8	0	20.97	21.06	20.69
		8	3	20.91	20.90	20.78
		8	7	20.98	21.00	20.79
		15	0	21.09	20.98	20.71
	64QAM	1	0	21.10	20.78	20.79
		1	7	21.04	20.80	20.77
		1	14	21.03	20.71	20.67
		8	0	20.02	20.00	19.71
		8	3	20.02	20.10	19.66
		8	7	20.06	20.03	19.68
		15	0	20.10	19.99	19.60
	256QAM	1	0	18.90	18.87	18.77
		1	7	19.17	18.83	18.69
		1	14	19.00	18.70	18.71
		8	0	17.98	18.02	17.60
		8	3	17.95	18.02	17.77
		8	7	18.08	18.08	17.63
		15	0	17.97	17.91	17.65

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		131979	132322	132665
		Frequency (MHz)		1710.7	1745	1779.3
1.4M	QPSK	1	0	23.08	22.78	22.67
		1	2	23.18	22.74	22.67
		1	5	23.05	22.78	22.68
		3	0	22.10	22.02	21.70
		3	1	21.91	22.00	21.64
		3	3	22.10	21.93	21.73
		6	0	22.03	21.83	21.78
	16QAM	1	0	21.99	21.81	21.75
		1	2	22.18	21.82	21.78
		1	5	22.11	21.82	21.73
		3	0	20.96	21.05	20.76
		3	1	20.98	20.91	20.75
		3	3	21.04	21.07	20.69
		6	0	21.07	20.89	20.69
	64QAM	1	0	20.90	20.85	20.64
		1	2	21.06	20.79	20.75
		1	5	21.20	20.79	20.74
		3	0	20.05	20.01	19.79
		3	1	20.08	19.92	19.68
		3	3	19.95	19.92	19.69
		6	0	20.09	19.91	19.65
	256QAM	1	0	18.91	18.84	18.69
		1	2	19.17	18.70	18.69
		1	5	19.11	18.74	18.70
		3	0	17.95	17.94	17.67
		3	1	17.98	17.91	17.80
		3	3	17.95	18.09	17.69
		6	0	17.92	17.80	17.76

ERP Power (dBm)

NR Band 5 (SCS 15kHz)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		166800	167300	167800
		Frequency (MHz)		834	836.5	839
20M	pi/2 BPSK	1	0	21.44	21.27	21.07
		1	53	21.99	21.82	21.62
		1	105	20.41	20.24	20.04
		53	0	21.53	21.36	21.16
		53	27	20.38	20.21	20.01
		53	53	21.28	21.11	20.91
		106	0	20.84	20.67	20.47
	QPSK	1	0	20.67	20.50	20.35
		1	53	21.68	21.51	21.36
		1	105	19.52	19.35	19.20
		53	0	20.67	20.50	20.35
		53	27	19.51	19.34	19.19
		53	53	21.09	20.92	20.77
		106	0	20.04	19.87	19.72
	16QAM	1	0	19.85	19.68	19.53
		1	53	20.82	20.65	20.50
		1	105	18.60	18.43	18.28
		53	0	19.78	19.61	19.46
		53	27	18.69	18.52	18.37
		53	53	20.08	19.91	19.76
		106	0	19.04	18.87	18.72
	64QAM	1	0	19.38	19.21	19.06
		1	53	19.05	18.88	18.73
		1	105	17.93	17.76	17.61
		53	0	19.21	19.04	18.89
		53	27	18.11	17.94	17.79
		53	53	18.49	18.32	18.17
		106	0	18.51	18.34	18.19
	256QAM	1	0	17.10	16.93	16.78
		1	53	17.19	17.02	16.87
		1	105	16.11	15.94	15.79
		53	0	17.15	16.98	16.83
		53	27	16.05	15.88	15.73
		53	53	16.48	16.31	16.16
		106	0	16.59	16.42	16.27

*ERP = Conducted + antenna gain - 2.15

NR Band 5 (SCS 15kHz)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		166300	167300	168300
		Frequency (MHz)		831.5	836.5	841.5
15M	pi/2 BPSK	1	0	21.36	21.20	21.05
		1	39	21.98	21.78	21.59
		1	78	20.37	20.19	20.02
		39	0	21.47	21.34	21.13
		39	19	20.36	20.13	20.00
		39	40	21.20	21.07	20.86
		79	0	20.81	20.61	20.45
	QPSK	1	0	20.66	20.45	20.27
		1	39	21.62	21.48	21.32
		1	78	19.46	19.27	19.18
		39	0	20.61	20.47	20.31
		39	19	19.49	19.27	19.14
		39	40	21.03	20.84	20.75
		79	0	20.03	19.85	19.64
	16QAM	1	0	19.78	19.60	19.47
		1	39	20.80	20.64	20.46
		1	78	18.52	18.39	18.23
		39	0	19.76	19.53	19.45
		39	19	18.61	18.48	18.32
		39	40	20.05	19.85	19.74
		79	0	19.02	18.80	18.67
	64QAM	1	0	19.32	19.13	19.04
		1	39	19.04	18.86	18.65
		1	78	17.90	17.70	17.59
		39	0	19.19	18.97	18.84
		39	19	18.04	17.86	17.73
		39	40	18.46	18.26	18.15
		79	0	18.49	18.27	18.14
	256QAM	1	0	17.04	16.85	16.76
		1	39	17.17	16.94	16.86
		1	78	16.09	15.86	15.78
		39	0	17.07	16.94	16.78
		39	19	16.02	15.82	15.71
		39	40	16.46	16.24	16.11
		79	0	16.53	16.34	16.25

*ERP = Conducted + antenna gain - 2.15

NR Band 5 (SCS 15kHz)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		165800	167300	168800
		Frequency (MHz)		829	836.5	844
10M	pi/2 BPSK	1	0	21.35	21.14	21.03
		1	26	21.93	21.71	21.54
		1	51	20.32	20.11	20.01
		26	0	21.42	21.27	21.08
		26	13	20.34	20.05	19.98
		26	26	21.15	20.99	20.85
		52	0	20.77	20.56	20.40
	QPSK	1	0	20.58	20.44	20.22
		1	26	21.58	21.43	21.31
		1	51	19.39	19.22	19.16
		26	0	20.53	20.45	20.26
		26	13	19.47	19.19	19.12
		26	26	20.95	20.78	20.67
		52	0	19.97	19.83	19.58
	16QAM	1	0	19.71	19.55	19.45
		1	26	20.74	20.57	20.41
		1	51	18.44	18.37	18.17
		26	0	19.68	19.52	19.43
		26	13	18.54	18.43	18.30
		26	26	19.97	19.83	19.68
		52	0	18.94	18.79	18.65
	64QAM	1	0	19.28	19.08	18.96
		1	26	18.96	18.85	18.63
		1	51	17.84	17.68	17.56
		26	0	19.13	18.95	18.78
		26	13	17.97	17.81	17.71
		26	26	18.40	18.19	18.10
		52	0	18.42	18.22	18.12
	256QAM	1	0	16.96	16.83	16.70
		1	26	17.09	16.93	16.84
		1	51	16.01	15.85	15.76
		26	0	17.02	16.89	16.74
		26	13	16.00	15.74	15.70
		26	26	16.38	16.23	16.09
		52	0	16.48	16.29	16.21

*ERP = Conducted + antenna gain - 2.15

NR Band 5 (SCS 15kHz)						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		165300	167300	169300
		Frequency (MHz)		826.5	836.5	846.5
5M	pi/2 BPSK	1	0	21.32	21.08	21.01
		1	12	21.91	21.64	21.49
		1	24	20.31	20.09	19.93
		12	0	21.37	21.19	21.02
		12	6	20.33	19.99	19.96
		12	13	21.10	20.97	20.78
		25	0	20.75	20.48	20.39
	QPSK	1	0	20.50	20.40	20.17
		1	12	21.56	21.35	21.30
		1	24	19.36	19.16	19.14
		12	0	20.51	20.38	20.21
		12	6	19.39	19.15	19.07
		12	13	20.92	20.72	20.65
		25	0	19.95	19.76	19.53
	16QAM	1	0	19.65	19.47	19.43
		1	12	20.73	20.55	20.33
		1	24	18.43	18.31	18.15
		12	0	19.63	19.45	19.38
		12	6	18.52	18.35	18.28
		12	13	19.92	19.75	19.67
		25	0	18.90	18.74	18.60
	64QAM	1	0	19.20	19.07	18.91
		1	12	18.92	18.80	18.62
		1	24	17.77	17.63	17.54
		12	0	19.05	18.93	18.73
		12	6	17.95	17.73	17.69
		12	13	18.33	18.14	18.08
		25	0	18.34	18.20	18.07
	256QAM	1	0	16.94	16.75	16.68
		1	12	17.01	16.87	16.76
		1	24	15.96	15.77	15.75
		12	0	16.98	16.84	16.69
		12	6	15.98	15.67	15.65
		12	13	16.32	16.18	16.07
		25	0	16.47	16.27	16.13

*ERP = Conducted + antenna gain - 2.15

EIRP Power (dBm)

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18700	18900	19100
		Frequency (MHz)		1860	1880	1900
20M	QPSK	1	0	26.01	25.68	25.53
		1	50	25.84	25.70	25.73
		1	99	25.92	25.76	25.74
		50	0	25.02	25.02	24.55
		50	25	24.83	25.01	24.70
		50	50	25.00	24.95	24.54
		100	0	24.73	24.78	24.57
	16QAM	1	0	24.88	24.54	24.60
		1	50	24.90	24.66	24.67
		1	99	24.99	24.70	24.65
		50	0	23.91	24.01	23.70
		50	25	23.95	23.94	23.61
		50	50	23.83	23.83	23.60
		100	0	23.91	23.70	23.67
	64QAM	1	0	23.85	23.65	23.59
		1	50	23.86	23.73	23.80
		1	99	24.00	23.63	23.70
		50	0	22.86	23.02	22.61
		50	25	22.95	22.84	22.66
		50	50	22.93	22.94	22.67
		100	0	22.89	22.80	22.60
	256QAM	1	0	21.82	21.54	21.57
		1	50	21.82	21.65	21.79
		1	99	21.98	21.65	21.78
		50	0	20.95	21.02	20.69
		50	25	20.92	20.84	20.72
		50	50	20.82	20.82	20.64
		100	0	20.75	20.63	20.72

*EIRP = Conducted + antenna gain

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18675	18900	19125
		Frequency (MHz)		1857.5	1880	1902.5
15M	QPSK	1	0	25.82	25.57	25.69
		1	37	25.94	25.71	25.78
		1	74	25.83	25.77	25.70
		36	0	24.95	24.97	24.70
		36	19	24.92	24.90	24.57
		36	39	25.01	24.87	24.68
		75	0	24.82	24.76	24.67
	16QAM	1	0	24.86	24.53	24.60
		1	37	25.02	24.72	24.79
		1	74	24.95	24.62	24.64
		36	0	24.00	23.91	23.63
		36	19	23.87	23.94	23.71
		36	39	23.93	24.02	23.62
		75	0	23.92	23.76	23.52
	64QAM	1	0	23.98	23.65	23.67
		1	37	23.82	23.68	23.80
		1	74	23.88	23.69	23.74
		36	0	22.93	22.84	22.64
		36	19	22.88	22.91	22.65
		36	39	22.86	22.96	22.71
		75	0	22.81	22.64	22.58
	256QAM	1	0	21.87	21.57	21.65
		1	37	21.91	21.71	21.67
		1	74	21.87	21.81	21.80
		36	0	20.92	20.85	20.62
		36	19	20.88	20.85	20.53
		36	39	20.97	20.84	20.69
		75	0	20.81	20.71	20.69

*EIRP = Conducted + antenna gain

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18650	18900	19150
		Frequency (MHz)		1855	1880	1905
10M	QPSK	1	0	25.93	25.68	25.63
		1	24	26.01	25.81	25.64
		1	49	25.84	25.79	25.79
		25	0	24.83	24.86	24.55
		25	12	24.83	24.88	24.65
		25	25	25.01	24.97	24.57
		50	0	24.83	24.81	24.62
	16QAM	1	0	24.82	24.63	24.59
		1	24	24.98	24.65	24.80
		1	49	24.95	24.65	24.72
		25	0	23.82	23.83	23.65
		25	12	23.98	23.99	23.60
		25	25	23.91	23.88	23.64
		50	0	23.79	23.64	23.52
	64QAM	1	0	23.85	23.59	23.54
		1	24	23.90	23.76	23.64
		1	49	23.82	23.72	23.77
		25	0	22.96	22.87	22.60
		25	12	22.90	22.99	22.59
		25	25	22.96	22.98	22.54
		50	0	22.91	22.76	22.55
	256QAM	1	0	21.82	21.63	21.65
		1	24	21.98	21.72	21.69
		1	49	22.02	21.81	21.73
		25	0	20.86	20.90	20.67
		25	12	21.01	21.01	20.57
		25	25	20.86	20.87	20.64
		50	0	20.83	20.63	20.62

*EIRP = Conducted + antenna gain

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18625	18900	19175
		Frequency (MHz)		1852.5	1880	1907.5
5M	QPSK	1	0	25.90	25.57	25.54
		1	12	25.93	25.64	25.67
		1	24	25.85	25.80	25.78
		12	0	24.94	24.99	24.55
		12	6	24.93	24.87	24.67
		12	13	24.92	24.84	24.70
		25	0	24.72	24.67	24.70
	16QAM	1	0	24.86	24.67	24.68
		1	12	24.84	24.82	24.80
		1	24	24.96	24.77	24.73
		12	0	23.99	23.99	23.54
		12	6	24.01	23.95	23.54
		12	13	23.96	23.87	23.54
		25	0	23.91	23.82	23.67
	64QAM	1	0	23.91	23.53	23.58
		1	12	23.90	23.69	23.64
		1	24	23.98	23.70	23.65
		12	0	22.98	22.92	22.57
		12	6	22.99	22.95	22.72
		12	13	22.85	23.02	22.64
		25	0	22.84	22.66	22.61
	256QAM	1	0	21.91	21.60	21.66
		1	12	21.86	21.70	21.66
		1	24	21.92	21.64	21.63
		12	0	20.89	20.92	20.57
		12	6	20.85	20.94	20.62
		12	13	20.97	21.00	20.71
		25	0	20.75	20.81	20.64

*EIRP = Conducted + antenna gain

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18615	18900	19185
		Frequency (MHz)		1851.5	1880	1908.5
3M	QPSK	1	0	25.91	25.56	25.68
		1	7	25.96	25.56	25.65
		1	14	25.92	25.68	25.76
		8	0	24.83	24.90	24.55
		8	3	24.82	24.88	24.66
		8	7	24.89	24.91	24.65
		15	0	24.79	24.69	24.64
	16QAM	1	0	24.96	24.69	24.55
		1	7	24.92	24.69	24.65
		1	14	24.93	24.74	24.70
		8	0	23.84	23.90	23.55
		8	3	23.85	23.76	23.55
		8	7	23.89	23.83	23.70
		15	0	23.76	23.55	23.71
	64QAM	1	0	23.82	23.69	23.59
		1	7	23.91	23.63	23.71
		1	14	23.95	23.67	23.64
		8	0	22.83	22.75	22.58
		8	3	22.96	22.85	22.63
		8	7	22.87	22.84	22.56
		15	0	22.78	22.71	22.71
	256QAM	1	0	21.92	21.54	21.64
		1	7	21.99	21.59	21.66
		1	14	22.01	21.77	21.75
		8	0	20.87	20.78	20.64
		8	3	20.83	20.78	20.64
		8	7	20.86	20.73	20.58
		15	0	20.87	20.62	20.64

*EIRP = Conducted + antenna gain

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18607	18900	19193
		Frequency (MHz)		1850.7	1880	1909.3
1.4M	QPSK	1	0	25.94	25.66	25.56
		1	2	26.01	25.59	25.60
		1	5	25.87	25.64	25.64
		3	0	24.98	24.73	24.57
		3	1	24.96	24.72	24.60
		3	3	24.75	24.86	24.53
		6	0	24.88	24.70	24.71
	16QAM	1	0	24.85	24.63	24.62
		1	2	24.86	24.52	24.57
		1	5	24.83	24.68	24.63
		3	0	23.92	23.83	23.65
		3	1	23.84	23.92	23.63
		3	3	23.78	23.92	23.66
		6	0	23.87	23.64	23.54
	64QAM	1	0	23.82	23.65	23.63
		1	2	23.85	23.52	23.66
		1	5	24.02	23.70	23.73
		3	0	23.02	22.89	22.53
		3	1	23.01	22.91	22.54
		3	3	22.92	22.88	22.59
		6	0	22.90	22.58	22.54
	256QAM	1	0	21.99	21.63	21.65
		1	2	21.93	21.64	21.64
		1	5	21.82	21.78	21.62
		3	0	20.87	20.74	20.66
		3	1	20.87	20.92	20.68
		3	3	20.88	20.88	20.66
		6	0	20.80	20.58	20.72

*EIRP = Conducted + antenna gain

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132072	132322	132575
		Frequency (MHz)		1720	1745	1770
20M	QPSK	1	0	26.67	26.18	26.09
		1	50	26.39	26.33	26.29
		1	99	26.45	26.18	26.32
		50	0	25.45	25.47	25.04
		50	25	25.42	25.51	25.20
		50	50	25.52	25.51	25.19
		100	0	25.35	25.15	25.06
	16QAM	1	0	25.43	25.08	25.09
		1	50	25.34	25.15	25.32
		1	99	25.43	25.30	25.32
		50	0	24.36	24.49	24.15
		50	25	24.43	24.40	24.05
		50	50	24.45	24.43	24.12
		100	0	24.32	24.28	24.12
	64QAM	1	0	24.37	24.22	24.17
		1	50	24.45	24.16	24.32
		1	99	24.37	24.21	24.22
		50	0	23.50	23.43	23.19
		50	25	23.35	23.42	23.21
		50	50	23.39	23.45	23.23
		100	0	23.41	23.14	23.13
	256QAM	1	0	22.50	22.14	22.07
		1	50	22.45	22.30	22.15
		1	99	22.42	22.29	22.31
		50	0	21.53	21.52	21.10
		50	25	21.54	21.45	21.12
		50	50	21.37	21.42	21.12
		100	0	21.29	21.24	21.23

*EIRP = Conducted + antenna gain

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132047	132322	132597
		Frequency (MHz)		1717.5	1745	1772.5
15M	QPSK	1	0	26.36	26.05	26.10
		1	37	26.38	26.18	26.21
		1	74	26.38	26.33	26.21
		36	0	25.48	25.34	25.08
		36	19	25.47	25.37	25.08
		36	39	25.38	25.54	25.20
		75	0	25.27	25.21	25.11
	16QAM	1	0	25.44	25.16	25.16
		1	37	25.44	25.31	25.17
		1	74	25.45	25.34	25.24
		36	0	24.46	24.54	24.09
		36	19	24.45	24.51	24.14
		36	39	24.40	24.43	24.16
		75	0	24.31	24.33	24.23
	64QAM	1	0	24.44	24.10	24.04
		1	37	24.46	24.23	24.24
		1	74	24.40	24.19	24.17
		36	0	23.37	23.54	23.21
		36	19	23.37	23.48	23.20
		36	39	23.50	23.49	23.19
		75	0	23.36	23.15	23.18
	256QAM	1	0	22.35	22.04	22.24
		1	37	22.36	22.15	22.17
		1	74	22.42	22.22	22.19
		36	0	21.47	21.34	21.11
		36	19	21.42	21.38	21.15
		36	39	21.53	21.52	21.19
		75	0	21.33	21.26	21.13

*EIRP = Conducted + antenna gain

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132022	132322	132622
		Frequency (MHz)		1715	1745	1775
10M	QPSK	1	0	26.35	26.19	26.22
		1	24	26.54	26.29	26.21
		1	49	26.43	26.33	26.29
		25	0	25.54	25.39	25.14
		25	12	25.52	25.34	25.19
		25	25	25.51	25.45	25.21
		50	0	25.27	25.19	25.10
	16QAM	1	0	25.47	25.15	25.13
		1	24	25.53	25.32	25.14
		1	49	25.39	25.17	25.19
		25	0	24.38	24.54	24.10
		25	12	24.49	24.49	24.06
		25	25	24.48	24.42	24.14
		50	0	24.34	24.25	24.15
	64QAM	1	0	24.42	24.08	24.23
		1	24	24.54	24.28	24.33
		1	49	24.51	24.30	24.16
		25	0	23.45	23.52	23.11
		25	12	23.35	23.41	23.17
		25	25	23.38	23.35	23.08
		50	0	23.33	23.23	23.06
	256QAM	1	0	22.41	22.14	22.24
		1	24	22.44	22.17	22.20
		1	49	22.54	22.22	22.32
		25	0	21.45	21.54	21.06
		25	12	21.51	21.37	21.24
		25	25	21.37	21.36	21.07
		50	0	21.40	21.14	21.04

*EIRP = Conducted + antenna gain

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		131997	132322	132647
		Frequency (MHz)		1712.5	1745	1777.5
5M	QPSK	1	0	26.39	26.22	26.18
		1	12	26.54	26.28	26.18
		1	24	26.54	26.14	26.14
		12	0	25.50	25.37	25.15
		12	6	25.47	25.38	25.06
		12	13	25.38	25.34	25.06
		25	0	25.42	25.21	25.24
	16QAM	1	0	25.36	25.19	25.24
		1	12	25.41	25.28	25.23
		1	24	25.43	25.31	25.30
		12	0	24.39	24.44	24.13
		12	6	24.54	24.50	24.21
		12	13	24.51	24.40	24.21
		25	0	24.42	24.32	24.09
	64QAM	1	0	24.42	24.07	24.15
		1	12	24.35	24.28	24.21
		1	24	24.54	24.29	24.18
		12	0	23.44	23.52	23.18
		12	6	23.40	23.51	23.08
		12	13	23.44	23.46	23.10
		25	0	23.41	23.14	23.12
	256QAM	1	0	22.47	22.18	22.05
		1	12	22.37	22.15	22.27
		1	24	22.39	22.32	22.20
		12	0	21.38	21.53	21.22
		12	6	21.34	21.39	21.19
		12	13	21.54	21.49	21.07
		25	0	21.32	21.26	21.06

*EIRP = Conducted + antenna gain

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		131987	132322	132657
		Frequency (MHz)		1711.5	1745	1778.5
3M	QPSK	1	0	26.39	26.18	26.22
		1	7	26.54	26.17	26.10
		1	14	26.64	26.26	26.05
		8	0	25.50	25.38	25.04
		8	3	25.40	25.37	25.19
		8	7	25.54	25.53	25.14
		15	0	25.37	25.26	25.04
	16QAM	1	0	25.45	25.34	25.05
		1	7	25.50	25.30	25.05
		1	14	25.46	25.16	25.12
		8	0	24.41	24.50	24.13
		8	3	24.35	24.34	24.22
		8	7	24.42	24.44	24.23
		15	0	24.53	24.42	24.15
	64QAM	1	0	24.54	24.22	24.23
		1	7	24.48	24.24	24.21
		1	14	24.47	24.15	24.11
		8	0	23.46	23.44	23.15
		8	3	23.46	23.54	23.10
		8	7	23.50	23.47	23.12
		15	0	23.54	23.43	23.04
	256QAM	1	0	22.34	22.31	22.21
		1	7	22.61	22.27	22.13
		1	14	22.44	22.14	22.15
		8	0	21.42	21.46	21.04
		8	3	21.39	21.46	21.21
		8	7	21.52	21.52	21.07
		15	0	21.41	21.35	21.09

*EIRP = Conducted + antenna gain

LTE Band 66						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		131979	132322	132665
		Frequency (MHz)		1710.7	1745	1779.3
1.4M	QPSK	1	0	26.52	26.22	26.11
		1	2	26.62	26.18	26.11
		1	5	26.49	26.22	26.12
		3	0	25.54	25.46	25.14
		3	1	25.35	25.44	25.08
		3	3	25.54	25.37	25.17
		6	0	25.47	25.27	25.22
	16QAM	1	0	25.43	25.25	25.19
		1	2	25.62	25.26	25.22
		1	5	25.55	25.26	25.17
		3	0	24.40	24.49	24.20
		3	1	24.42	24.35	24.19
		3	3	24.48	24.51	24.13
		6	0	24.51	24.33	24.13
	64QAM	1	0	24.34	24.29	24.08
		1	2	24.50	24.23	24.19
		1	5	24.64	24.23	24.18
		3	0	23.49	23.45	23.23
		3	1	23.52	23.36	23.12
		3	3	23.39	23.36	23.13
		6	0	23.53	23.35	23.09
	256QAM	1	0	22.35	22.28	22.13
		1	2	22.61	22.14	22.13
		1	5	22.55	22.18	22.14
		3	0	21.39	21.38	21.11
		3	1	21.42	21.35	21.24
		3	3	21.39	21.53	21.13
		6	0	21.36	21.24	21.20

*EIRP = Conducted + antenna gain

4.2 Modulation Characteristics Measurement

4.2.1 Limits of Modulation Characteristics

N/A

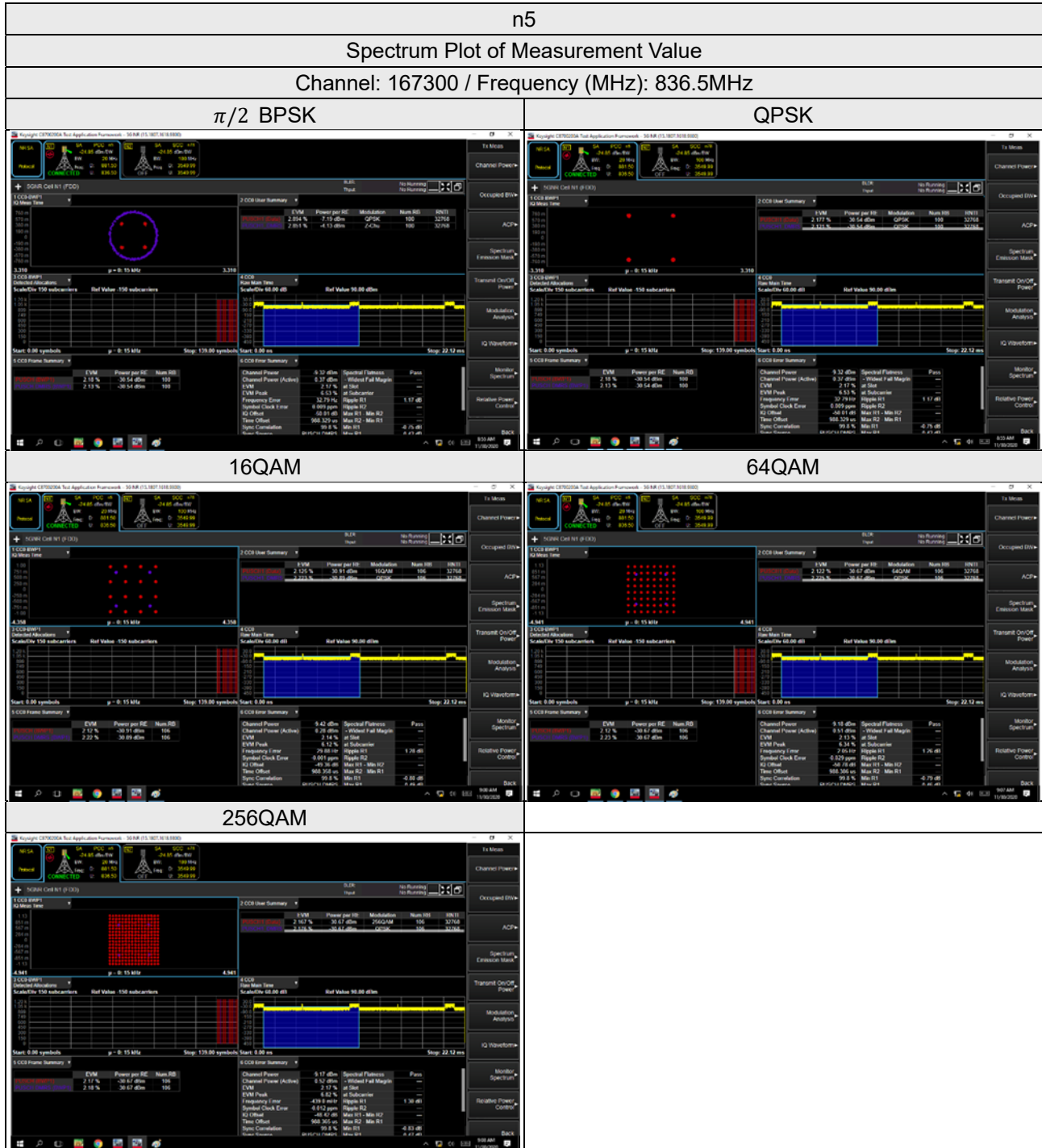
4.2.2 Test Procedure

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



4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stability Measurement

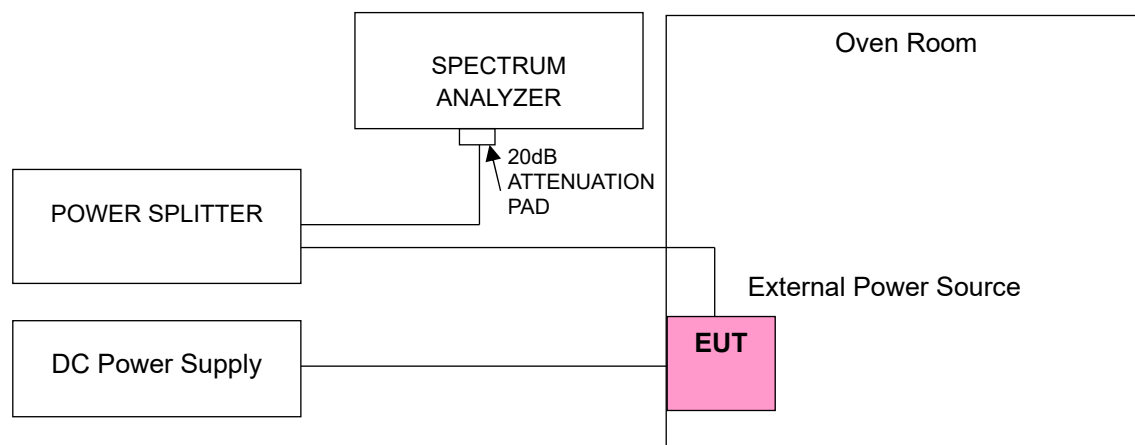
1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

4.3.2 Test Procedure

- 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.
- 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.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ 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 (Volts)	n5			
	Channel Bandwidth: 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	826.500003	0.003	846.500002	0.002
4.2	826.500004	0.004	846.500004	0.004
4.4	826.500002	0.003	846.500001	0.001

Note: The applicant defined the normal working voltage is from 4.2Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	n5			
	Channel Bandwidth: 5MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	826.500001	0.001	846.500003	0.003
-20	826.500002	0.003	846.500001	0.001
-10	826.500002	0.002	846.500003	0.004
0	826.500002	0.003	846.500002	0.003
10	826.500002	0.002	846.500003	0.004
20	826.499999	-0.002	846.499997	-0.003
30	826.499998	-0.003	846.499996	-0.005
40	826.499999	-0.002	846.499998	-0.003
50	826.499997	-0.003	846.499996	-0.004

Frequency Error vs. Voltage

Voltage (Volts)	n5			
	Channel Bandwidth: 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	829.000002	0.002	844.000001	0.001
4.2	829.000004	0.004	844.000002	0.002
4.4	829.000002	0.002	844.000001	0.002

Note: The applicant defined the normal working voltage is from 4.2Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	n5			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	829.000002	0.003	844.000004	0.005
-20	829.000002	0.002	844.000002	0.003
-10	829.000002	0.002	844.000004	0.004
0	829.000003	0.004	844.000003	0.003
10	829.000001	0.001	844.000002	0.003
20	828.999999	-0.002	843.999998	-0.002
30	828.999999	-0.002	843.999996	-0.004
40	828.999997	-0.003	843.999998	-0.003
50	828.999997	-0.004	843.999996	-0.004

Frequency Error vs. Voltage

Voltage (Volts)	n5			
	Channel Bandwidth: 15MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	831.500003	0.004	841.500003	0.004
4.2	831.500004	0.004	841.500002	0.002
4.4	831.500002	0.003	841.500004	0.005

Note: The applicant defined the normal working voltage is from 4.2Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	n5			
	Channel Bandwidth: 15MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	831.500004	0.005	841.500003	0.003
-20	831.500003	0.003	841.500004	0.004
-10	831.500002	0.002	841.500002	0.003
0	831.500002	0.002	841.500003	0.004
10	831.500002	0.002	841.500001	0.001
20	831.499997	-0.003	841.499999	-0.001
30	831.499997	-0.003	841.499998	-0.002
40	831.499998	-0.002	841.499996	-0.004
50	831.499999	-0.002	841.499999	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	n5			
	Channel Bandwidth: 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	834.000004	0.005	839.000002	0.002
4.2	834.000003	0.004	839.000003	0.003
4.4	834.000003	0.003	839.000003	0.004

Note: The applicant defined the normal working voltage is from 4.2Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	n5			
	Channel Bandwidth: 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	834.000003	0.004	839.000003	0.004
-20	834.000002	0.002	839.000001	0.002
-10	834.000003	0.003	839.000002	0.003
0	834.000001	0.002	839.000002	0.002
10	834.000002	0.003	839.000002	0.002
20	833.999997	-0.004	838.999998	-0.002
30	833.999998	-0.003	838.999997	-0.004
40	833.999998	-0.002	838.999999	-0.002
50	833.999998	-0.003	838.999996	-0.005

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 2			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	1850.700002	0.001	1909.300000	0.001
4.2	1850.700002	0.001	1909.300001	0.001
4.4	1850.700002	0.001	1909.300002	0.001

Note: The applicant defined the normal working voltage is from 4.2Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 2			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1850.700002	0.001	1909.300004	0.002
-20	1850.700002	0.001	1909.300004	0.002
-10	1850.700002	0.001	1909.300004	0.002
0	1850.700002	0.001	1909.300003	0.002
10	1850.700004	0.002	1909.300001	0.001
20	1850.699997	-0.002	1909.299996	-0.002
30	1850.699997	-0.002	1909.299997	-0.001
40	1850.699998	-0.001	1909.299996	-0.002
50	1850.699996	-0.002	1909.299999	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 2			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	1851.500003	0.002	1908.500002	0.001
4.2	1851.500002	0.001	1908.500004	0.002
4.4	1851.500003	0.002	1908.500003	0.001

Note: The applicant defined the normal working voltage is from 4.2Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 2			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1851.500001	0.001	1908.500003	0.002
-20	1851.500003	0.002	1908.500002	0.001
-10	1851.500003	0.001	1908.500001	0.001
0	1851.500001	0.001	1908.500001	0.001
10	1851.500004	0.002	1908.500001	0.001
20	1851.499998	-0.001	1908.499996	-0.002
30	1851.499996	-0.002	1908.499996	-0.002
40	1851.499997	-0.002	1908.499996	-0.002
50	1851.499997	-0.002	1908.499998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 2			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	1852.500003	0.001	1907.500002	0.001
4.2	1852.500002	0.001	1907.500004	0.002
4.4	1852.500001	0.001	1907.500003	0.002

Note: The applicant defined the normal working voltage is from 4.2Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 2			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1852.500004	0.002	1907.500002	0.001
-20	1852.500004	0.002	1907.500004	0.002
-10	1852.500003	0.001	1907.500004	0.002
0	1852.500001	0.001	1907.500001	0.001
10	1852.500002	0.001	1907.500003	0.002
20	1852.499997	-0.001	1907.499998	-0.001
30	1852.499997	-0.002	1907.499997	-0.002
40	1852.499997	-0.002	1907.499997	-0.001
50	1852.499996	-0.002	1907.499997	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 2			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	1855.000002	0.001	1905.000002	0.001
4.2	1855.000003	0.002	1905.000004	0.002
4.4	1855.000004	0.002	1905.000003	0.002

Note: The applicant defined the normal working voltage is from 4.2Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 2			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1855.000003	0.002	1905.000001	0.001
-20	1855.000002	0.001	1905.000002	0.001
-10	1855.000004	0.002	1905.000003	0.002
0	1855.000003	0.002	1905.000002	0.001
10	1855.000004	0.002	1905.000003	0.002
20	1854.999996	-0.002	1904.999999	-0.001
30	1854.999997	-0.002	1904.999998	-0.001
40	1854.999997	-0.002	1904.999996	-0.002
50	1854.999998	-0.001	1904.999996	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 2			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	1857.500003	0.002	1902.500002	0.001
4.2	1857.500002	0.001	1902.500003	0.001
4.4	1857.500003	0.002	1902.500001	0.001

Note: The applicant defined the normal working voltage is from 4.2Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 2			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1857.500004	0.002	1902.500001	0.001
-20	1857.500002	0.001	1902.500002	0.001
-10	1857.500002	0.001	1902.500002	0.001
0	1857.500004	0.002	1902.500003	0.002
10	1857.500003	0.002	1902.500003	0.001
20	1857.499998	-0.001	1902.499998	-0.001
30	1857.499998	-0.001	1902.499998	-0.001
40	1857.499998	-0.001	1902.499997	-0.002
50	1857.499999	-0.001	1902.499997	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 2			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	1860.000001	0.001	1900.000004	0.002
4.2	1860.000001	0.001	1900.000001	0.001
4.4	1860.000003	0.001	1900.000002	0.001

Note: The applicant defined the normal working voltage is from 4.2Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 2			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1860.000002	0.001	1900.000004	0.002
-20	1860.000003	0.002	1900.000003	0.002
-10	1860.000001	0.001	1900.000003	0.001
0	1860.000004	0.002	1900.000002	0.001
10	1860.000003	0.002	1900.000003	0.002
20	1859.999998	-0.001	1899.999999	-0.001
30	1859.999996	-0.002	1899.999999	-0.001
40	1859.999997	-0.002	1899.999998	-0.001
50	1859.999996	-0.002	1899.999998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	1710.700003	0.002	1779.300002	0.001
4.2	1710.700003	0.002	1779.300002	0.001
4.4	1710.700002	0.001	1779.300004	0.002

Note: The applicant defined the normal working voltage is from 4.2Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth: 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1710.700002	0.001	1779.300004	0.002
-20	1710.700004	0.002	1779.300004	0.002
-10	1710.700003	0.002	1779.300002	0.001
0	1710.700003	0.002	1779.300001	0.001
10	1710.700003	0.002	1779.300001	0.001
20	1710.699998	-0.001	1779.299997	-0.002
30	1710.699996	-0.002	1779.299996	-0.002
40	1710.699997	-0.002	1779.299997	-0.002
50	1710.699999	-0.001	1779.299996	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	1711.500003	0.002	1778.500002	0.001
4.2	1711.500004	0.002	1778.500002	0.001
4.4	1711.500001	0.001	1778.500003	0.002

Note: The applicant defined the normal working voltage is from 4.2Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth: 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1711.500004	0.002	1778.500003	0.002
-20	1711.500002	0.001	1778.500003	0.002
-10	1711.500002	0.001	1778.500002	0.001
0	1711.500001	0.001	1778.500003	0.002
10	1711.500002	0.001	1778.500002	0.001
20	1711.499998	-0.001	1778.499998	-0.001
30	1711.499997	-0.002	1778.499998	-0.001
40	1711.499997	-0.002	1778.499999	-0.001
50	1711.499996	-0.002	1778.499998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	1712.500002	0.001	1777.500002	0.001
4.2	1712.500001	0.001	1777.500001	0.001
4.4	1712.500004	0.002	1777.500003	0.002

Note: The applicant defined the normal working voltage is from 4.2Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1712.500001	0.001	1777.500003	0.001
-20	1712.500003	0.001	1777.500002	0.001
-10	1712.500001	0.001	1777.500003	0.002
0	1712.500003	0.002	1777.500003	0.001
10	1712.500001	0.001	1777.500004	0.002
20	1712.499998	-0.001	1777.499997	-0.001
30	1712.499998	-0.001	1777.499998	-0.001
40	1712.499998	-0.001	1777.499997	-0.002
50	1712.499998	-0.001	1777.499998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	1715.000004	0.002	1775.000001	0.001
4.2	1715.000004	0.002	1775.000002	0.001
4.4	1715.000004	0.002	1775.000003	0.001

Note: The applicant defined the normal working voltage is from 4.2Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1715.000003	0.002	1775.000001	0.001
-20	1715.000004	0.002	1775.000002	0.001
-10	1715.000002	0.001	1775.000002	0.001
0	1715.000002	0.001	1775.000003	0.002
10	1715.000002	0.001	1775.000001	0.001
20	1714.999997	-0.002	1774.999997	-0.002
30	1714.999997	-0.002	1774.999997	-0.002
40	1714.999997	-0.002	1774.999996	-0.002
50	1714.999997	-0.002	1774.999998	-0.001

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	1717.500003	0.002	1772.500003	0.002
4.2	1717.500004	0.002	1772.500002	0.001
4.4	1717.500003	0.002	1772.500001	0.001

Note: The applicant defined the normal working voltage is from 4.2Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1717.500004	0.002	1772.500003	0.002
-20	1717.500001	0.001	1772.500003	0.002
-10	1717.500002	0.001	1772.500002	0.001
0	1717.500002	0.001	1772.500001	0.001
10	1717.500003	0.001	1772.500004	0.002
20	1717.499999	-0.001	1772.499997	-0.002
30	1717.499996	-0.002	1772.499996	-0.002
40	1717.499999	-0.001	1772.499996	-0.002
50	1717.499998	-0.001	1772.499997	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 66			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
4.0	1720.000003	0.002	1770.000003	0.002
4.2	1720.000002	0.001	1770.000003	0.002
4.4	1720.000002	0.001	1770.000003	0.002

Note: The applicant defined the normal working voltage is from 4.2Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 66			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	1720.000001	0.001	1770.000002	0.001
-20	1720.000004	0.002	1770.000001	0.001
-10	1720.000002	0.001	1770.000004	0.002
0	1720.000004	0.002	1770.000002	0.001
10	1720.000002	0.001	1770.000003	0.002
20	1719.999999	-0.001	1769.999998	-0.001
30	1719.999996	-0.002	1769.999998	-0.001
40	1719.999997	-0.002	1769.999996	-0.002
50	1719.999997	-0.002	1769.999998	-0.001

4.4 Occupied Bandwidth Measurement

4.4.1 Limits of Occupied Bandwidth Measurement

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to sampling. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

4.4.2 Test Procedure

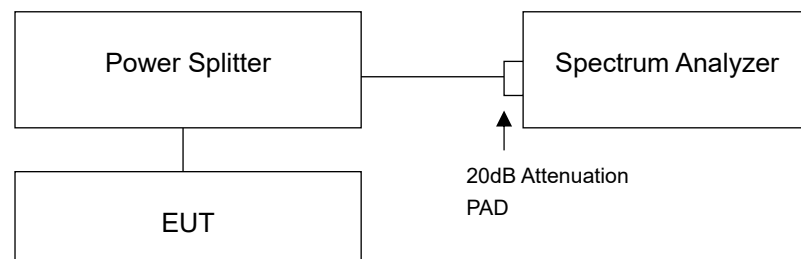
Occupied Bandwidth

- The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer. Measurement method refers to ANSI C63.26 section 5.4.4.
- Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

26dBc Bandwidth:

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

4.4.3 Test Setup



4.4.4 Test Result

Occupied Bandwidth

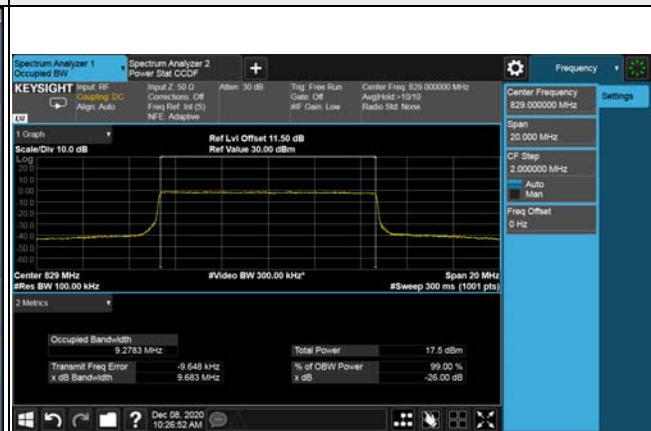
n5, Channel Bandwidth: 5MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
165300	826.5	4.48	4.43	4.45	4.46	4.46
167300	836.5	4.49	4.46	4.45	4.46	4.46
169300	846.5	4.49	4.45	4.45	4.46	4.45
n5, Channel Bandwidth: 10MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
165800	829.0	8.98	9.13	9.27	9.27	9.27
167300	836.5	8.99	9.16	9.27	9.27	9.27
168800	844.0	8.98	9.09	9.26	9.26	9.27
n5, Channel Bandwidth: 15MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
166300	831.5	13.48	14.08	14.08	14.08	14.07
167300	836.5	13.51	14.05	14.08	14.08	14.07
168300	841.5	13.50	14.02	14.07	14.07	14.07
n5, Channel Bandwidth: 20MHz						
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
166800	834.0	17.99	18.98	18.89	18.88	18.90
167300	836.5	17.99	18.93	18.89	18.88	18.90
167800	839.0	17.97	18.95	18.88	18.88	18.89

Spectrum Plot of Worst Value

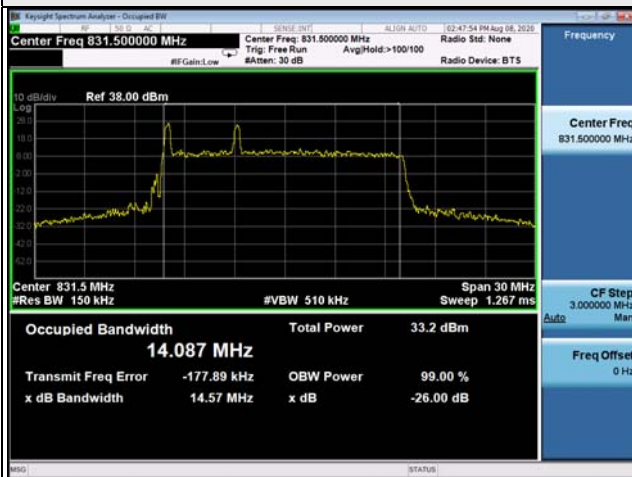
5MHz / $\pi/2$ BPSK



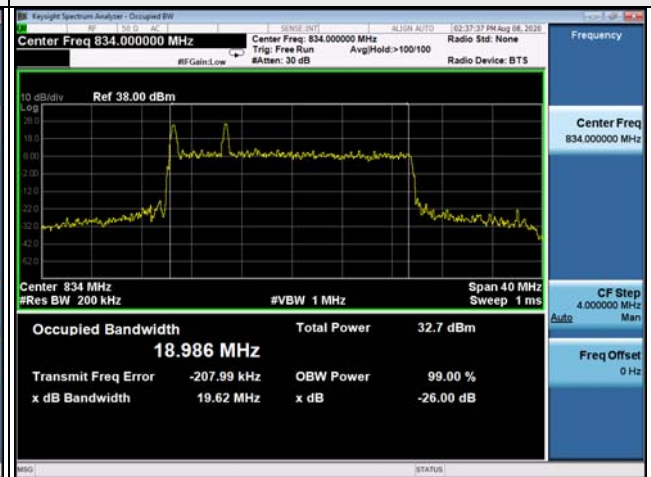
10MHz / 256QAM



15MHz / QPSK



20MHz / QPSK



LTE Band 2, Channel Bandwidth: 1.4MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18607	1850.7	1.09	1.09	1.08	1.08
18900	1880.0	1.09	1.08	1.09	1.08
19193	1909.3	1.09	1.09	1.08	1.09
LTE Band 2, Channel Bandwidth: 3MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18615	1851.5	2.68	2.69	2.68	2.68
18900	1880.0	2.69	2.69	2.68	2.69
19185	1908.5	2.68	2.69	2.68	2.69
LTE Band 2, Channel Bandwidth: 5MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18625	1852.5	4.50	4.50	4.49	4.50
18900	1880.0	4.50	4.49	4.49	4.50
19175	1907.5	4.49	4.50	4.49	4.49
LTE Band 2, Channel Bandwidth: 10MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18650	1855.0	8.97	8.97	8.96	8.97
18900	1880.0	8.98	8.97	8.97	8.97
19150	1905.0	8.98	8.97	8.96	8.96
LTE Band 2, Channel Bandwidth: 15MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18675	1857.5	13.43	13.43	13.42	13.42
18900	1880.0	13.45	13.44	13.44	13.44
19125	1902.5	13.45	13.44	13.44	13.43

LTE Band 2, Channel Bandwidth: 20MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18700	1860.0	17.94	17.94	17.94	17.93
18900	1880.0	17.96	17.96	17.96	17.96
19100	1900.0	17.95	17.96	17.96	17.96

Spectrum Plot of Worst Value

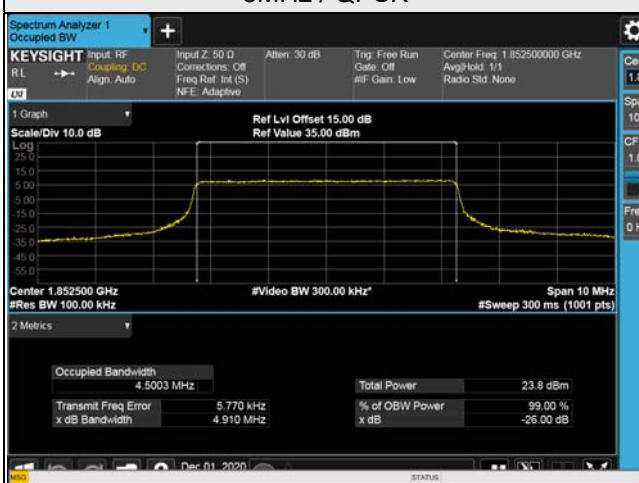
1.4MHz / QPSK



3MHz / 16QAM



5MHz / QPSK



10MHz / QPSK



15MHz / QPSK



20MHz / 64QAM

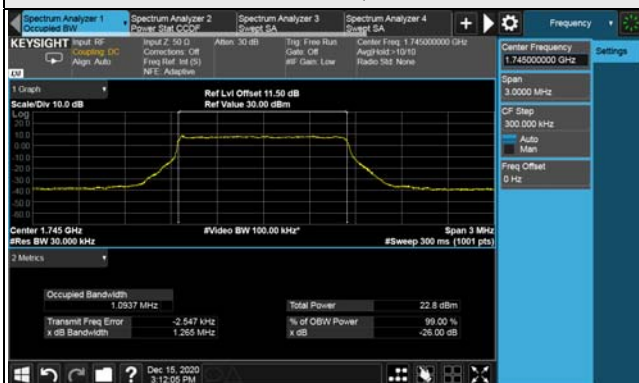


LTE Band 66, Channel Bandwidth: 1.4MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
131979	1710.7	1.09	1.09	1.09	1.09
132322	1745.0	1.09	1.09	1.09	1.09
132665	1779.3	1.09	1.09	1.09	1.09
LTE Band 66, Channel Bandwidth: 3MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
131987	1711.5	2.69	2.69	2.68	2.69
132322	1745.0	2.68	2.68	2.68	2.69
132657	1778.5	2.69	2.69	2.68	2.69
LTE Band 66, Channel Bandwidth: 5MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
131997	1712.5	4.50	4.50	4.50	4.50
132322	1745.0	4.50	4.50	4.50	4.50
132647	1777.5	4.49	4.50	4.49	4.50
LTE Band 66, Channel Bandwidth: 10MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
132022	1715.0	8.97	8.97	8.98	8.99
132322	1745.0	8.98	8.98	8.98	8.98
132622	1775.0	8.97	8.98	8.97	8.98
LTE Band 66, Channel Bandwidth: 15MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
132047	1717.5	13.45	13.44	13.44	13.44
132322	1745.0	13.46	13.45	13.44	13.44
132597	1772.5	13.45	13.44	13.44	13.44

LTE Band 66, Channel Bandwidth: 20MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
132072	1720.0	17.97	17.97	17.97	17.96
132322	1745.0	17.97	17.98	17.97	17.97
132572	1770.0	17.96	17.97	17.95	17.95

Spectrum Plot of Worst Value

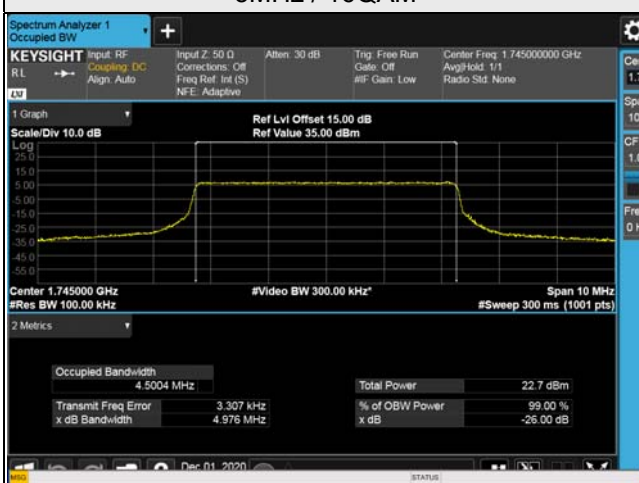
1.4MHz / QPSK



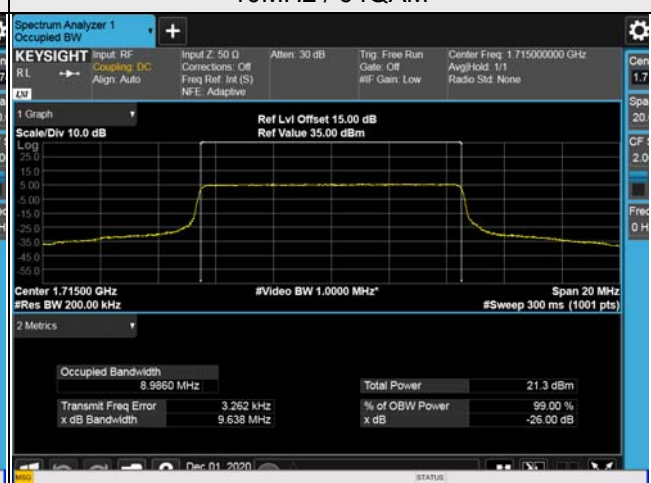
3MHz / 256QAM



5MHz / 16QAM



10MHz / 64QAM



15MHz / QPSK



20MHz / 16QAM

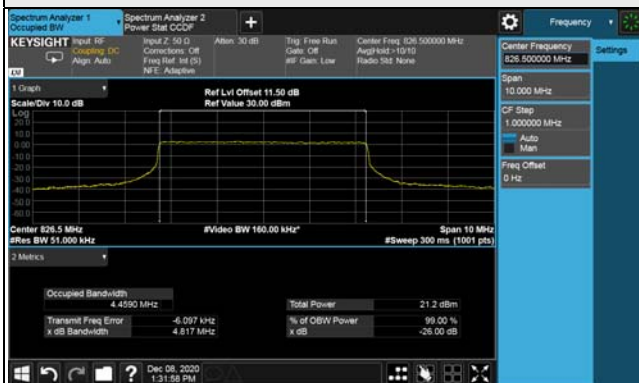


26dB Bandwidth

n5, Channel Bandwidth: 5MHz						
Channel	Frequency (MHz)	26dB Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
165300	826.5	4.75	4.71	4.81	4.77	4.81
167300	836.5	4.70	4.62	4.81	4.77	4.80
169300	846.5	4.71	4.68	4.79	4.76	4.79
n5, Channel Bandwidth: 10MHz						
Channel	Frequency (MHz)	26dB Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
165800	829.0	9.29	9.57	9.75	9.73	9.68
167300	836.5	9.39	9.47	9.75	9.69	9.67
168800	844.0	9.44	9.37	9.71	9.71	9.66
n5, Channel Bandwidth: 15MHz						
Channel	Frequency (MHz)	26dB Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
166300	831.5	14.10	14.57	14.62	14.67	14.63
167300	836.5	13.85	14.51	14.61	14.67	14.62
168300	841.5	14.11	14.52	14.61	14.67	14.61
n5, Channel Bandwidth: 20MHz						
Channel	Frequency (MHz)	26dB Bandwidth (MHz)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
166800	834.0	18.68	19.62	19.62	19.61	19.66
167300	836.5	18.81	19.84	19.65	19.61	19.64
167800	839.0	18.70	19.71	19.61	19.60	19.64

Spectrum Plot of Worst Value

5MHz / 16QAM



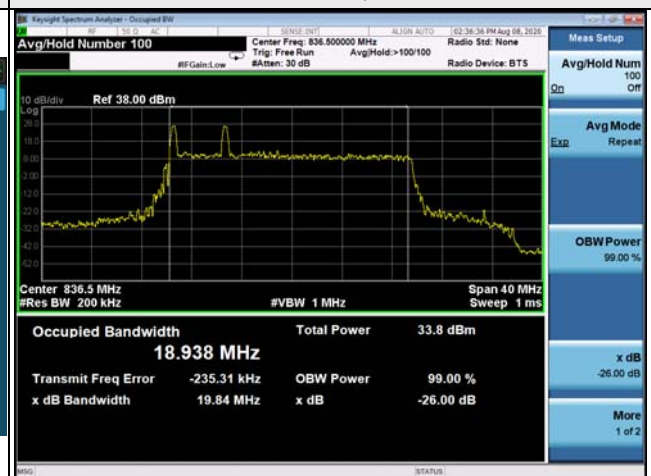
10MHz / 16QAM



15MHz / 64QAM



20MHz / QPSK



LTE Band 2, Channel Bandwidth: 1.4MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18607	1850.7	1.26	1.26	1.27	1.28
18900	1880.0	1.27	1.27	1.27	1.28
19193	1909.3	1.26	1.26	1.27	1.27
LTE Band 2, Channel Bandwidth: 3MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18615	1851.5	2.92	2.93	2.94	2.95
18900	1880.0	2.93	2.94	2.94	2.95
19185	1908.5	2.87	2.92	2.94	2.96
LTE Band 2, Channel Bandwidth: 5MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18625	1852.5	4.91	4.94	4.93	4.93
18900	1880.0	4.93	4.92	4.94	4.91
19175	1907.5	4.96	4.95	4.94	4.93
LTE Band 2, Channel Bandwidth: 10MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18650	1855.0	9.60	9.60	9.57	9.59
18900	1880.0	9.60	9.59	9.57	9.65
19150	1905.0	9.57	9.62	9.66	9.59
LTE Band 2, Channel Bandwidth: 15MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18675	1857.5	14.25	14.28	14.26	14.28
18900	1880.0	14.28	14.28	14.32	14.28
19125	1902.5	14.28	14.29	14.29	14.27

LTE Band 2, Channel Bandwidth: 20MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
18700	1860.0	19.08	19.06	19.06	19.05
18900	1880.0	19.10	19.09	19.09	19.08
19100	1900.0	19.14	19.07	19.10	19.09

Spectrum Plot of Worst Value

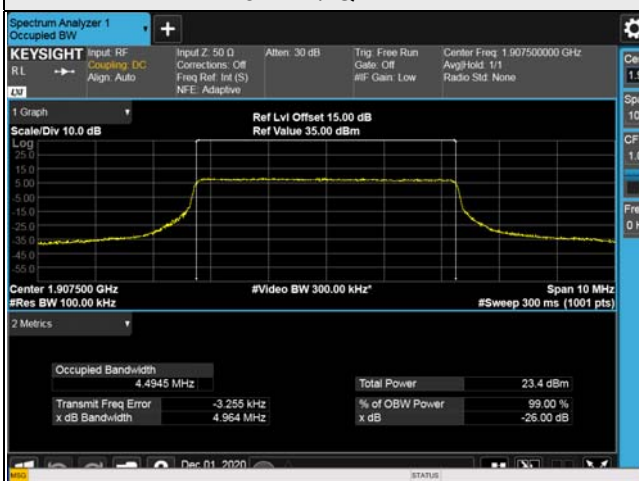
1.4MHz / 256QAM



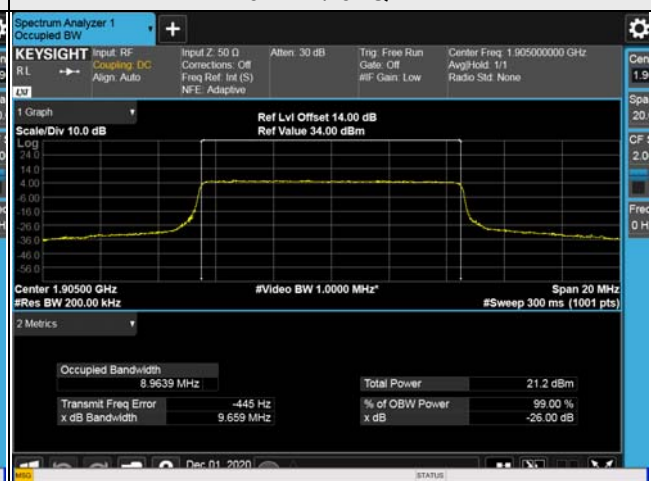
3MHz / 256QAM



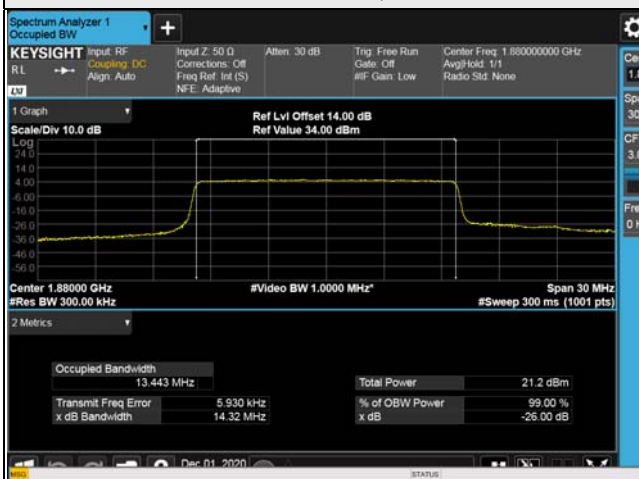
5MHz / QPSK



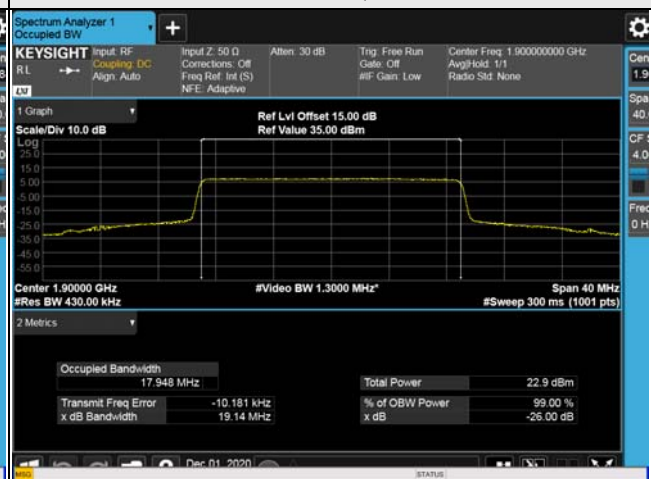
10MHz / 64QAM



15MHz / 64QAM



20MHz / QPSK

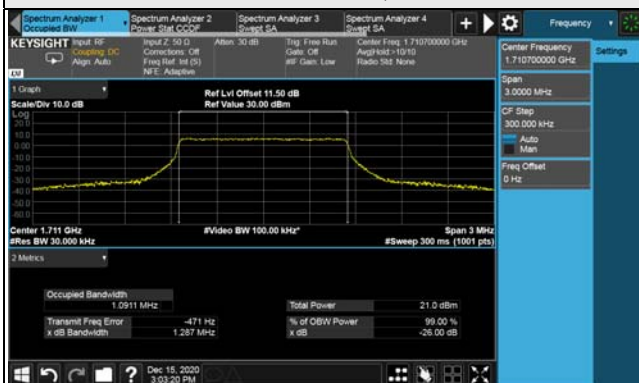


LTE Band 66, Channel Bandwidth: 1.4MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
131979	1710.7	1.28	1.28	1.29	1.28
132322	1745.0	1.27	1.27	1.29	1.27
132665	1779.3	1.26	1.28	1.28	1.26
LTE Band 66, Channel Bandwidth: 3MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
131987	1711.5	2.94	2.93	2.95	2.92
132322	1745.0	2.93	2.91	2.93	2.91
132657	1778.5	2.93	2.94	2.95	2.94
LTE Band 66, Channel Bandwidth: 5MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
131997	1712.5	4.97	4.99	4.95	4.94
132322	1745.0	4.91	4.98	4.93	4.95
132647	1777.5	4.91	4.96	4.92	4.94
LTE Band 66, Channel Bandwidth: 10MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
132022	1715.0	9.60	9.56	9.64	9.64
132322	1745.0	9.61	9.62	9.64	9.64
132622	1775.0	9.59	9.58	9.58	9.62
LTE Band 66, Channel Bandwidth: 15MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
132047	1717.5	14.31	14.25	14.29	14.29
132322	1745.0	14.28	14.31	14.35	14.32
132597	1772.5	14.28	14.29	14.29	14.29

LTE Band 66, Channel Bandwidth: 20MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
132072	1720.0	19.08	19.06	19.05	19.05
132322	1745.0	19.09	19.08	19.06	19.06
132572	1770.0	19.08	19.07	19.05	19.06

Spectrum Plot of Worst Value

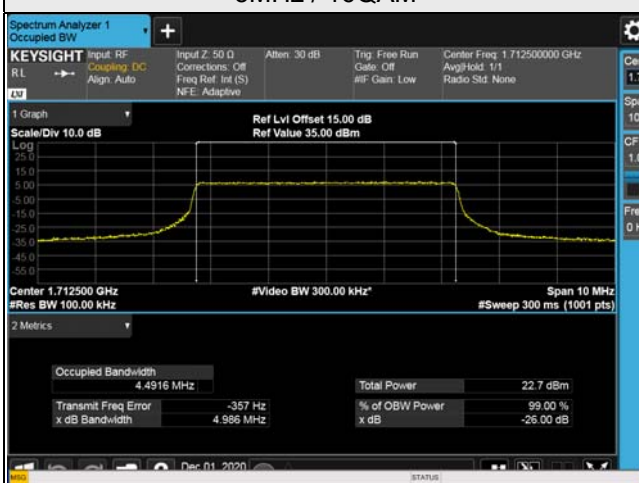
1.4MHz / 64QAM



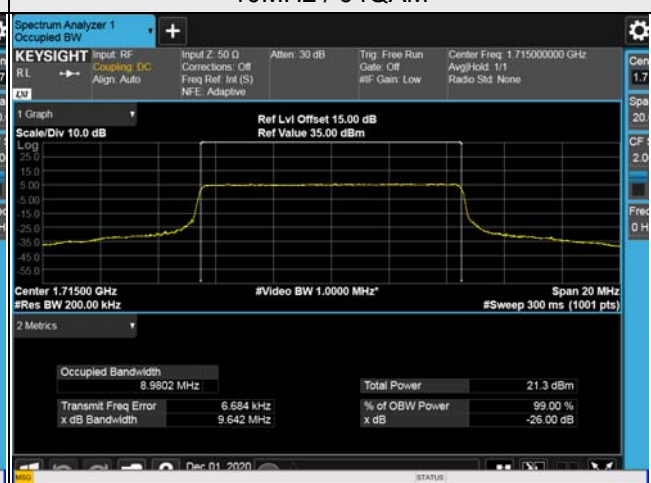
3MHz / 64QAM



5MHz / 16QAM



10MHz / 64QAM



15MHz / 64QAM



20MHz / QPSK



4.5 Band Edge Measurement

4.5.1 Limits of Band Edge Measurement

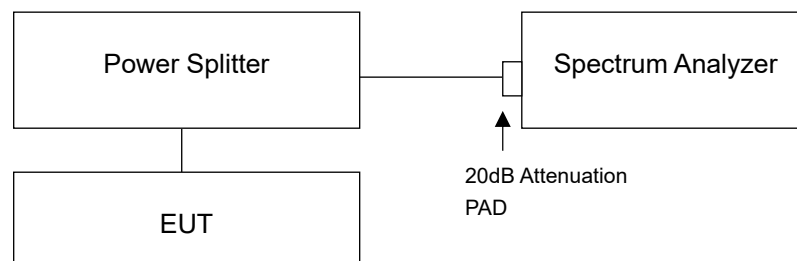
For n5, LTE Band 2:

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.

For LTE Band 66:

According to FCC 27.53(h) for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log(P)$ dB.

4.5.2 Test Setup

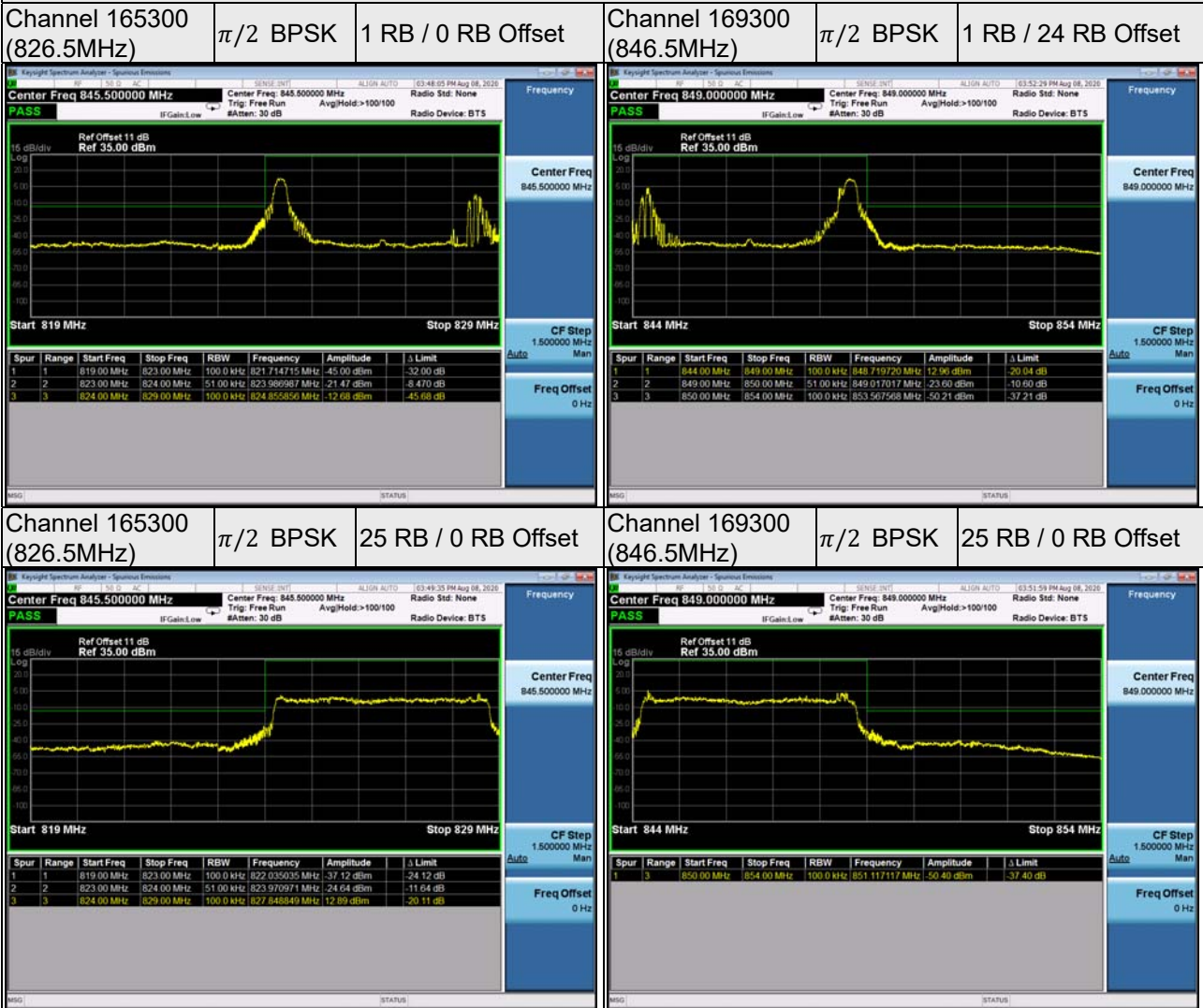


4.5.3 Test Procedures

- All measurements were done at low and high operational frequency range.
- The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 30kHz and VB of the spectrum is 100kHz (Channel Bandwidth: 1.4MHz).
- The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 30kHz and VB of the spectrum is 100kHz (Channel Bandwidth: 3MHz).
- 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 (Channel Bandwidth: 5MHz).
- The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (Channel Bandwidth: 10MHz).
- The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 150kHz and VB of the spectrum is 470kHz (Channel Bandwidth: 15MHz).
- The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 200kHz and VB of the spectrum is 1MHz (Channel Bandwidth: 20MHz).
- Record the max trace plot into the test report.

4.5.4 Test Results

n5, Channel Bandwidth: 5MHz



n5, Channel Bandwidth: 10MHz

Channel 165800
(829.0MHz)

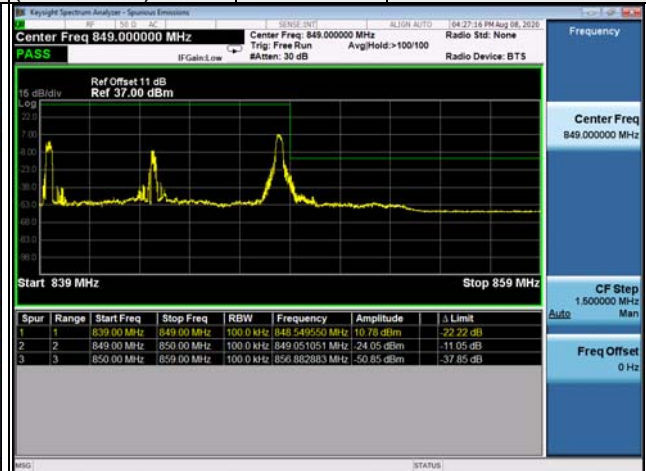
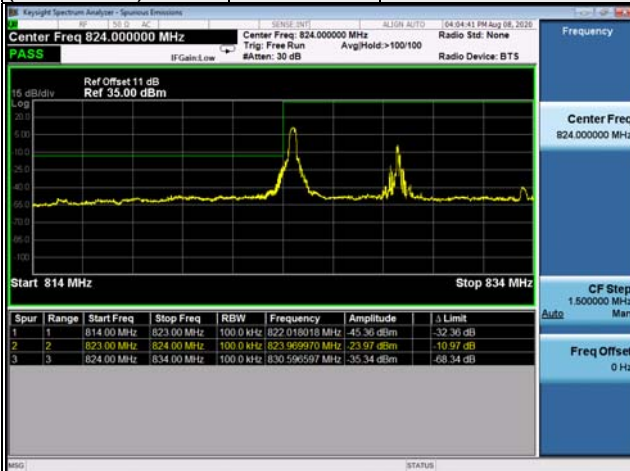
$\pi/2$ BPSK

1 RB / 0 RB Offset

Channel 168800
(844.0MHz)

$\pi/2$ BPSK

1 RB / 51 RB Offset



Channel 165800
(829.0MHz)

$\pi/2$ BPSK

52 RB / 0 RB Offset

Channel 168800
(844.0MHz)

$\pi/2$ BPSK

52 RB / 0 RB Offset



n5, Channel Bandwidth: 15MHz

Channel 166300
(831.5MHz)

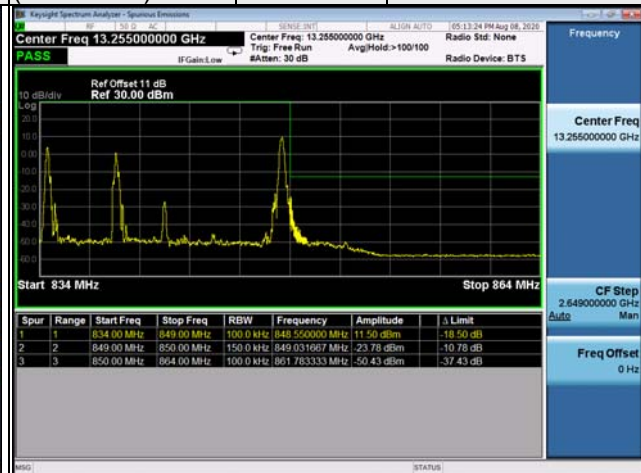
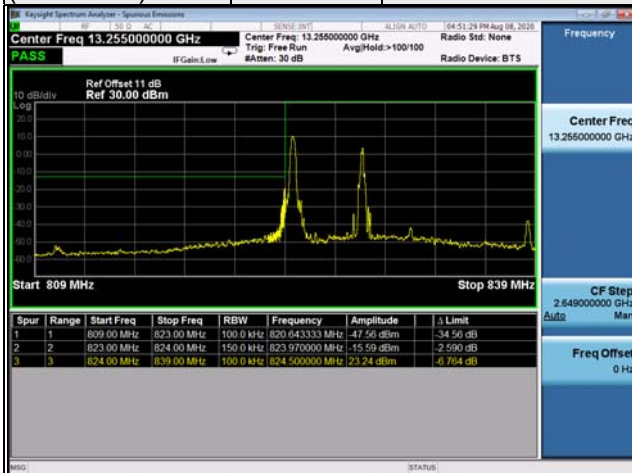
$\pi/2$ BPSK

1 RB / 0 RB Offset

Channel 168300
(841.5MHz)

$\pi/2$ BPSK

1 RB / 78 RB Offset



Channel 166300
(831.5MHz)

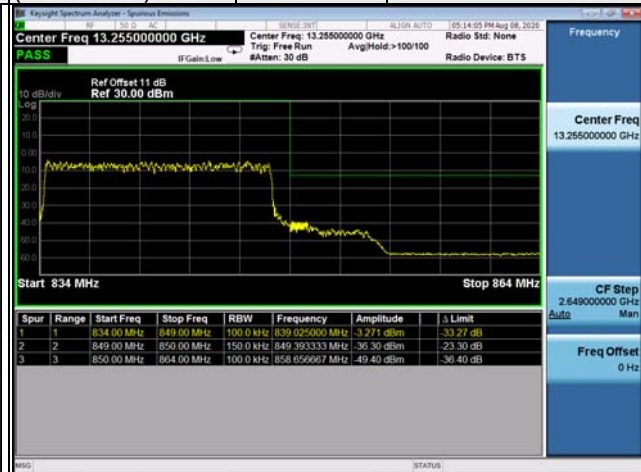
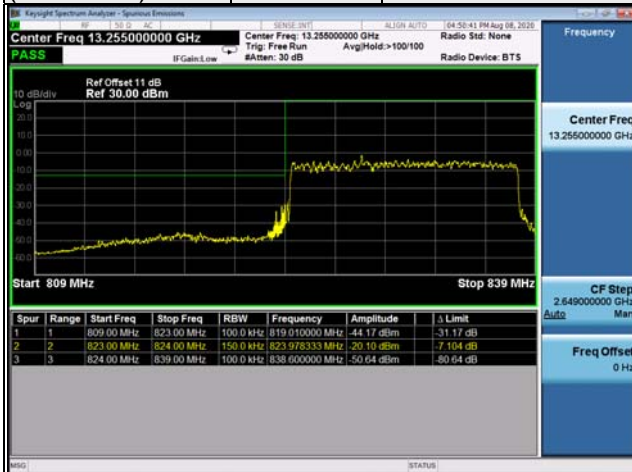
$\pi/2$ BPSK

79 RB / 0 RB Offset

Channel 168300
(841.5MHz)

$\pi/2$ BPSK

79 RB / 0 RB Offset



n5, Channel Bandwidth: 20MHz

Channel 166800
(834.0MHz)

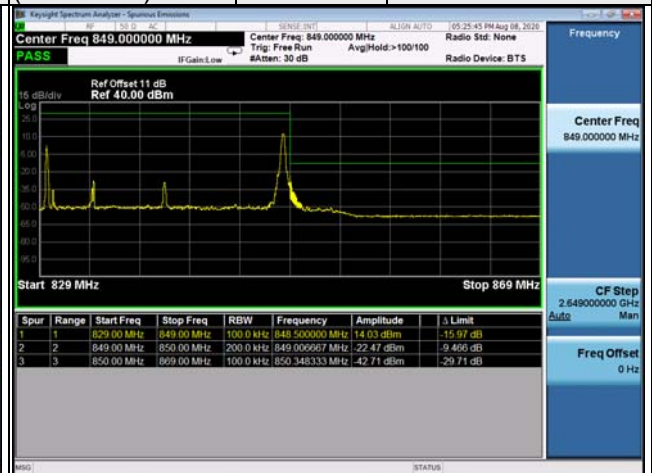
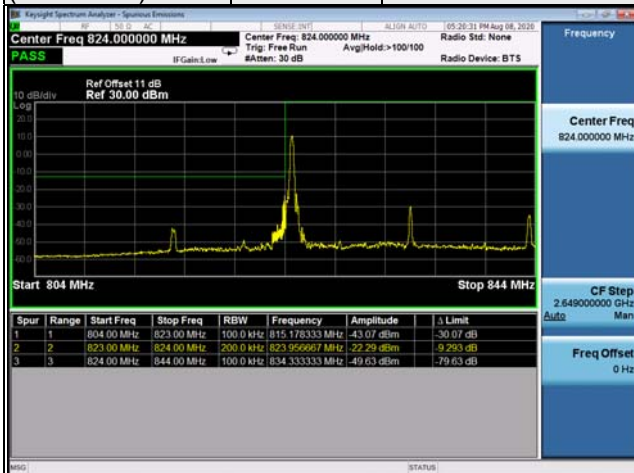
$\pi/2$ BPSK

1 RB / 0 RB Offset

Channel 167800
(839.0MHz)

$\pi/2$ BPSK

1 RB / 105 RB Offset



Channel 166800
(834.0MHz)

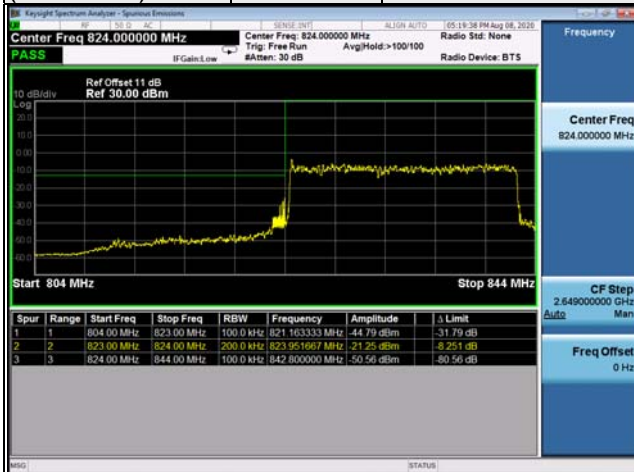
$\pi/2$ BPSK

106 RB / 0 RB Offset

Channel 167800
(839.0MHz)

$\pi/2$ BPSK

106 RB / 0 RB Offset



LTE Band 2, Channel Bandwidth: 1.4MHz

Channel 18607
(1850.70MHz)

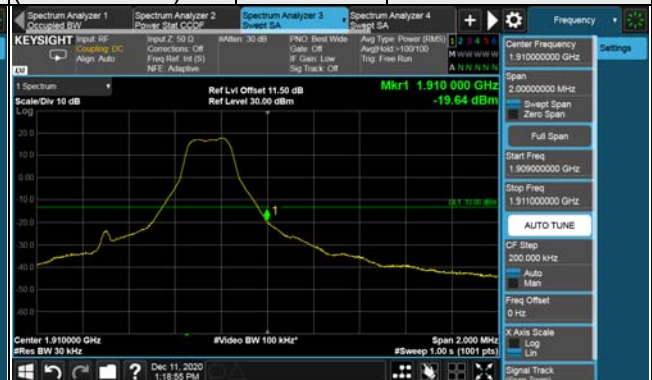
QPSK

1 RB / 0 RB Offset

Channel 19193
(1909.30MHz)

QPSK

1 RB / 5 RB Offset



Channel 18607
(1850.70MHz)

QPSK

6 RB / 0 RB Offset

Channel 19193
(1909.30MHz)

QPSK

6 RB / 0 RB Offset



LTE Band 2, Channel Bandwidth: 3MHz

Channel 18615
(1851.50MHz)

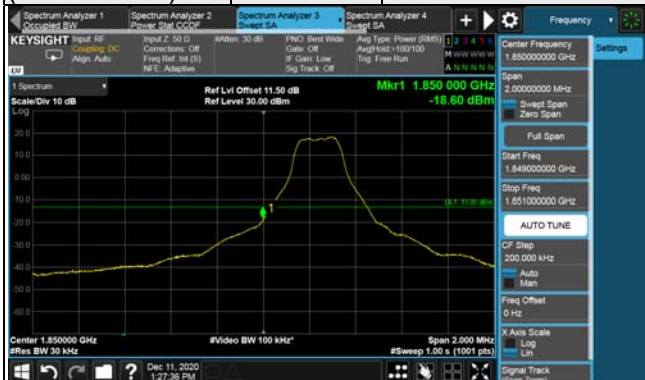
QPSK

1 RB / 0 RB Offset

Channel 19185
(1908.50MHz)

QPSK

1 RB / 14 RB Offset



Channel 18615
(1851.50MHz)

QPSK

15 RB / 0 RB Offset

Channel 19185
(1908.50MHz)

QPSK

15 RB / 0 RB Offset



LTE Band 2, Channel Bandwidth: 5MHz

Channel 18625
(1852.50MHz)

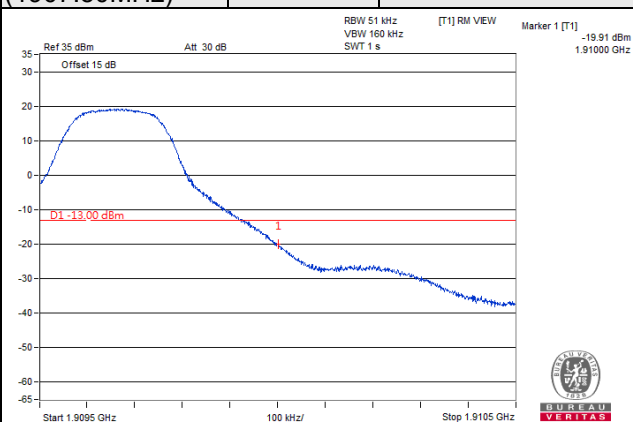
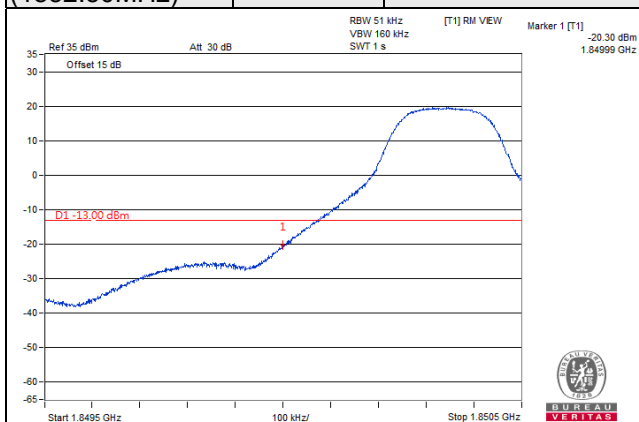
QPSK

1 RB / 0 RB Offset

Channel 19175
(1907.50MHz)

QPSK

1 RB / 24 RB Offset



Channel 18625
(1852.50MHz)

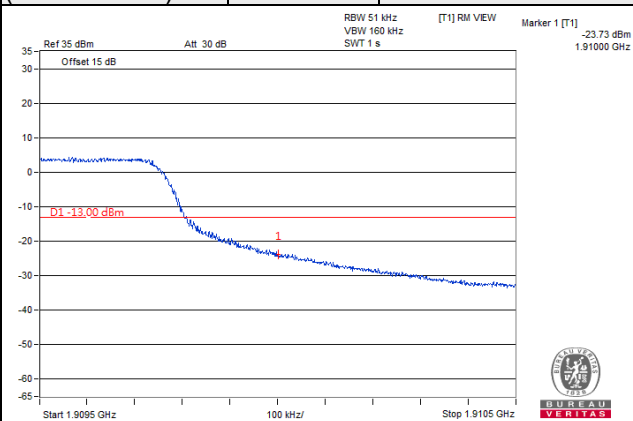
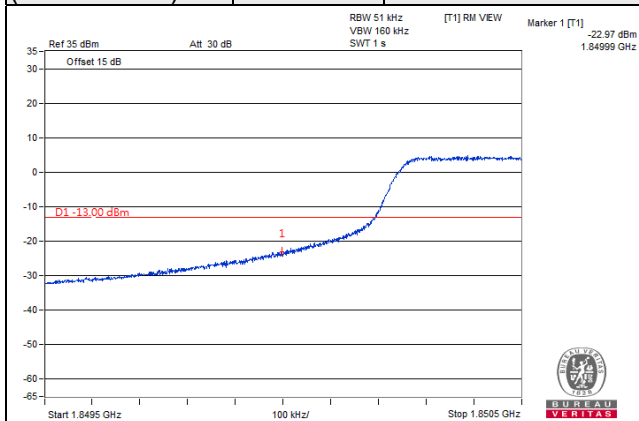
QPSK

25 RB / 0 RB Offset

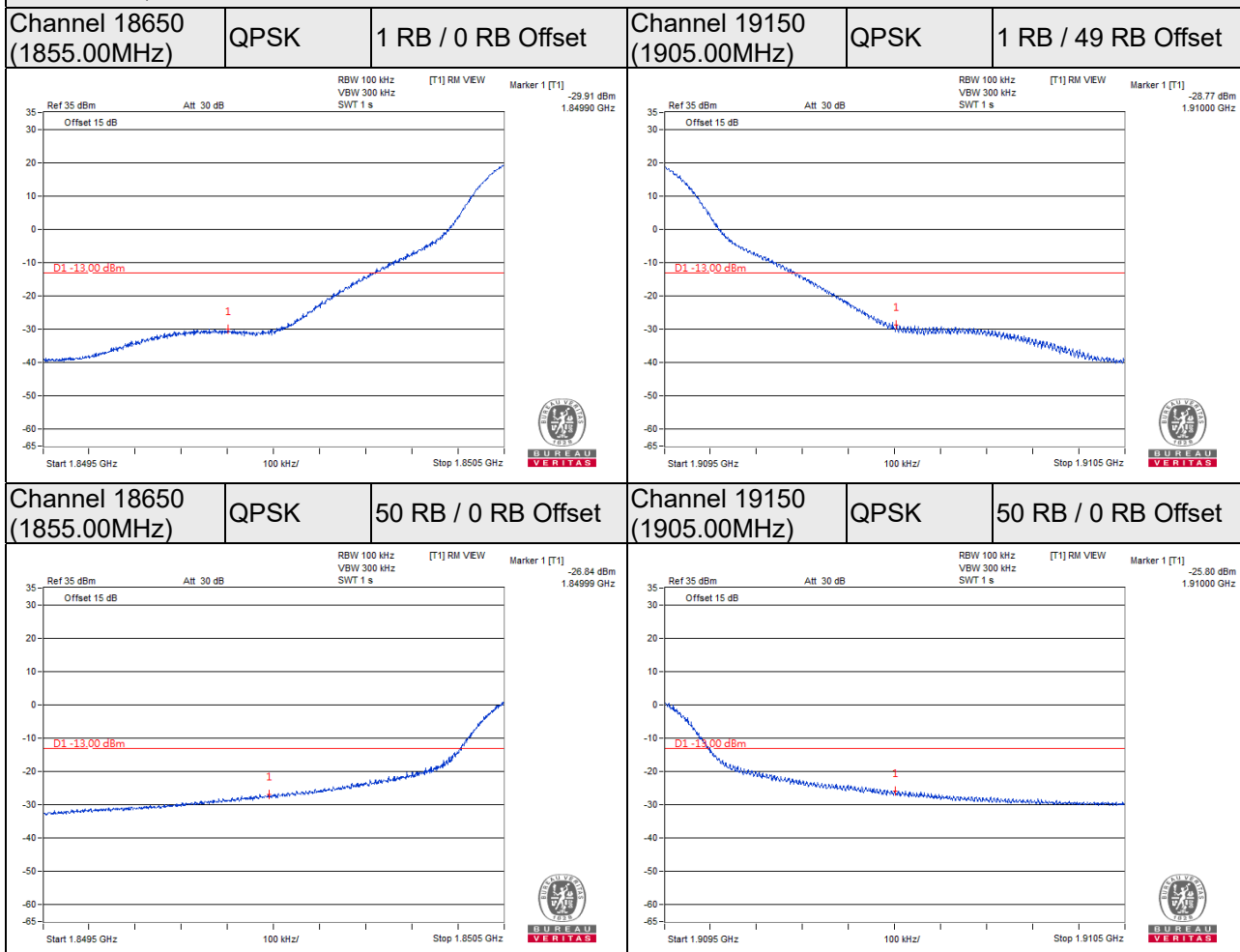
Channel 19175
(1907.50MHz)

QPSK

25 RB / 0 RB Offset



LTE Band 2, Channel Bandwidth: 10MHz



LTE Band 2, Channel Bandwidth: 15MHz

Channel 18675
(1857.50MHz)

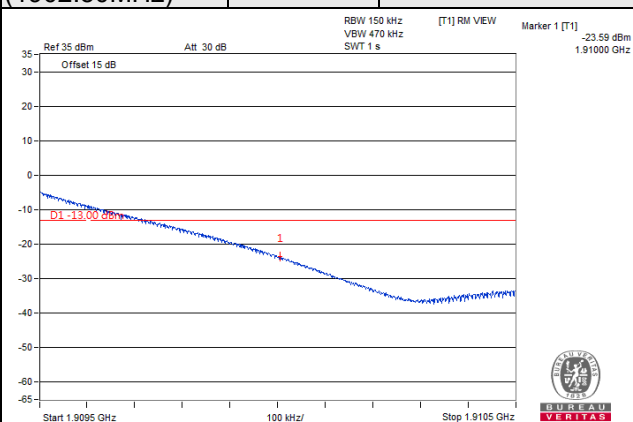
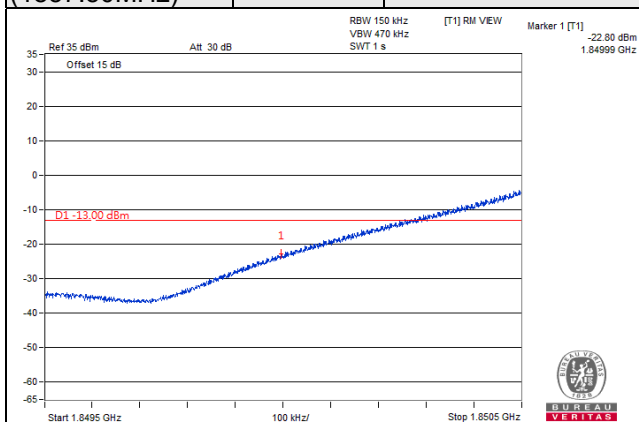
QPSK

1 RB / 0 RB Offset

Channel 19125
(1902.50MHz)

QPSK

1 RB / 74 RB Offset



Channel 18675
(1857.50MHz)

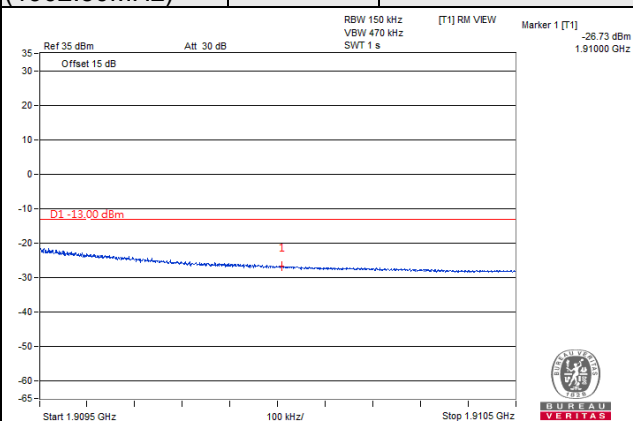
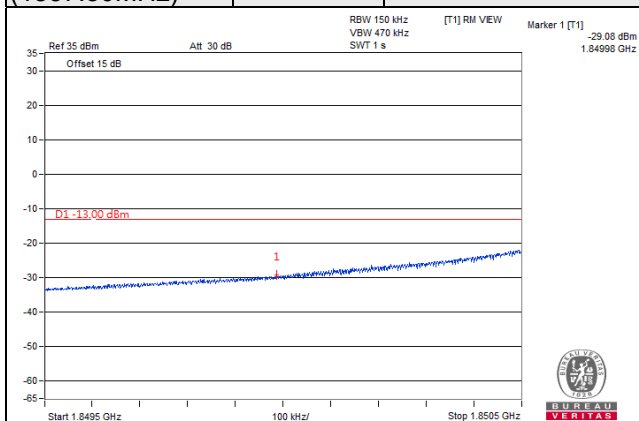
QPSK

75 RB / 0 RB Offset

Channel 19125
(1902.50MHz)

QPSK

75 RB / 0 RB Offset



LTE Band 2, Channel Bandwidth: 20MHz

Channel 18700
(1860.00MHz)

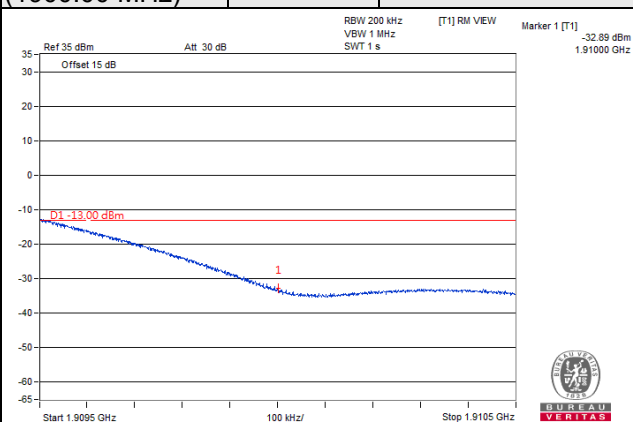
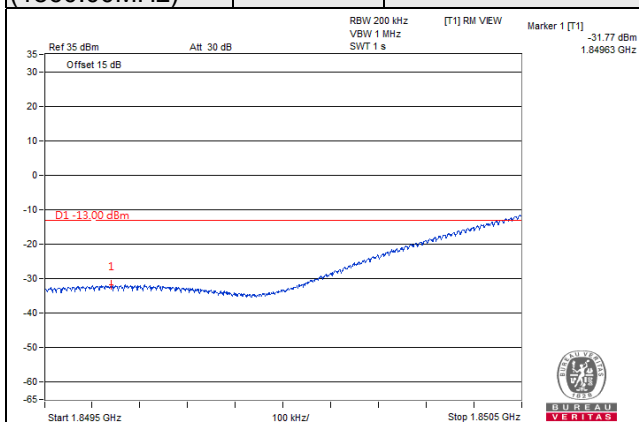
QPSK

1 RB / 0 RB Offset

Channel 19100
(1900.00 MHz)

QPSK

1 RB / 99 RB Offset



Channel 18700
(1860.00MHz)

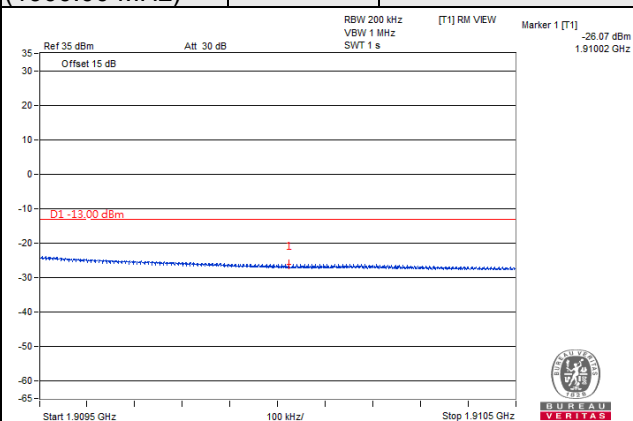
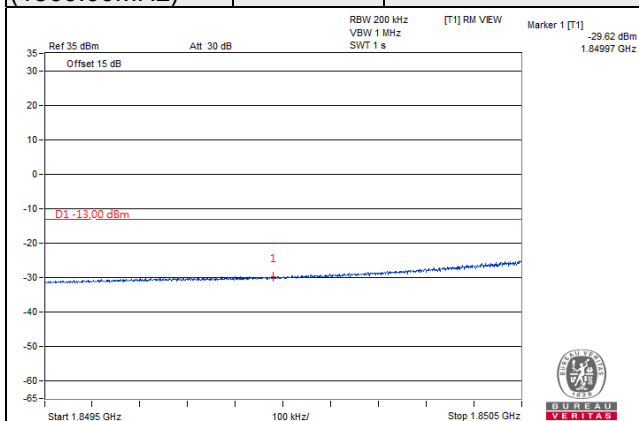
QPSK

100 RB / 0 RB Offset

Channel 19100
(1900.00 MHz)

QPSK

100 RB / 0 RB Offset

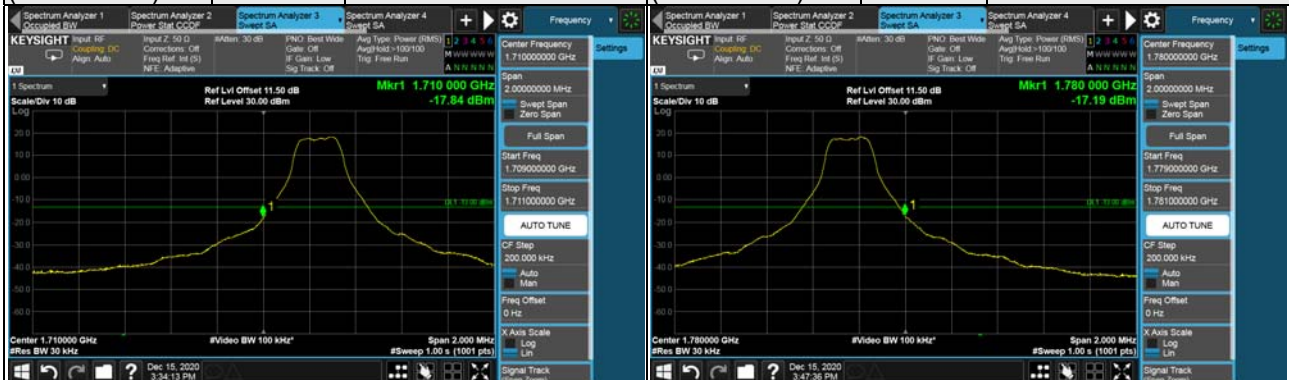


LTE Band 66, Channel Bandwidth: 1.4MHz



LTE Band 66, Channel Bandwidth: 3MHz

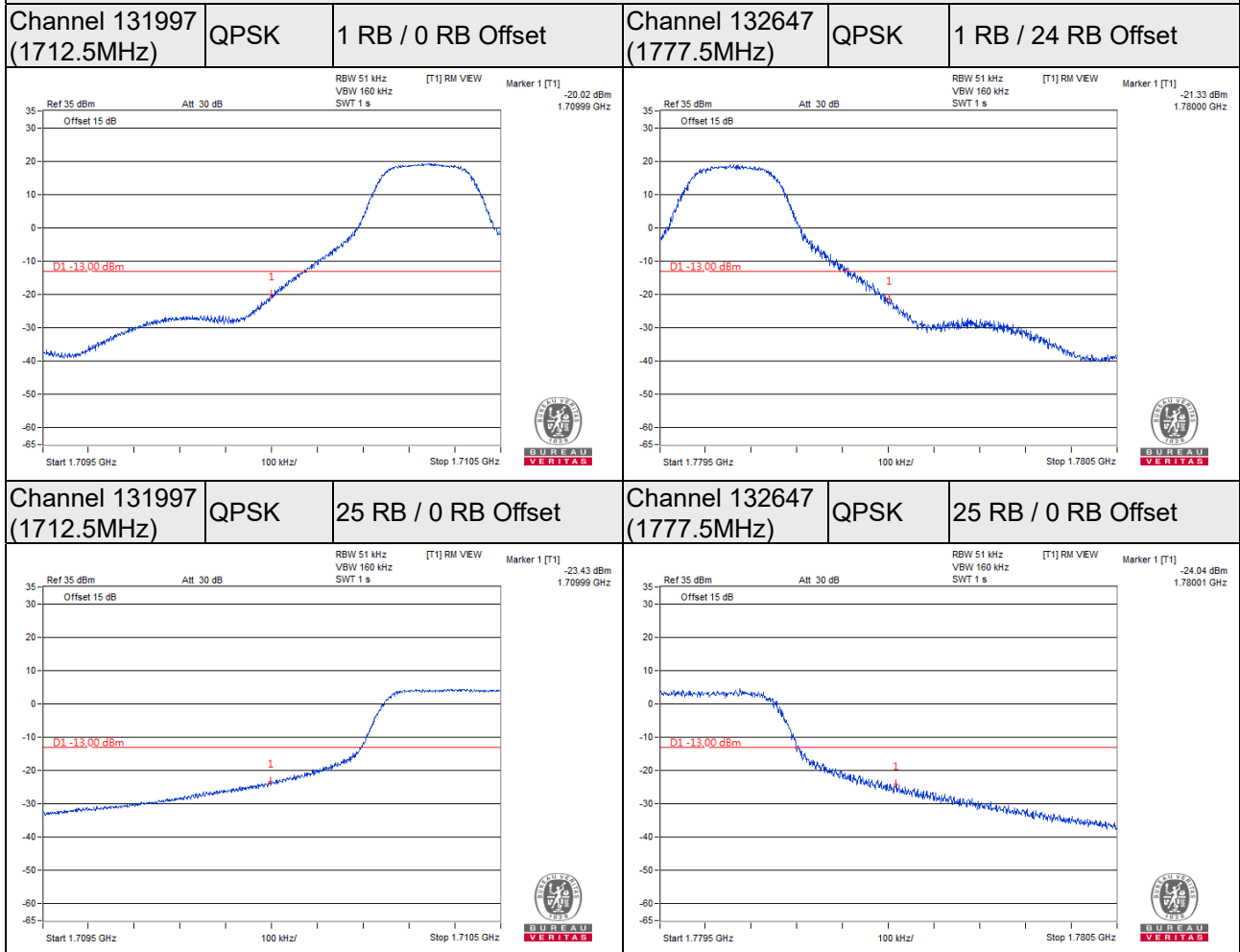
Channel 131987 (1711.5MHz)	QPSK	1 RB / 0 RB Offset	Channel 132657 (1778.5MHz)	QPSK	1 RB / 14 RB Offset
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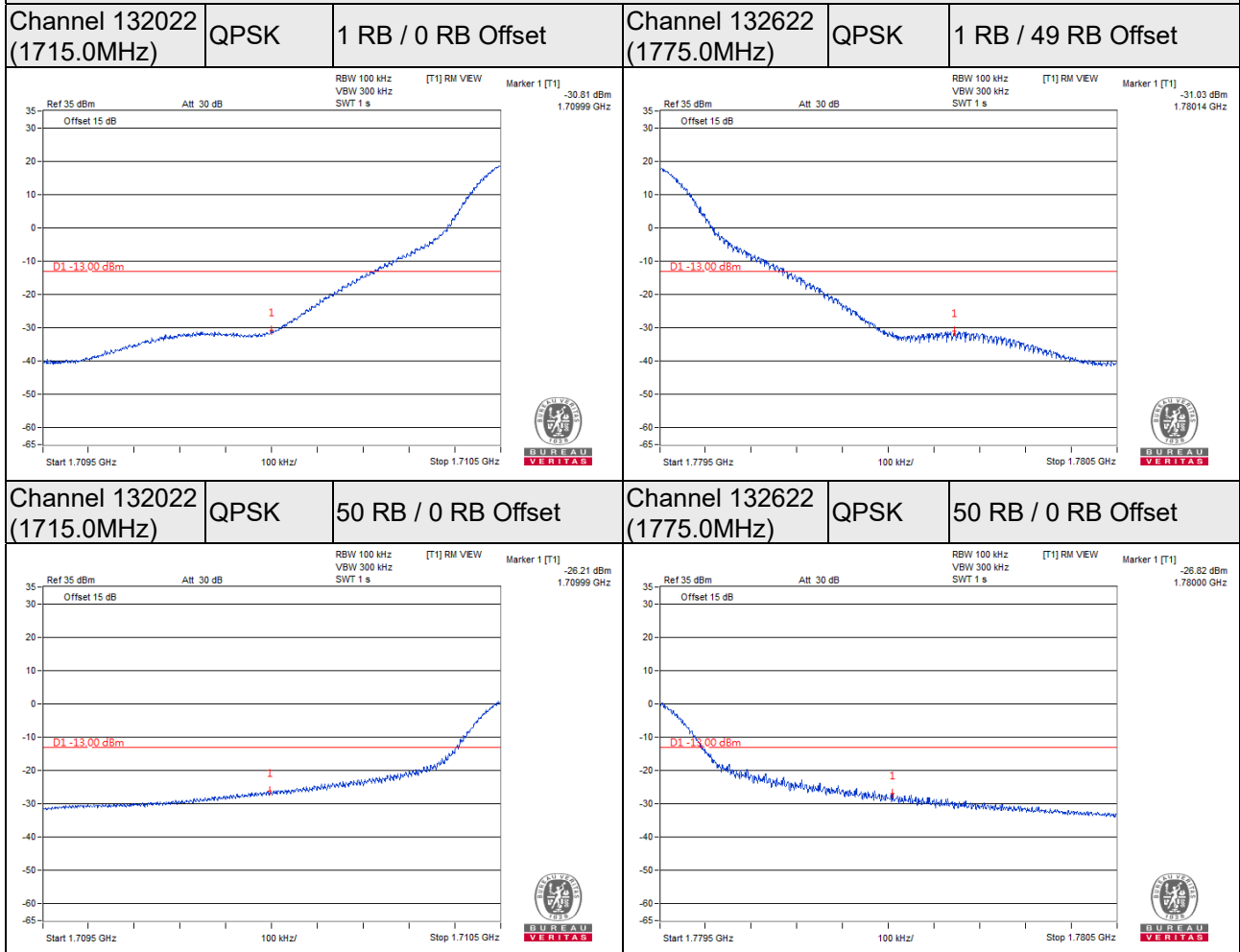
Channel 131987 (1711.5MHz)	QPSK	15 RB / 0 RB Offset	Channel 132657 (1778.5MHz)	QPSK	15 RB / 0 RB Offset
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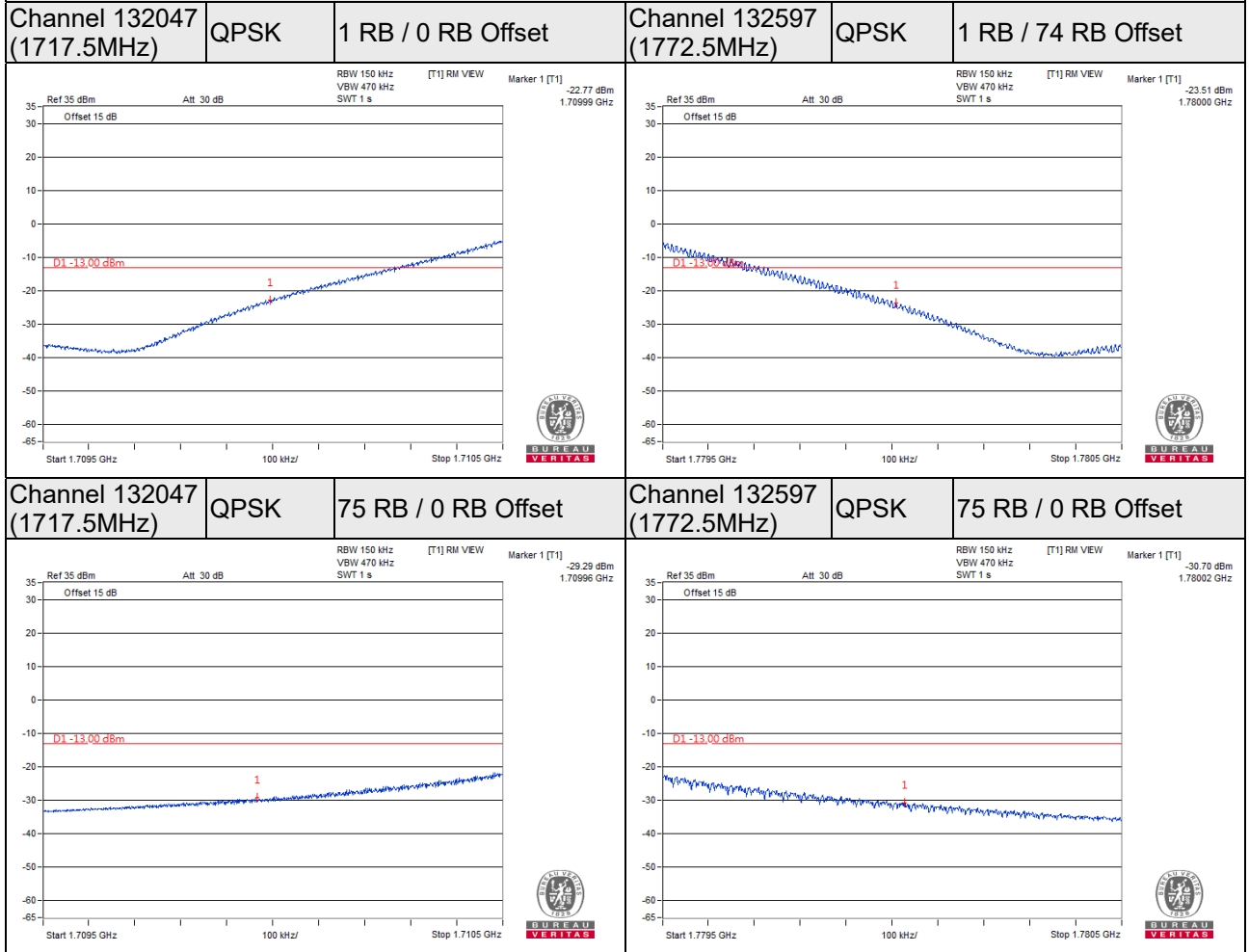
LTE Band 66, Channel Bandwidth: 5MHz



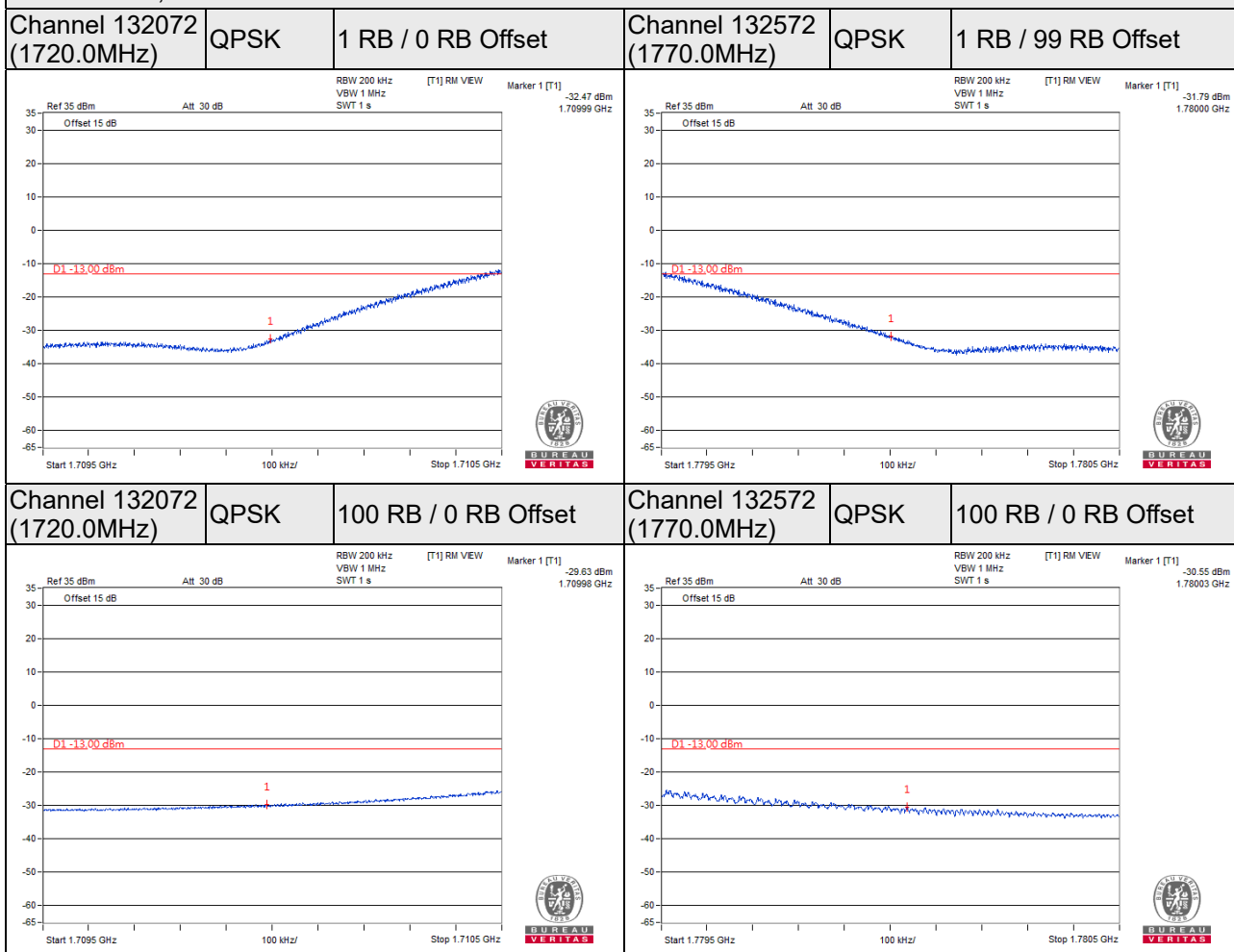
LTE Band 66, Channel Bandwidth: 10MHz



LTE Band 66, Channel Bandwidth: 15MHz



LTE Band 66, Channel Bandwidth: 20MHz

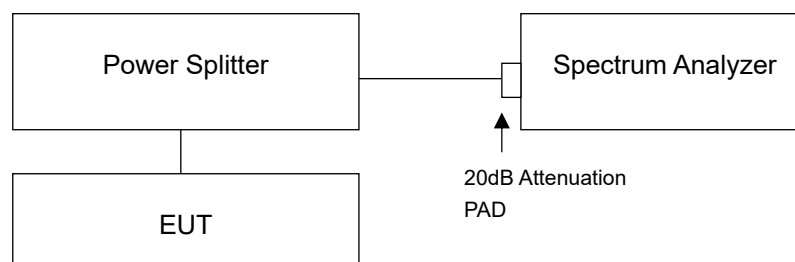


4.6 Peak to Average Ratio

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

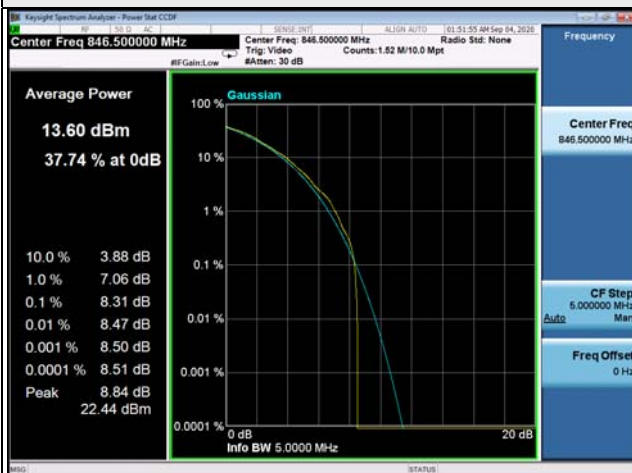
- Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth;
- Set the number of counts to a value that stabilizes the measured CCDF curve;
- Record the maximum PAPR level associated with a probability of 0.1%.

4.6.4 Test Results

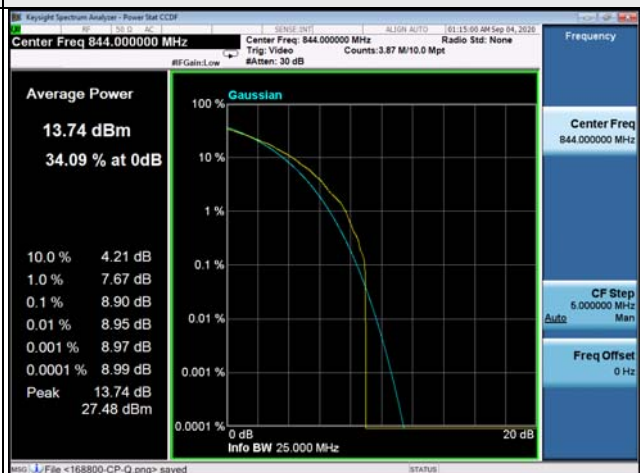
n5, Channel Bandwidth: 5MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
165300	826.5	5.78	8.18	7.77	7.53	8.14
167300	836.5	4.24	8.11	7.86	7.59	8.02
169300	846.5	4.26	8.31	7.77	7.51	7.97
n5, Channel Bandwidth: 10MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
165800	829.0	4.51	8.26	7.78	7.54	7.88
167300	836.5	4.51	8.84	7.84	7.48	7.81
168800	844.0	6.45	8.90	7.74	7.72	7.95
n5, Channel Bandwidth: 15MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
166300	831.5	5.02	8.59	7.54	7.43	7.99
167300	836.5	6.46	8.85	7.67	7.54	8.00
168300	841.5	4.73	7.09	7.79	7.69	8.06
n5, Channel Bandwidth: 20MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)				
		$\pi/2$ BPSK	QPSK	16QAM	64QAM	256QAM
166800	834.0	5.00	8.48	7.90	7.94	8.31
167300	836.5	6.56	9.21	7.95	8.02	8.30
167800	839.0	5.29	8.84	7.99	8.05	8.33

Spectrum Plot of Worst Value

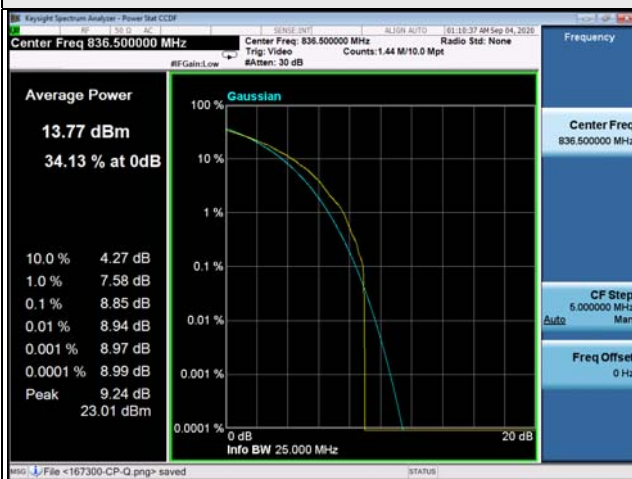
5MHz / QPSK



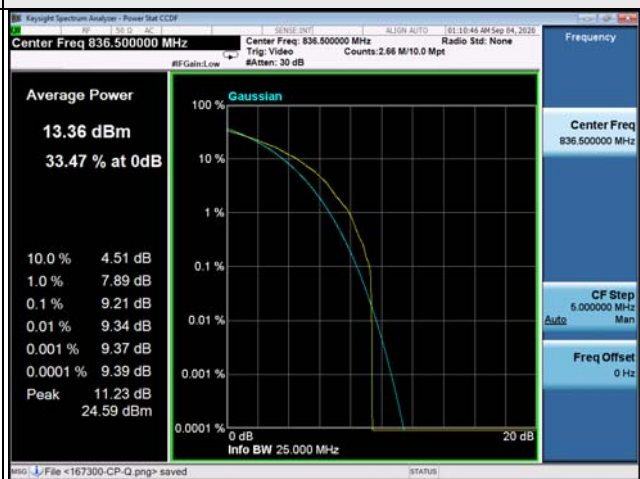
10MHz / QPSK



15MHz / QPSK



20MHz / QPSK

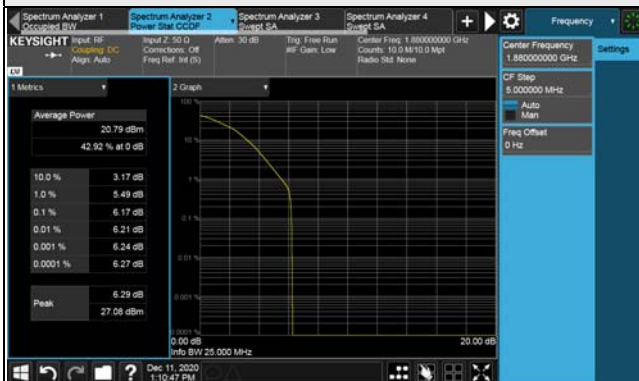


LTE Band 2, Channel Bandwidth: 1.4MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
18607	1850.7	6.15	6.13	6.08	6.15
18900	1880.0	5.55	6.15	6.17	5.70
19193	1909.3	5.75	6.11	5.99	5.53
LTE Band 2, Channel Bandwidth: 3MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
18615	1851.5	6.22	6.20	6.24	6.17
18900	1880.0	5.62	6.02	6.19	5.68
19185	1908.5	5.69	6.06	6.09	5.48
LTE Band 2, Channel Bandwidth: 5MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
18625	1852.5	5.73	6.16	6.42	6.35
18900	1880.0	5.21	5.44	5.70	5.60
19175	1907.5	5.39	5.55	5.88	5.75
LTE Band 2, Channel Bandwidth: 10MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
18650	1855.0	5.53	6.15	6.26	6.24
18900	1880.0	5.24	5.85	5.96	5.84
19150	1905.0	5.81	5.95	6.06	6.11
LTE Band 2, Channel Bandwidth: 15MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
18675	1857.5	5.64	5.94	6.10	5.96
18900	1880.0	5.79	6.11	6.30	6.27
19125	1902.5	5.53	5.72	6.01	5.93

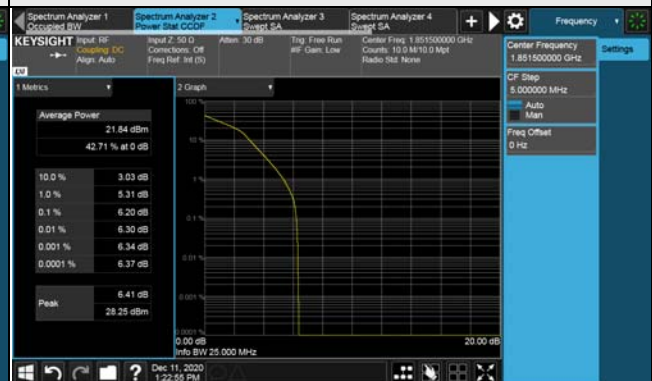
LTE Band 2, Channel Bandwidth: 20MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
18700	1860.0	5.65	6.16	6.27	6.26
18900	1880.0	5.91	6.07	6.30	6.24
19100	1900.0	4.74	5.14	5.29	5.31

Spectrum Plot of Worst Value

1.4MHz / 64QAM



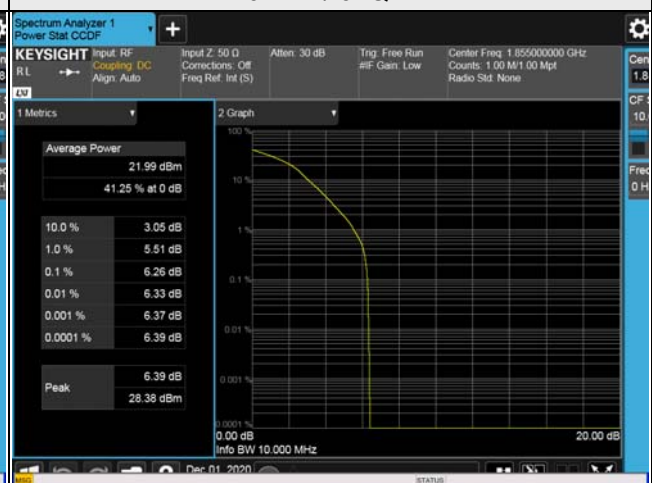
3MHz / 16QAM



5MHz / 64QAM



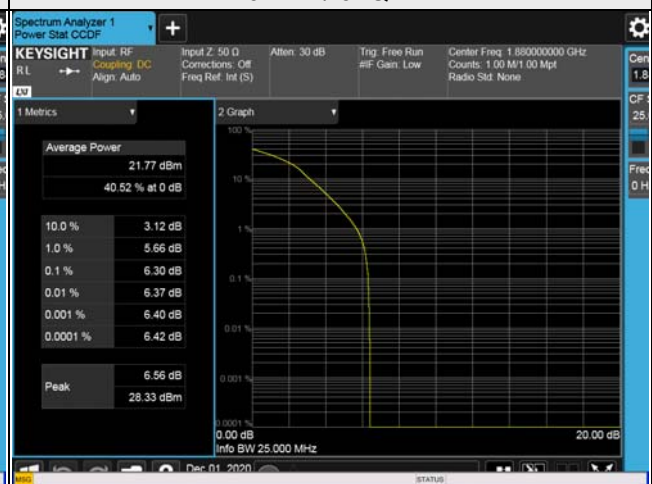
10MHz / 64QAM



15MHz / 64QAM



20MHz / 64QAM

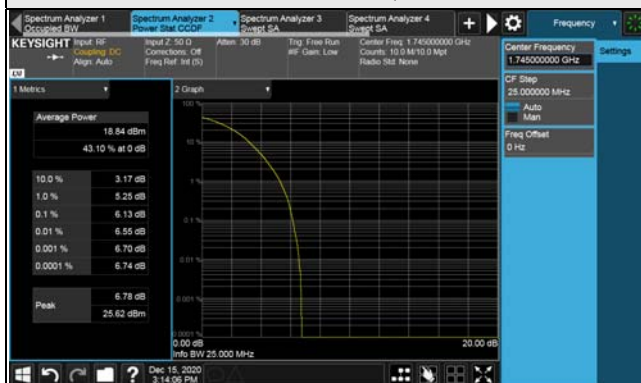


LTE Band 66, Channel Bandwidth: 1.4MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
131979	1710.7	5.35	5.76	5.81	5.78
132322	1745.0	5.62	6.01	5.99	6.13
132665	1779.3	5.43	5.82	5.87	5.79
LTE Band 66, Channel Bandwidth: 3MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
131987	1711.5	5.62	5.82	5.95	5.82
132322	1745.0	5.72	5.99	6.11	6.08
132657	1778.5	5.44	5.86	6.00	5.73
LTE Band 66, Channel Bandwidth: 5MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
131997	1712.5	5.30	5.75	5.90	5.92
132322	1745.0	5.20	5.63	6.00	6.06
132647	1777.5	5.67	5.88	6.06	6.06
LTE Band 66, Channel Bandwidth: 10MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
132022	1715.0	5.25	5.74	5.97	5.92
132322	1745.0	4.97	5.42	5.95	5.87
132622	1775.0	5.57	5.80	6.10	6.06
LTE Band 66, Channel Bandwidth: 15MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
132047	1717.5	5.21	5.76	5.90	5.92
132322	1745.0	4.70	5.22	5.78	5.88
132597	1772.5	5.47	5.77	5.90	5.97

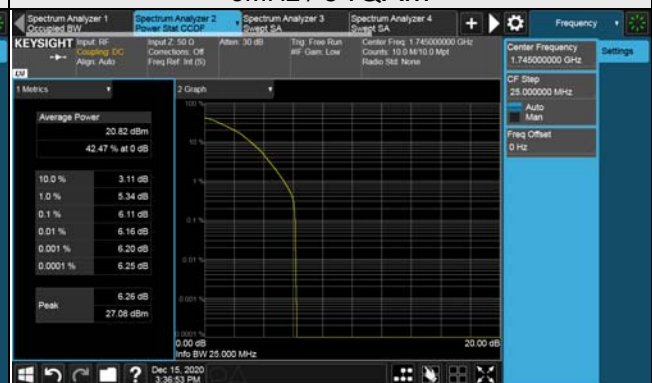
LTE Band 66, Channel Bandwidth: 20MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
132072	1720.0	5.12	5.57	5.80	6.00
132322	1745.0	4.57	5.04	5.77	5.76
132572	1770.0	5.74	5.78	6.11	6.06

Spectrum Plot of Worst Value

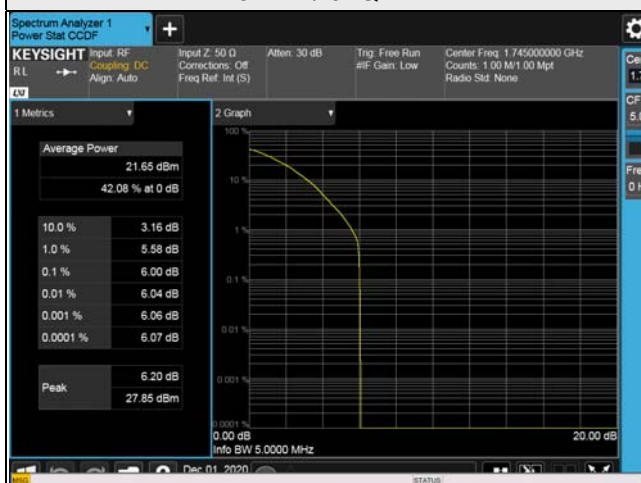
1.4MHz / 256QAM



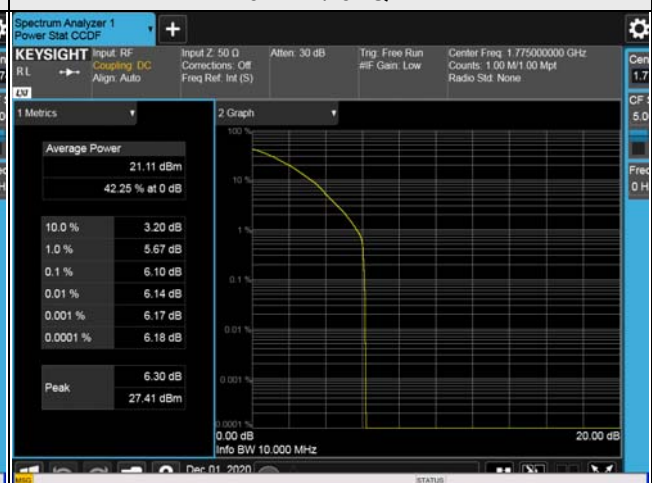
3MHz / 64QAM



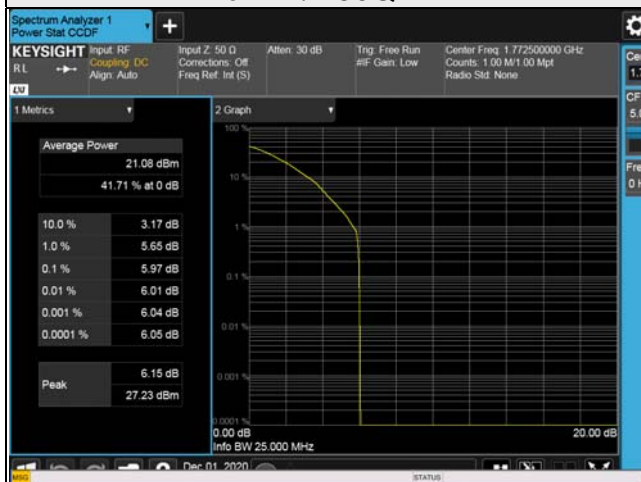
5MHz / 64QAM



10MHz / 64QAM



15MHz / 256QAM



20MHz / 64QAM



4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions Measurement

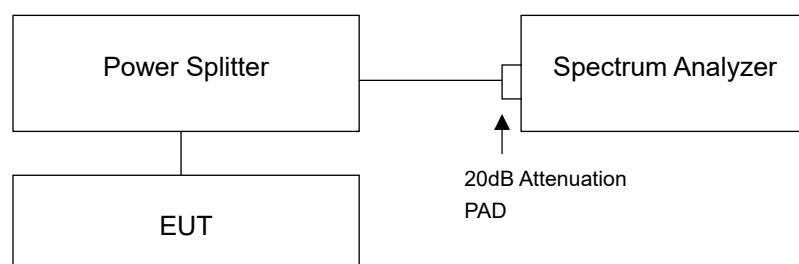
For n5, LTE Band 2:

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 .

For LTE Band 66:

In the FCC 27.53(h), On any frequency outside a licensee's frequency block, The power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm .

4.7.2 Test Setup



4.7.3 Test Procedure

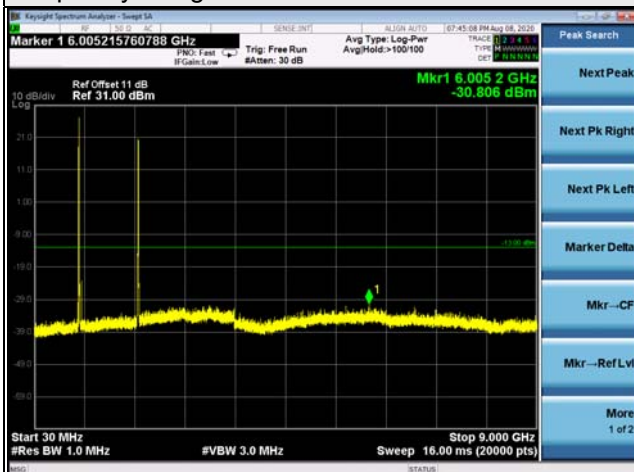
- The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- Measuring frequency range is from 9kHz to 9GHz / 18GHz / 20GHz. 20dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

4.7.4 Test Results

n5, Channel Bandwidth: 5MHz

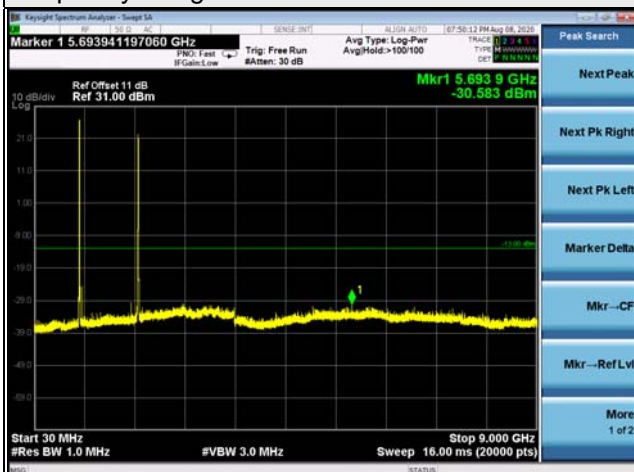
Channel 165300 (826.5MHz)

Frequency Range : 30MHz ~ 9GHz



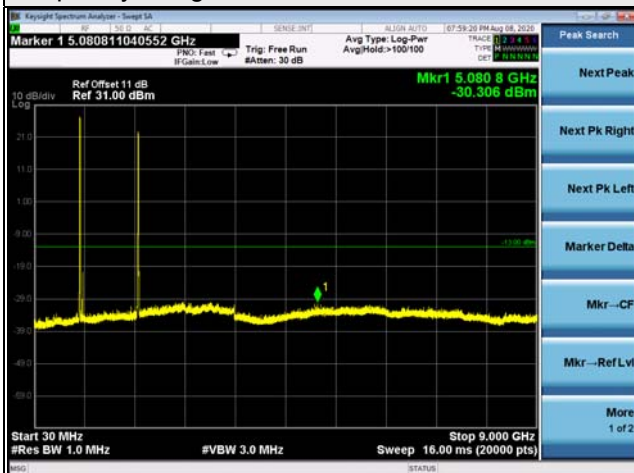
Channel 167300 (836.5MHz)

Frequency Range : 30MHz ~ 9GHz



Channel 169300 (846.5MHz)

Frequency Range : 30MHz ~ 9GHz

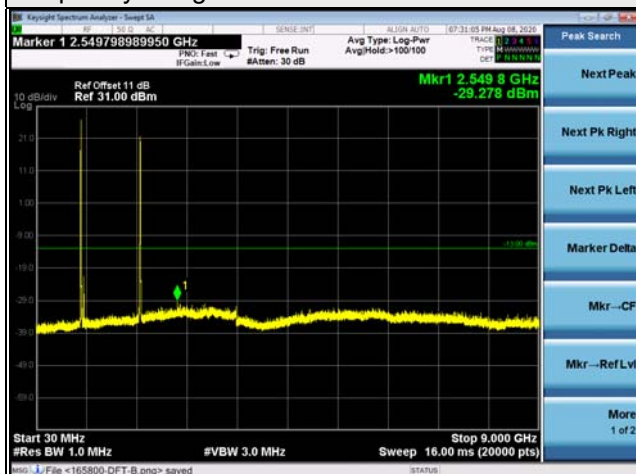


* The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz.

n5, Channel Bandwidth: 10MHz

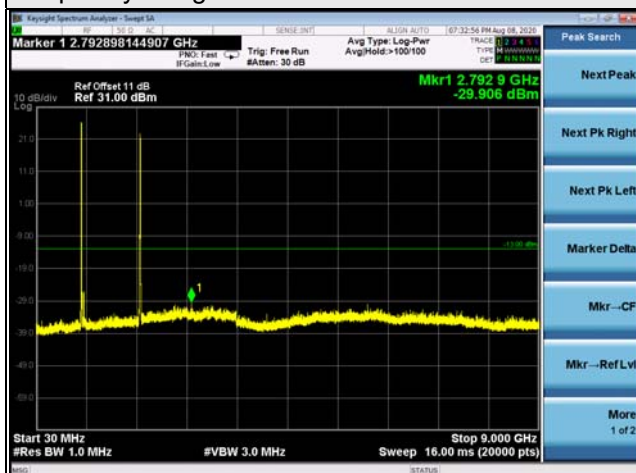
Channel 165800 (829.0MHz)

Frequency Range : 30MHz ~ 9GHz



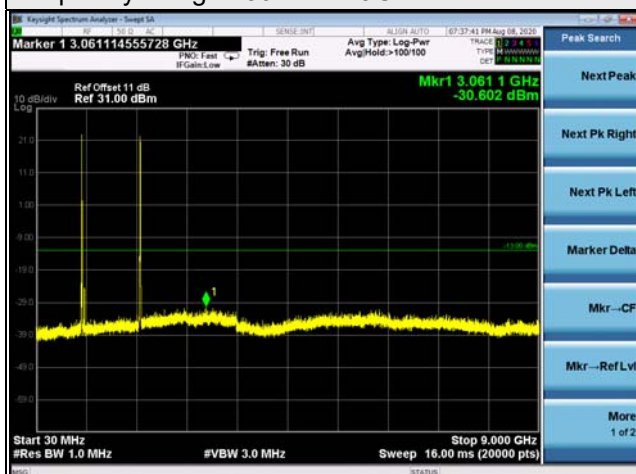
Channel 167300 (836.5MHz)

Frequency Range : 30MHz ~ 9GHz



Channel 168800 (844.0MHz)

Frequency Range : 30MHz ~ 9GHz

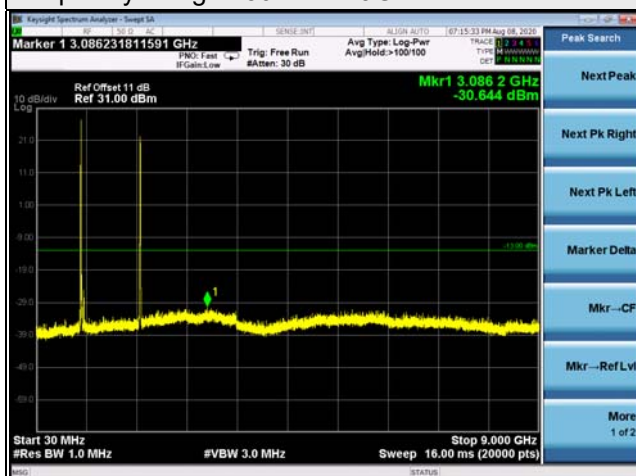


* The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz.

n5, Channel Bandwidth: 15MHz

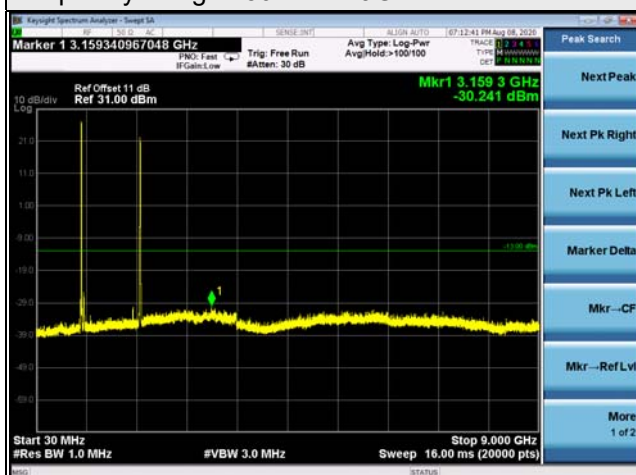
Channel 166300 (831.5MHz)

Frequency Range : 30MHz ~ 9GHz



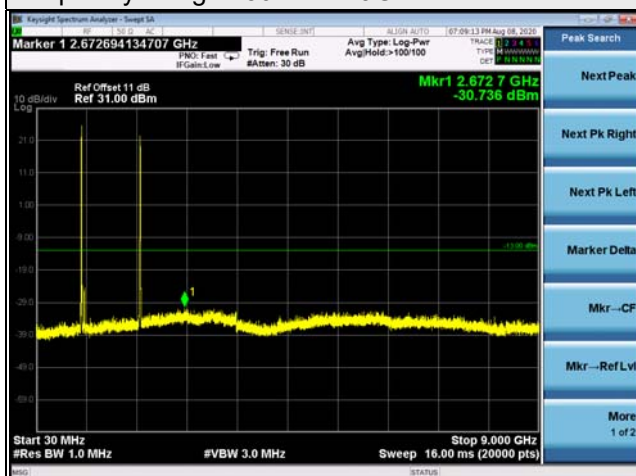
Channel 167300 (836.5MHz)

Frequency Range : 30MHz ~ 9GHz



Channel 168300 (841.5MHz)

Frequency Range : 30MHz ~ 9GHz

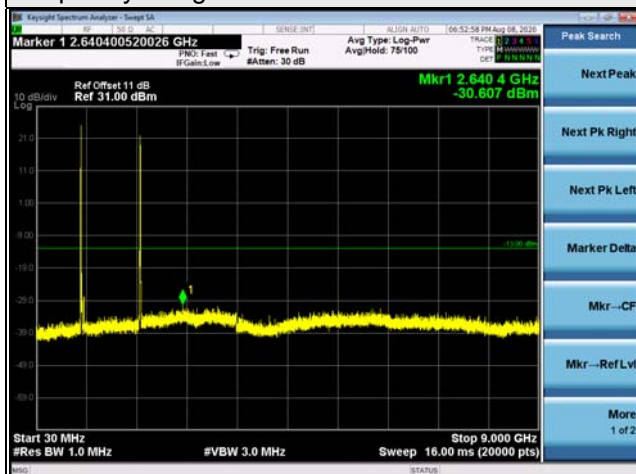


* The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz.

n5, Channel Bandwidth: 20MHz

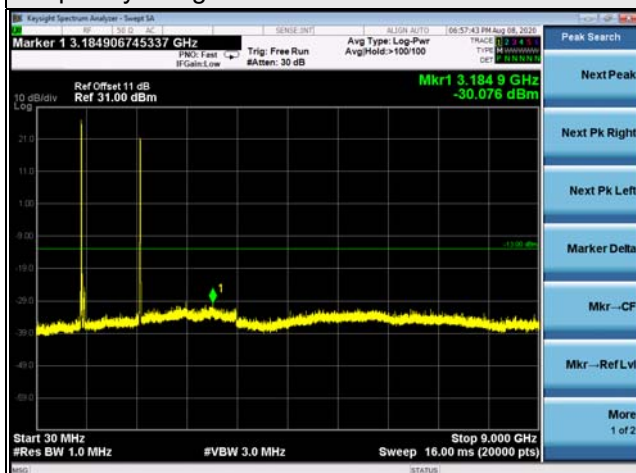
Channel 166800 (834.0MHz)

Frequency Range : 30MHz ~ 9GHz



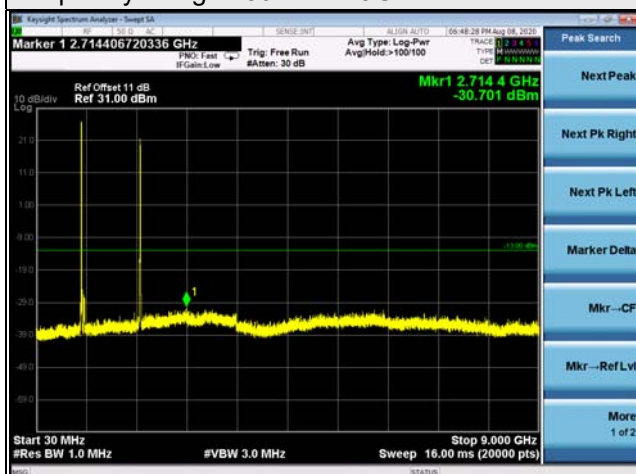
Channel 167300 (836.5MHz)

Frequency Range : 30MHz ~ 9GHz



Channel 167800 (839.0MHz)

Frequency Range : 30MHz ~ 9GHz

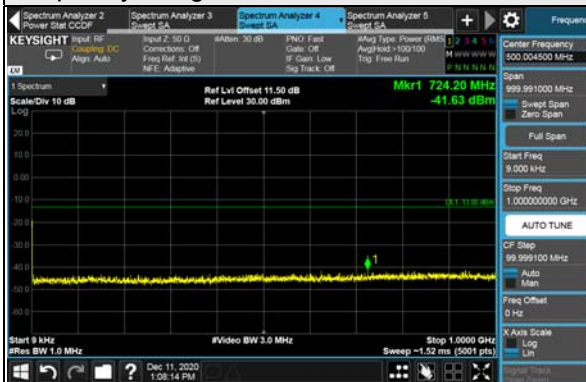


* The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz.

LTE Band 2, Channel Bandwidth: 1.4MHz

Channel 18607 (1850.70MHz)

Frequency Range : 9kHz ~ 1GHz

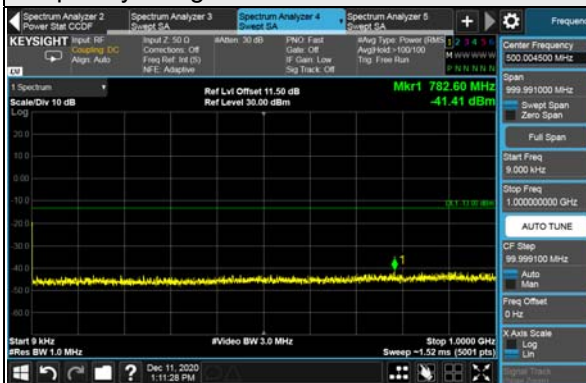


Frequency Range : 1GHz ~ 20GHz

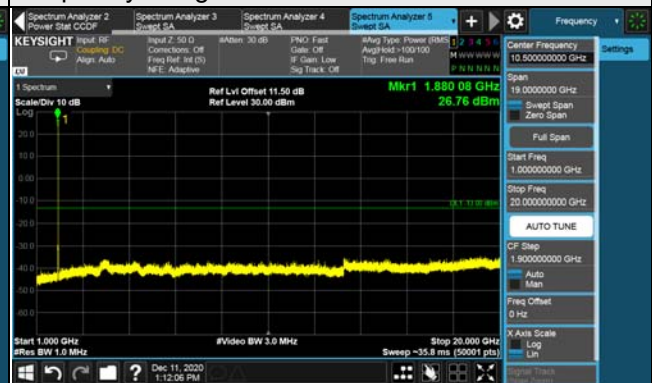


Channel 18900 (1880.00MHz)

Frequency Range : 9kHz ~ 1GHz

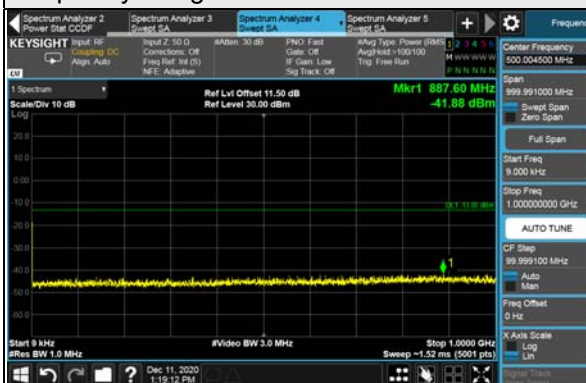


Frequency Range : 1GHz ~ 20GHz



Channel 19193 (1909.30MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 20GHz

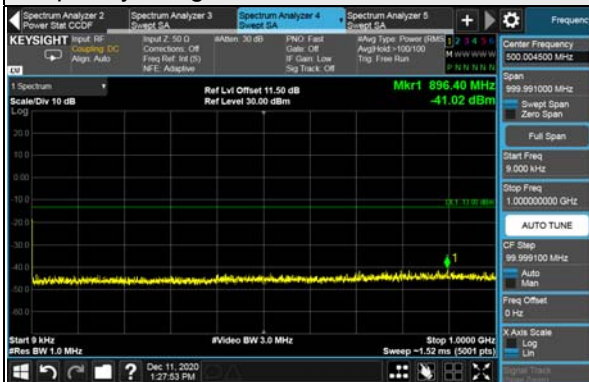


*The 9kHz signal over the limit is from Spectrum.

LTE Band 2, Channel Bandwidth: 3MHz

Channel 18615 (1851.50MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 20GHz



Channel 18900 (1880.00MHz)

Frequency Range : 9kHz ~ 1GHz

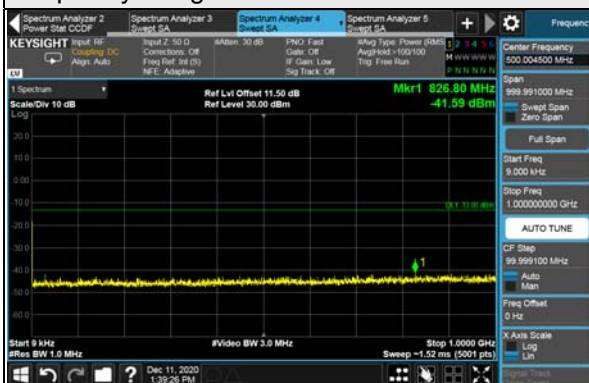


Frequency Range : 1GHz ~ 20GHz



Channel 19185 (1908.50MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 20GHz

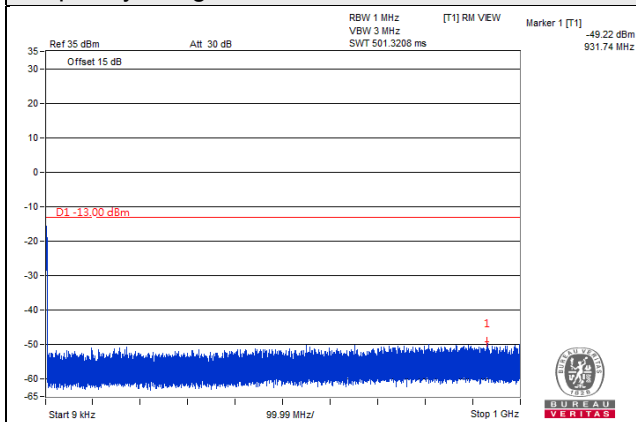


*The 9kHz signal over the limit is from Spectrum.

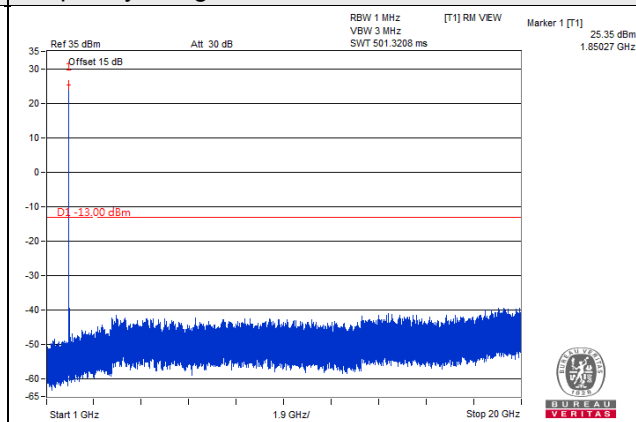
LTE Band 2, Channel Bandwidth: 5MHz

Channel 18625 (1852.50MHz)

Frequency Range : 9kHz ~ 1GHz

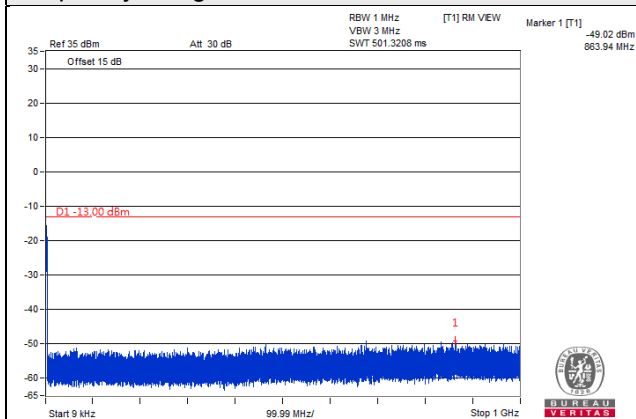


Frequency Range : 1GHz ~ 20GHz

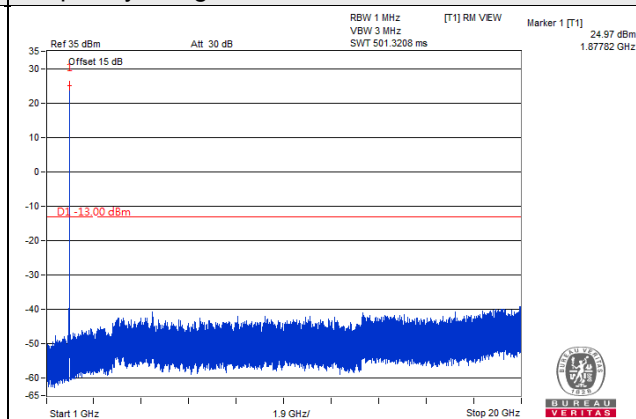


Channel 18900 (1880.00MHz)

Frequency Range : 9kHz ~ 1GHz

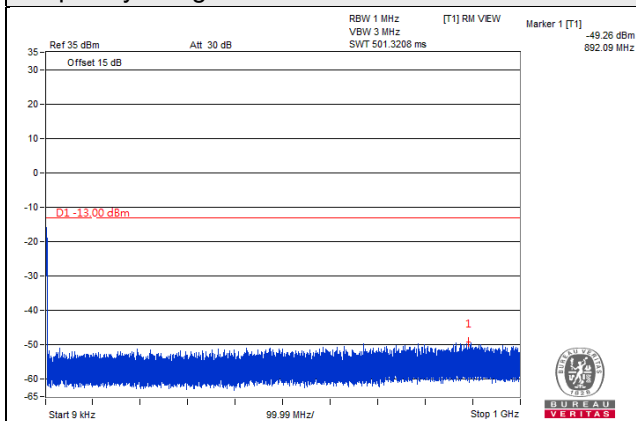


Frequency Range : 1GHz ~ 20GHz

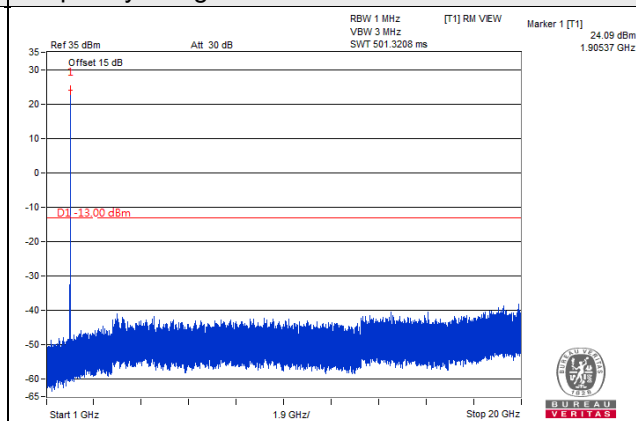


Channel 19175 (1907.50MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 20GHz

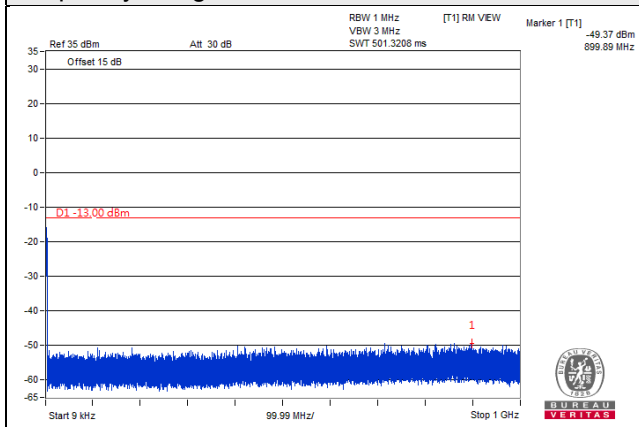


*The 9kHz signal over the limit is from Spectrum.

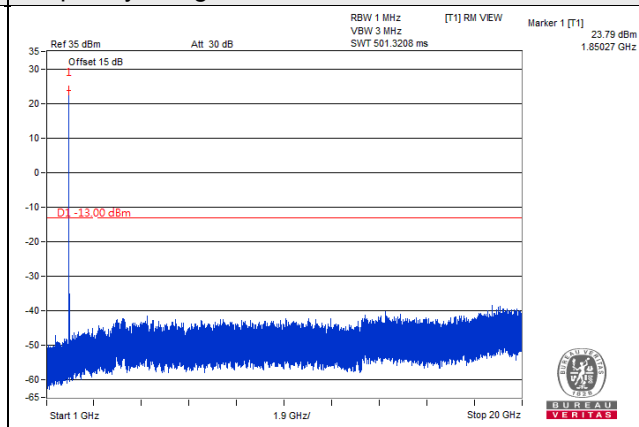
LTE Band 2, Channel Bandwidth: 10MHz

Channel 18650 (1855.00MHz)

Frequency Range : 9kHz ~ 1GHz

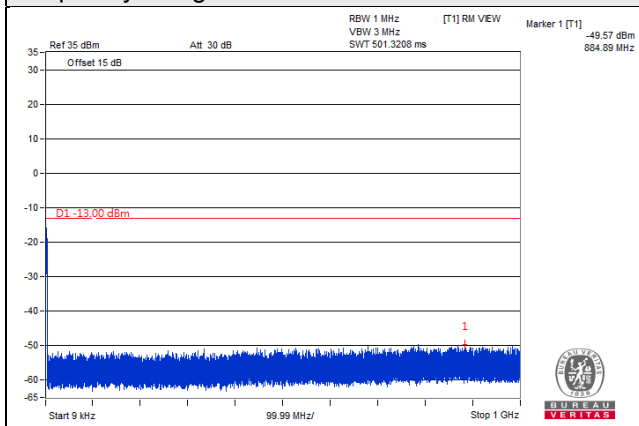


Frequency Range : 1GHz ~ 20GHz

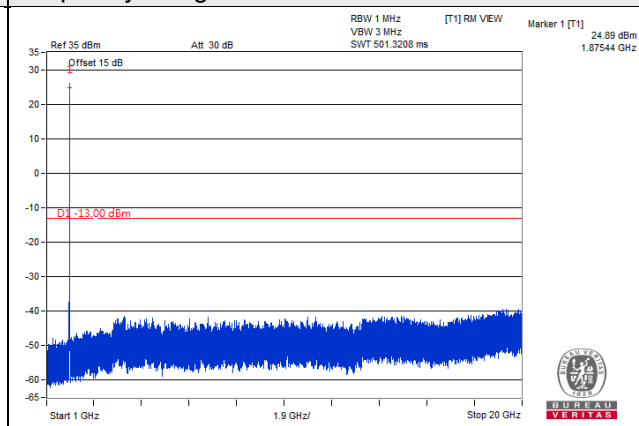


Channel 18900 (1880.00MHz)

Frequency Range : 9kHz ~ 1GHz

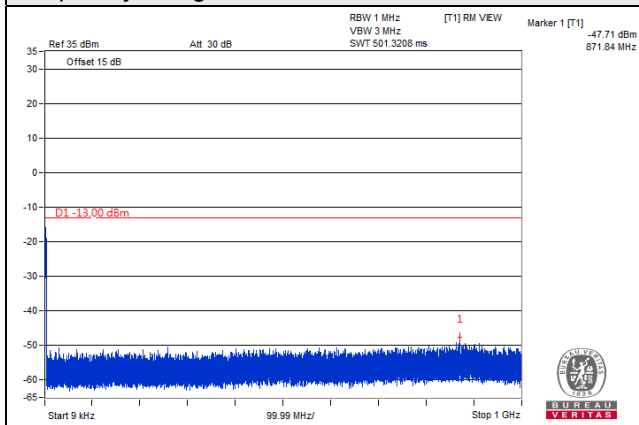


Frequency Range : 1GHz ~ 20GHz

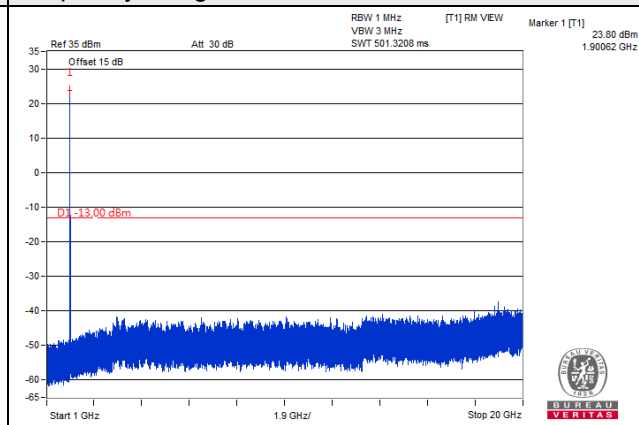


Channel 19150 (1905.00MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 20GHz

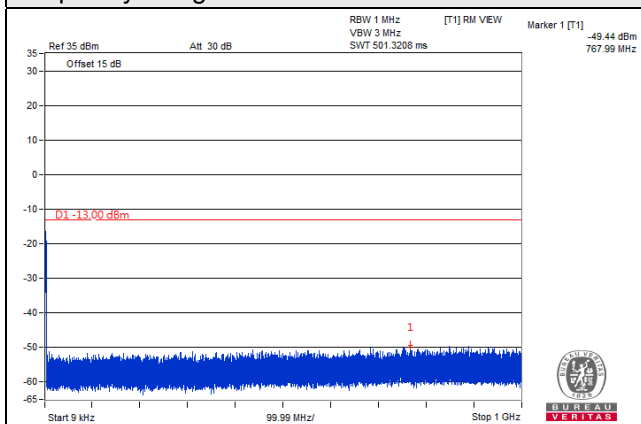


*The 9kHz signal over the limit is from Spectrum.

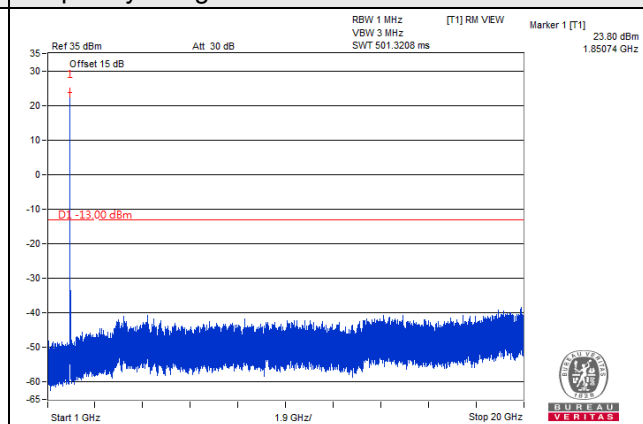
LTE Band 2, Channel Bandwidth: 15MHz

Channel 18675 (1857.50MHz)

Frequency Range : 9kHz ~ 1GHz

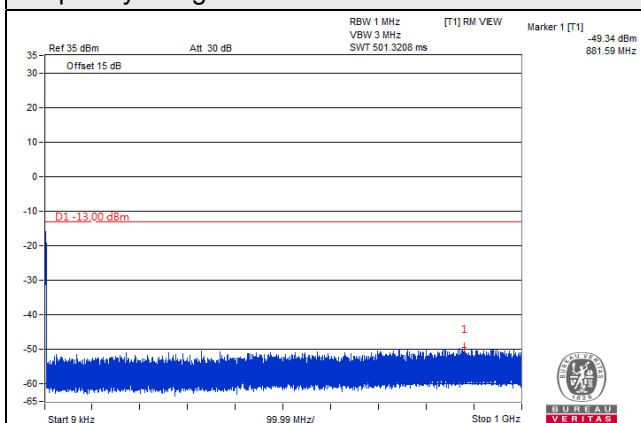


Frequency Range : 1GHz ~ 20GHz

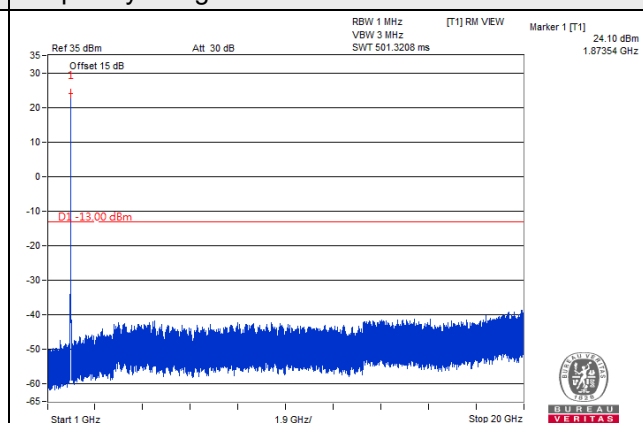


Channel 18900 (1880.00MHz)

Frequency Range : 9kHz ~ 1GHz

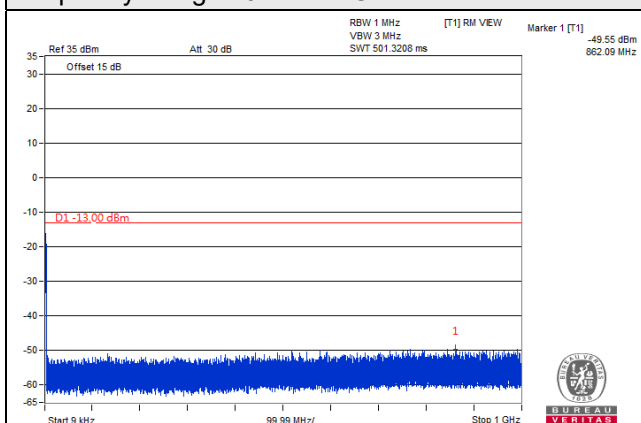


Frequency Range : 1GHz ~ 20GHz

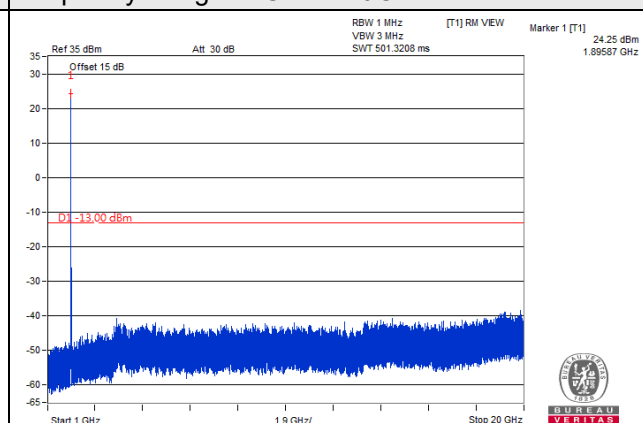


Channel 19125 (1902.50MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 20GHz

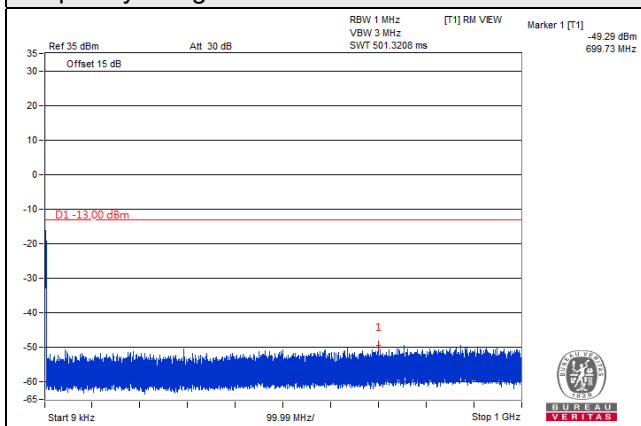


*The 9kHz signal over the limit is from Spectrum.

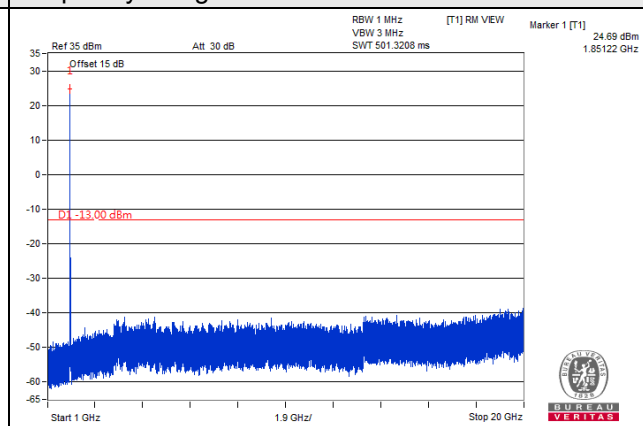
LTE Band 2, Channel Bandwidth: 20MHz

Channel 18700 (1860.00MHz)

Frequency Range : 9kHz ~ 1GHz

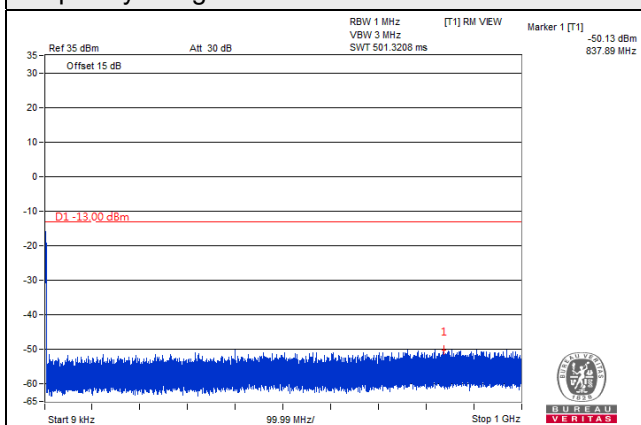


Frequency Range : 1GHz ~ 20GHz

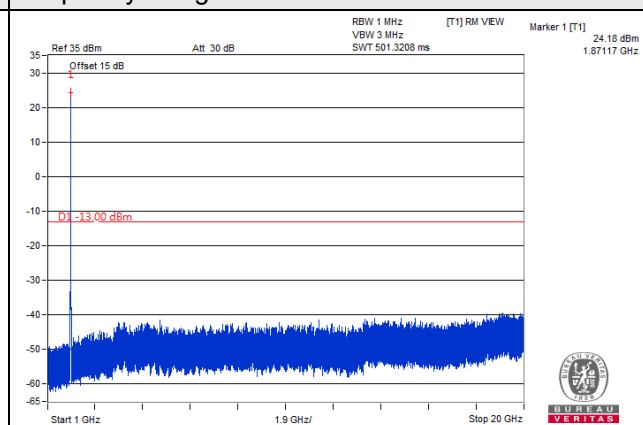


Channel 18900 (1880.00MHz)

Frequency Range : 9kHz ~ 1GHz

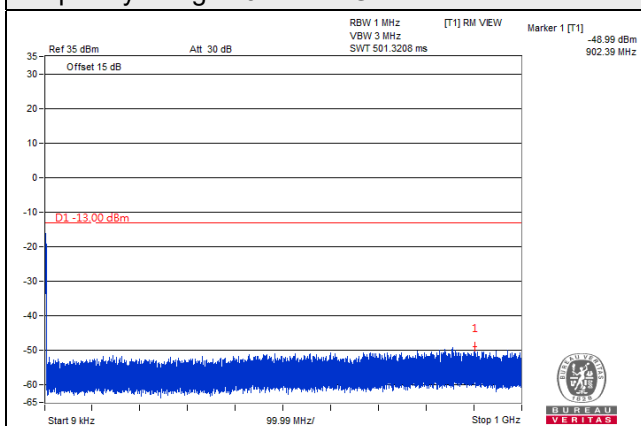


Frequency Range : 1GHz ~ 20GHz

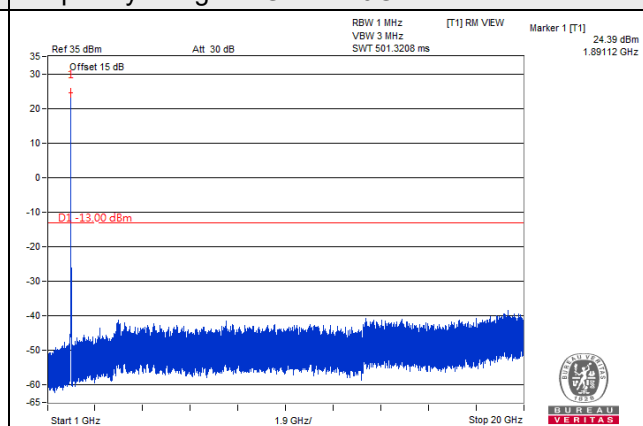


Channel 19100 (1900.00MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 20GHz

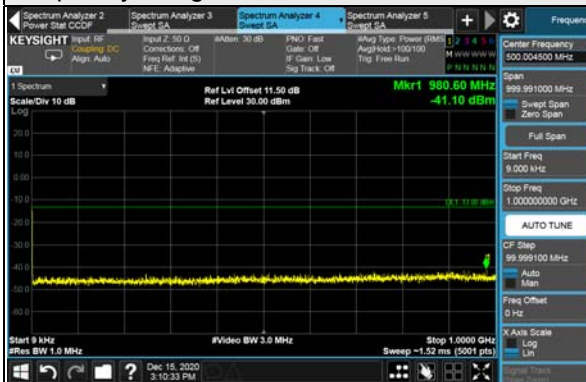


*The 9kHz signal over the limit is from Spectrum.

LTE Band 66, Channel Bandwidth: 1.4MHz

Channel 131979 (1710.7MHz)

Frequency Range : 9kHz ~ 1GHz

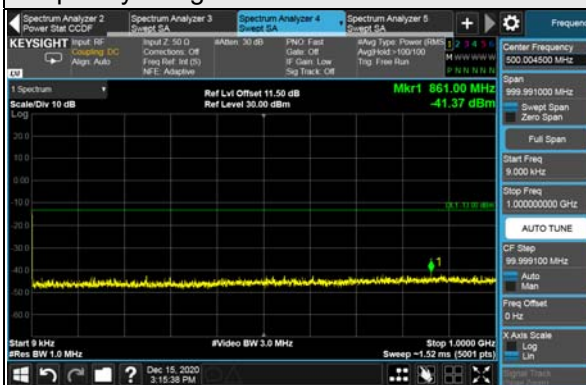


Frequency Range : 1GHz ~ 20GHz

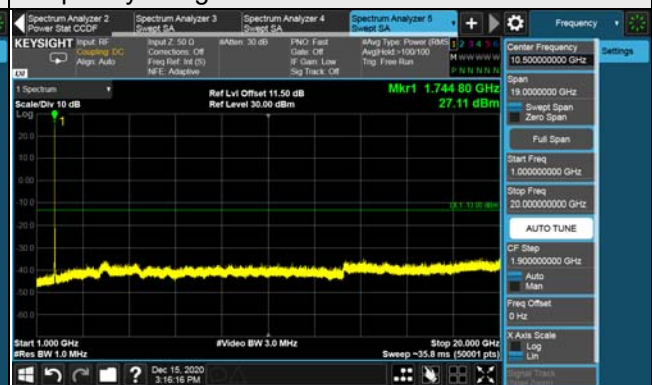


Channel 132322 (1745.0MHz)

Frequency Range : 9kHz ~ 1GHz

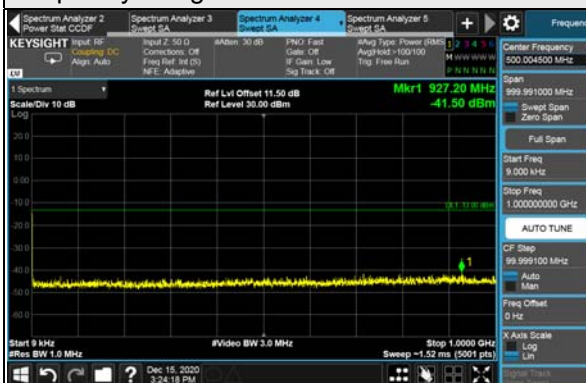


Frequency Range : 1GHz ~ 20GHz



Channel 132665 (1779.3MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 20GHz



*The 9kHz signal over the limit is from Spectrum.

LTE Band 66, Channel Bandwidth: 3MHz

Channel 131987 (1711.5MHz)

Frequency Range : 9kHz ~ 1GHz

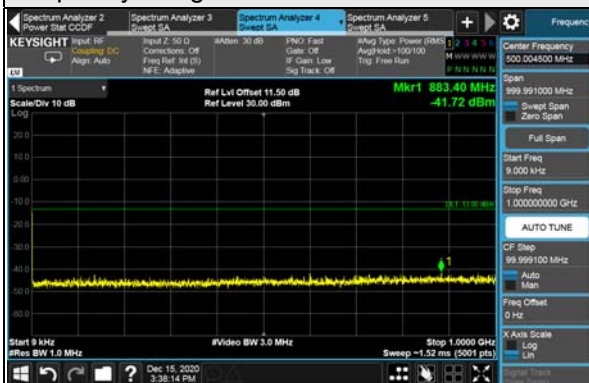


Frequency Range : 1GHz ~ 20GHz

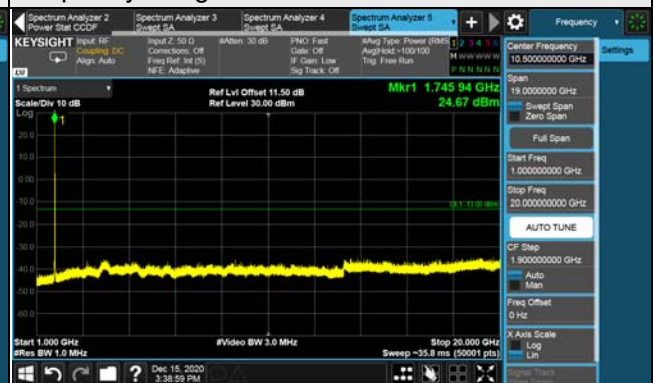


Channel 132322 (1745.0MHz)

Frequency Range : 9kHz ~ 1GHz

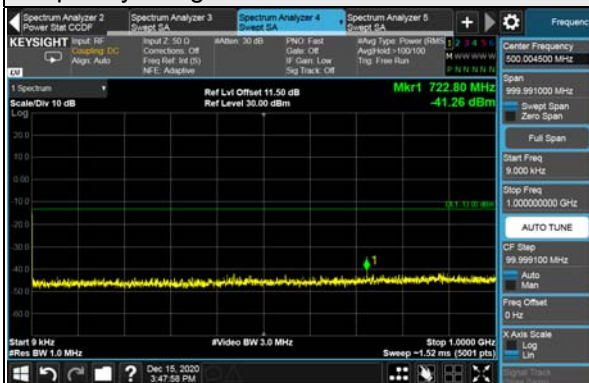


Frequency Range : 1GHz ~ 20GHz

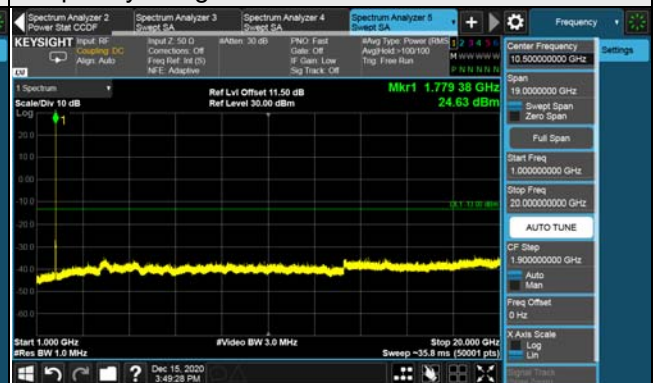


Channel 132657 (1778.5MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 20GHz

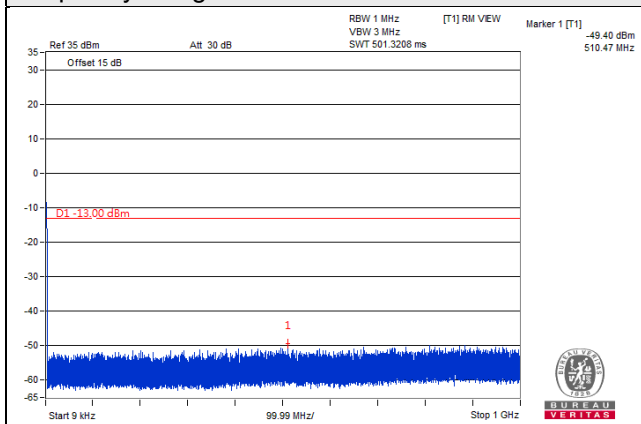


*The 9kHz signal over the limit is from Spectrum.

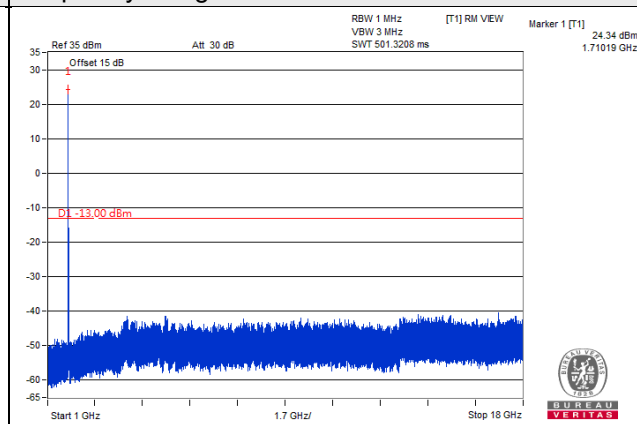
LTE Band 66, Channel Bandwidth: 5MHz

Channel 131997 (1712.5MHz)

Frequency Range : 9kHz ~ 1GHz

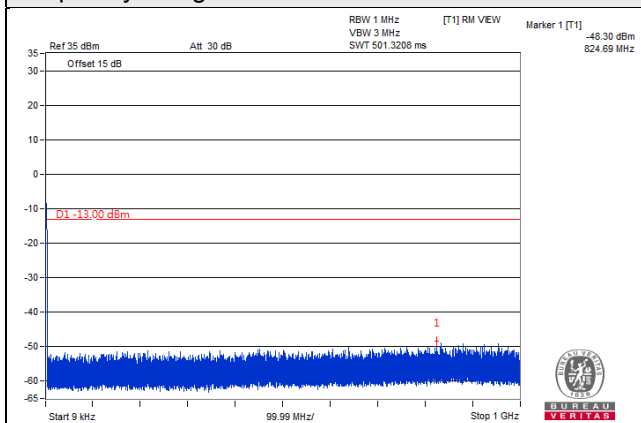


Frequency Range : 1GHz ~ 18GHz

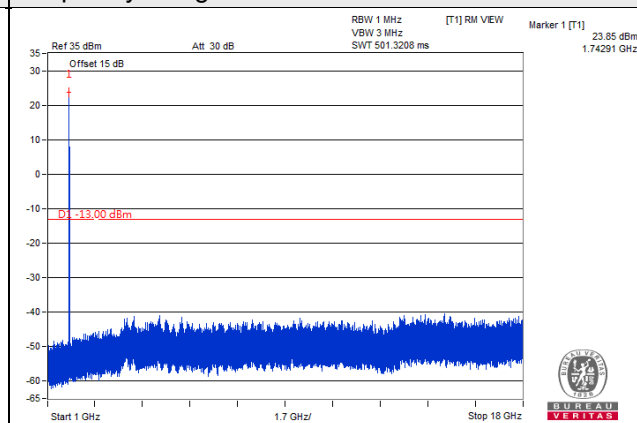


Channel 132322 (1745.0MHz)

Frequency Range : 9kHz ~ 1GHz

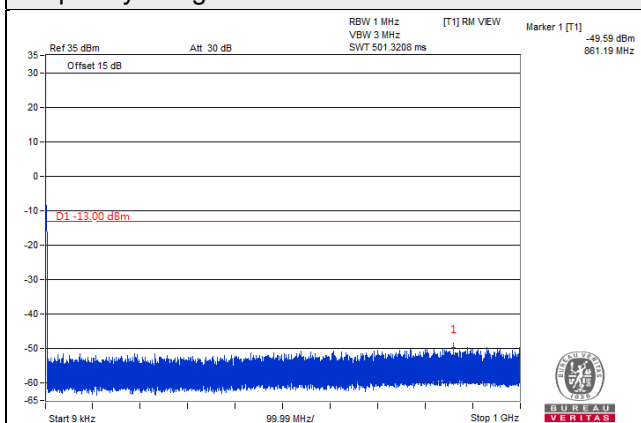


Frequency Range : 1GHz ~ 18GHz

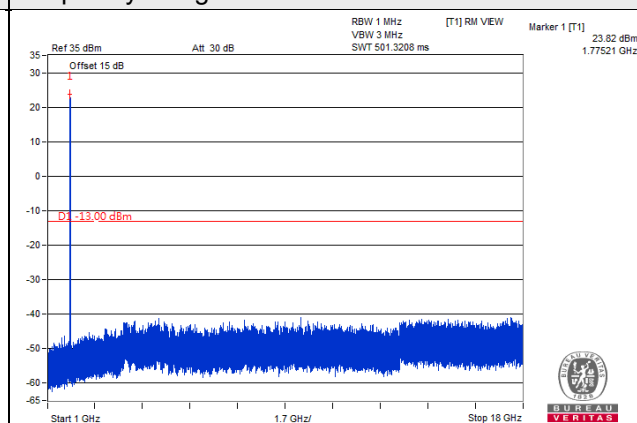


Channel 132647 (1777.5MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 18GHz

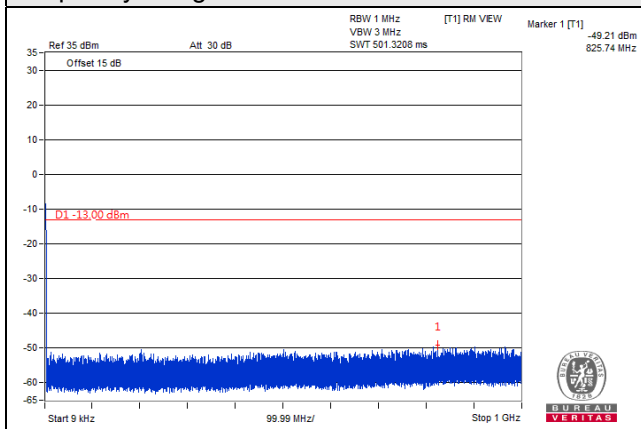


*The 9kHz signal over the limit is from Spectrum.

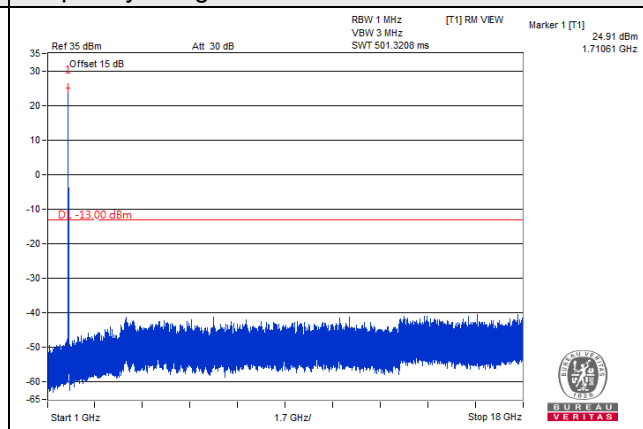
LTE Band 66, Channel Bandwidth: 10MHz

Channel 132022 (1715.0MHz)

Frequency Range : 9kHz ~ 1GHz

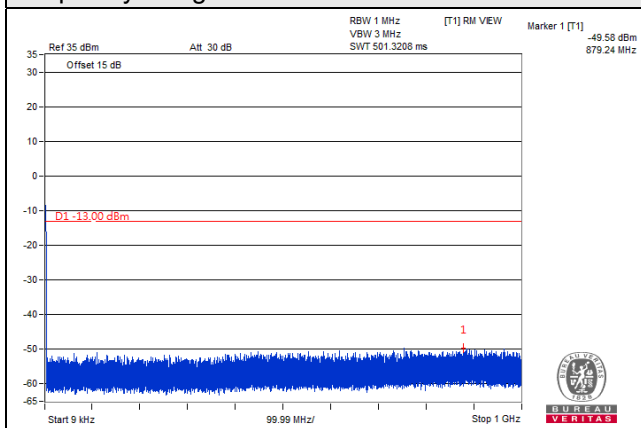


Frequency Range : 1GHz ~ 18GHz

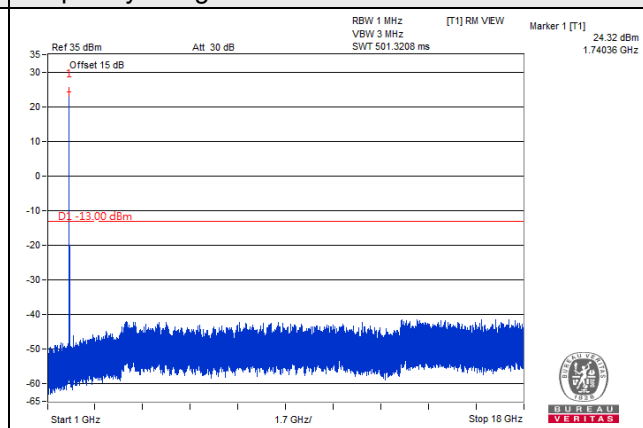


Channel 132322 (1745.0MHz)

Frequency Range : 9kHz ~ 1GHz

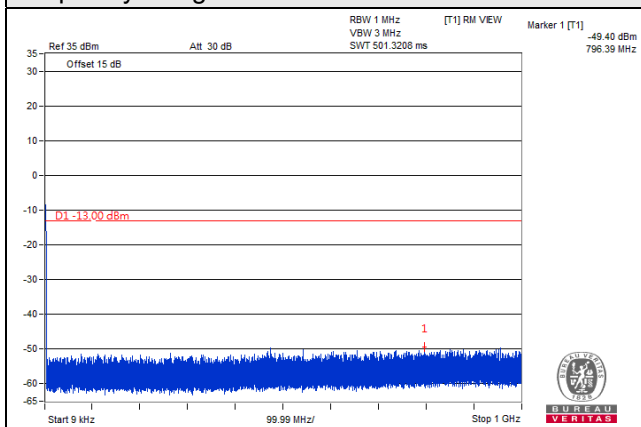


Frequency Range : 1GHz ~ 18GHz

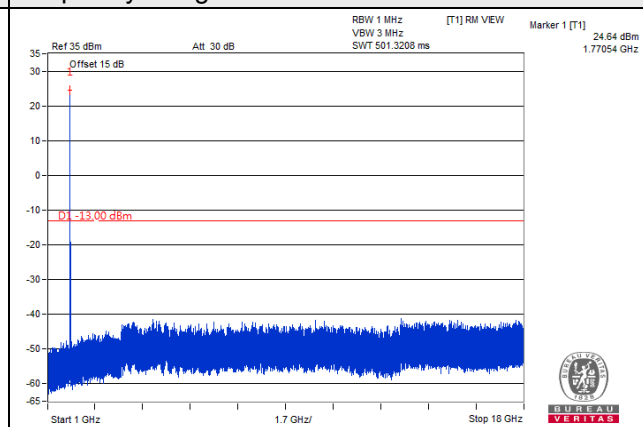


Channel 132622 (1775.0MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 18GHz

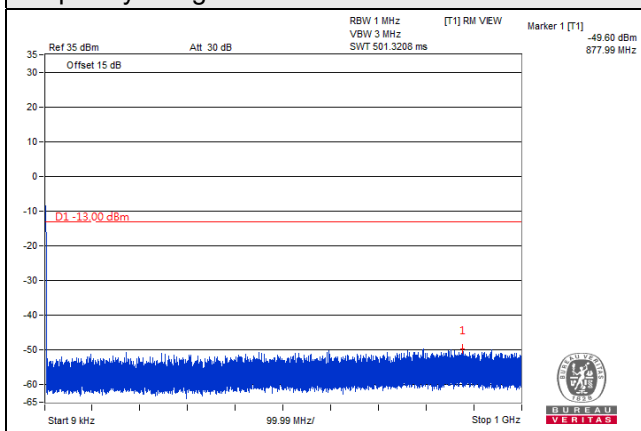


*The 9kHz signal over the limit is from Spectrum.

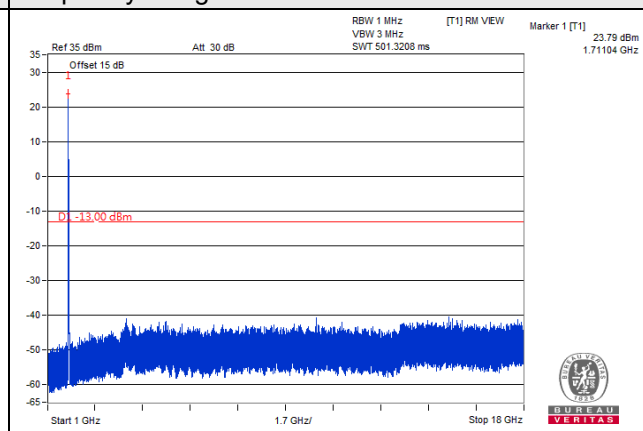
LTE Band 66, Channel Bandwidth: 15MHz

Channel 132047 (1717.5MHz)

Frequency Range : 9kHz ~ 1GHz

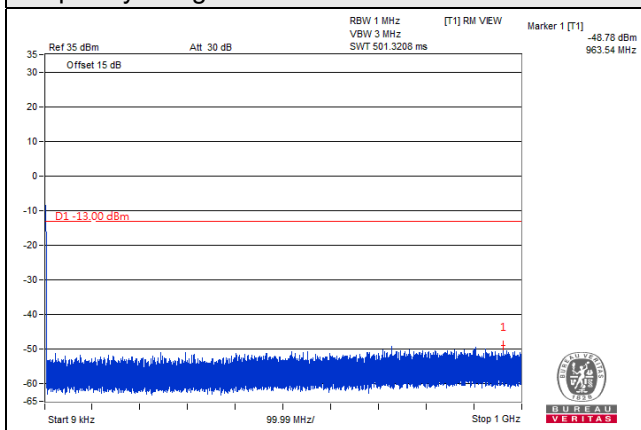


Frequency Range : 1GHz ~ 18GHz

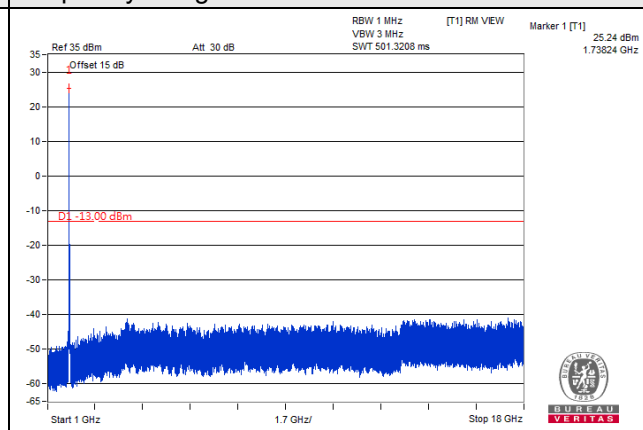


Channel 132322 (1745.0MHz)

Frequency Range : 9kHz ~ 1GHz

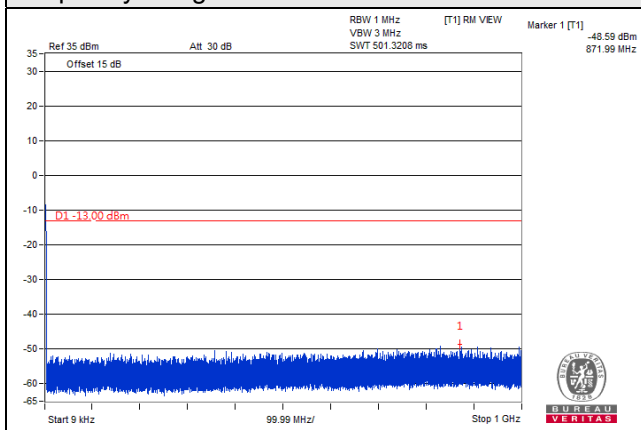


Frequency Range : 1GHz ~ 18GHz

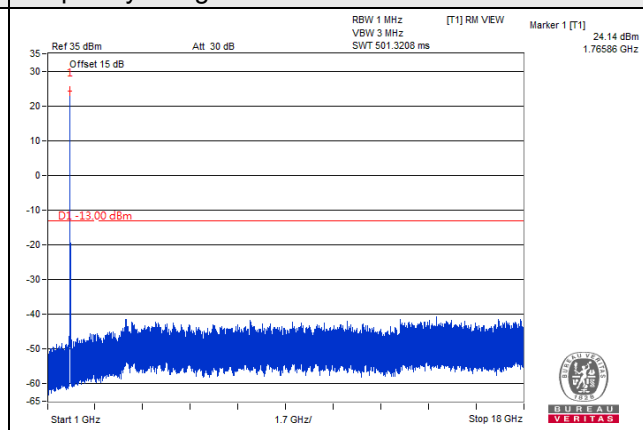


Channel 132597 (1772.5MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 18GHz

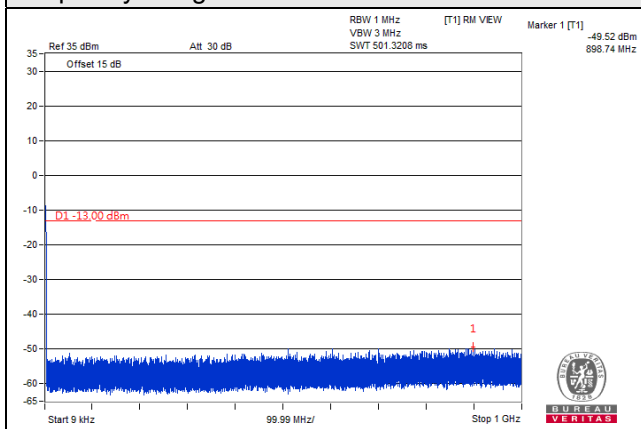


*The 9kHz signal over the limit is from Spectrum.

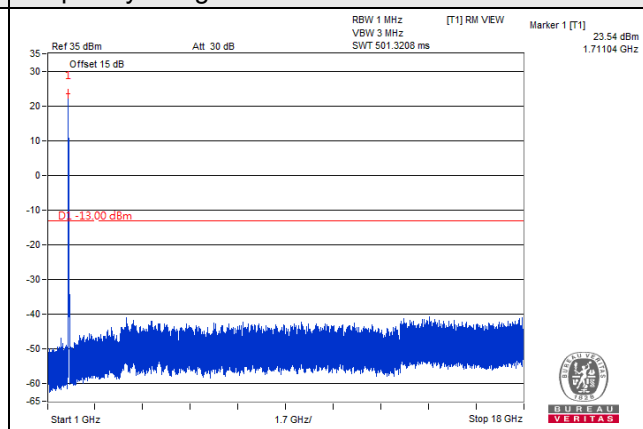
LTE Band 66, Channel Bandwidth: 20MHz

Channel 132072 (1720.0MHz)

Frequency Range : 9kHz ~ 1GHz

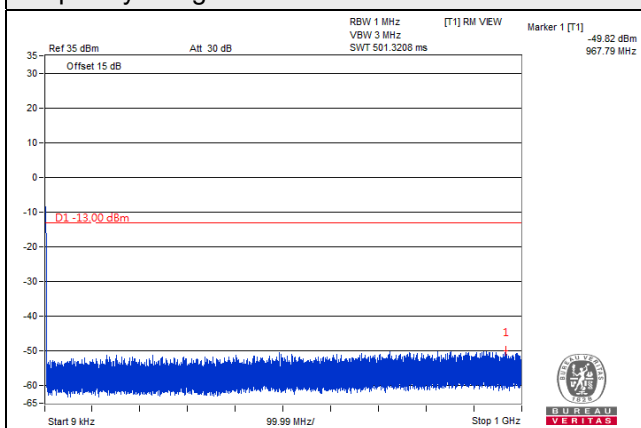


Frequency Range : 1GHz ~ 18GHz

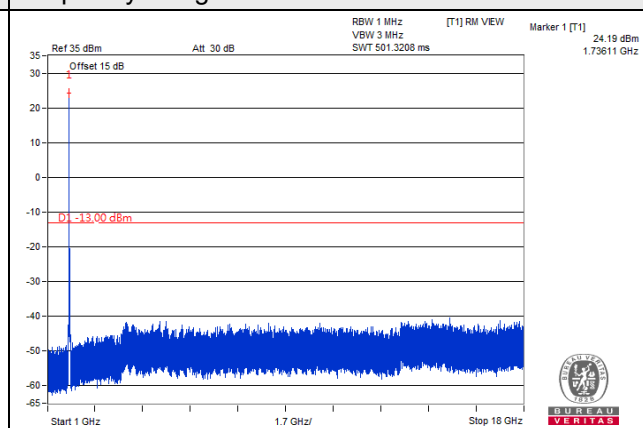


Channel 132322 (1745.0MHz)

Frequency Range : 9kHz ~ 1GHz

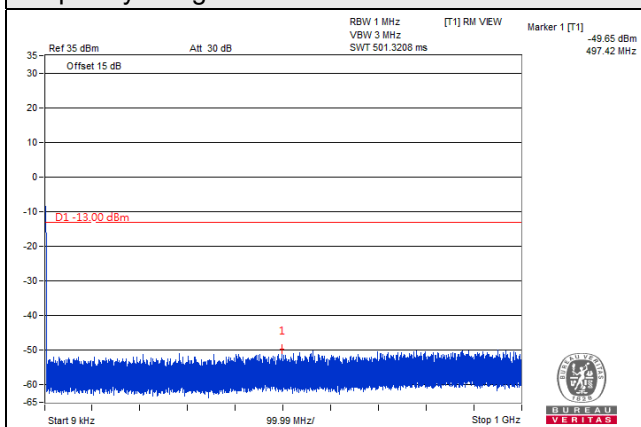


Frequency Range : 1GHz ~ 18GHz

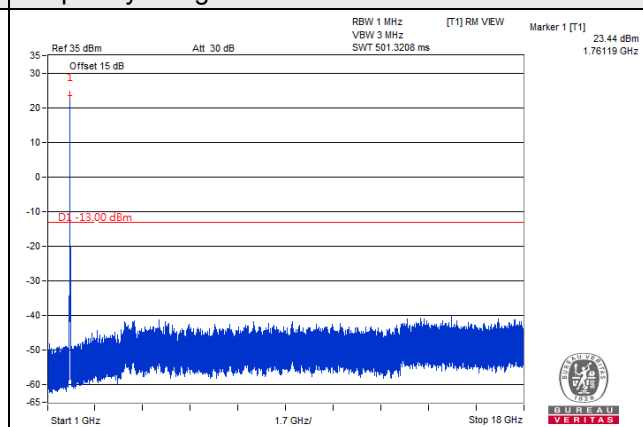


Channel 132572 (1770.0MHz)

Frequency Range : 9kHz ~ 1GHz



Frequency Range : 1GHz ~ 18GHz



*The 9kHz signal over the limit is from Spectrum.

4.8 Radiated Emission Measurement

4.8.1 Limits of Radiated Emission Measurement

For n5, LTE Band 2:

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 .

For LTE Band 66:

According to FCC 27.53(h) for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log(P)$ dB.

4.8.2 Test Procedure

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$. Correction Factor (includes EIRP and ERP unit conversion factor) = Antenna gain of substitution horn. – Tx cable loss. Measurement method refers to ANSI C63.26 section 5.5.3.2.
- c. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $\text{E.R.P power} = \text{E.I.R.P power} - 2.15\text{dBi}$.

Note:

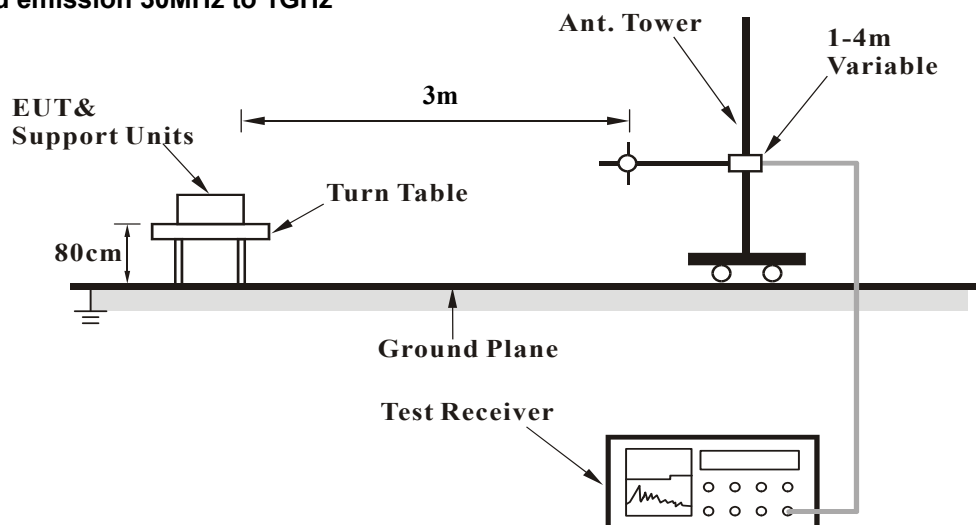
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.
2. The emission levels were against the limit of frequency range 9 kHz ~ 30 MHz: The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

4.8.3 Deviation from Test Standard

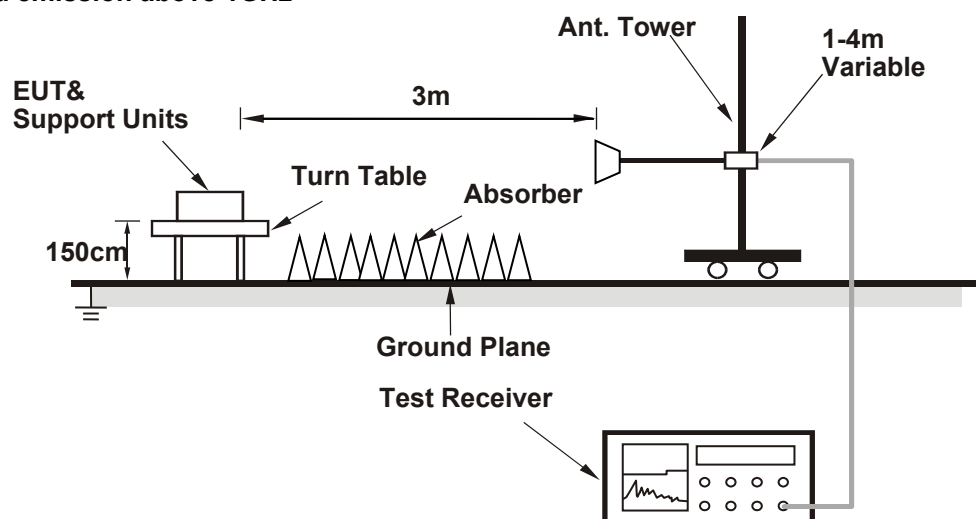
No deviation.

4.8.4 Test Setup

For radiated emission 30MHz to 1GHz



For radiated emission above 1GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.8.5 Test Results

Below 1GHz

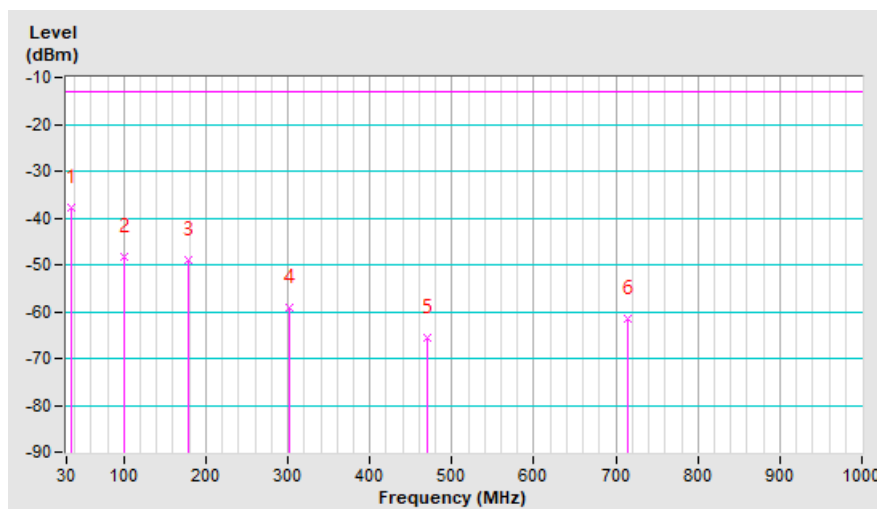
n5, Channel Bandwidth: 20MHz

Mode	TX channel 166800 (834.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	35.26	-38.90	-21.60	-16.20	-37.80	-13.00	-24.80
2	101.23	-37.80	-46.60	-1.60	-48.20	-13.00	-35.20
3	178.15	-39.00	-46.10	-3.00	-49.10	-13.00	-36.10
4	301.26	-52.40	-62.60	3.50	-59.10	-13.00	-46.10
5	469.25	-63.20	-69.10	3.50	-65.60	-13.00	-52.60
6	715.29	-62.60	-65.10	3.50	-61.60	-13.00	-48.60

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB) + 2.15dB.

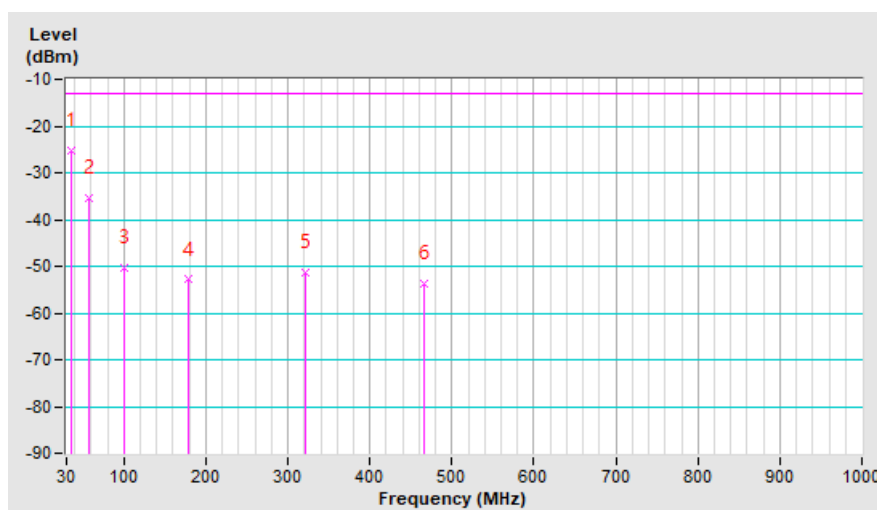


Mode	TX channel 166800 (834.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	36.54	-13.70	-10.00	-15.40	-25.40	-13.00	-12.40
2	56.48	-26.30	-30.50	-4.90	-35.40	-13.00	-22.40
3	100.21	-40.00	-48.90	-1.50	-50.40	-13.00	-37.40
4	178.59	-47.10	-49.90	-3.00	-52.90	-13.00	-39.90
5	321.56	-48.90	-55.40	4.10	-51.30	-13.00	-38.30
6	465.21	-51.50	-57.30	3.50	-53.80	-13.00	-40.80

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB) + 2.15dB.



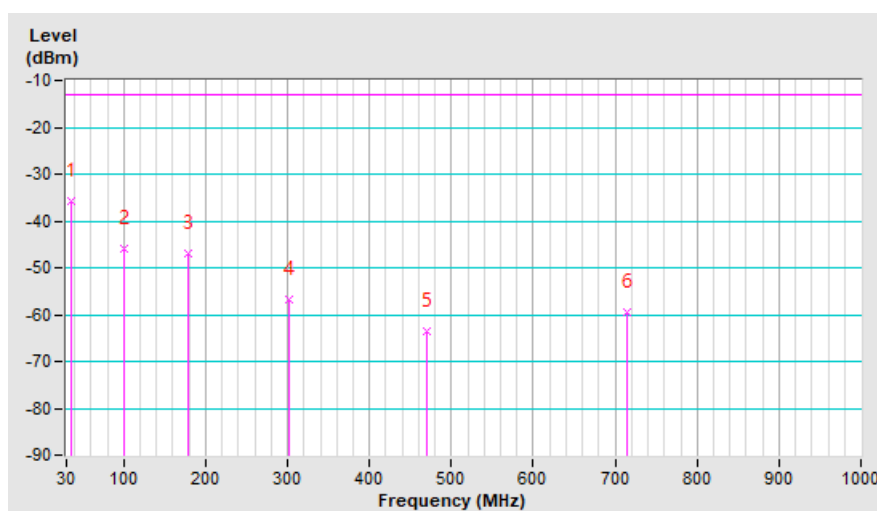
LTE Band 2, Channel Bandwidth: 5MHz

Mode	TX channel 18900 (1880.00MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	35.26	-38.90	-19.40	-16.20	-35.60	-13.00	-22.60
2	101.23	-37.70	-44.40	-1.60	-46.00	-13.00	-33.00
3	178.15	-39.00	-44.00	-3.00	-47.00	-13.00	-34.00
4	301.26	-52.30	-60.40	3.50	-56.90	-13.00	-43.90
5	469.25	-63.20	-66.90	3.50	-63.40	-13.00	-50.40
6	715.29	-62.60	-62.90	3.50	-59.40	-13.00	-46.40

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

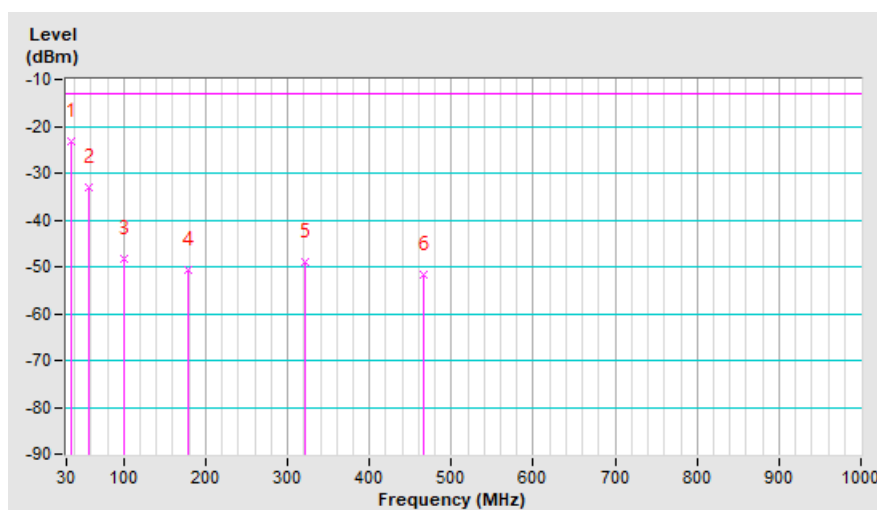


Mode	TX channel 18900 (1880.00MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	36.54	-13.70	-7.80	-15.40	-23.20	-13.00	-10.20
2	56.48	-26.30	-28.30	-4.90	-33.20	-13.00	-20.20
3	100.21	-40.00	-46.70	-1.50	-48.20	-13.00	-35.20
4	178.59	-47.10	-47.70	-3.00	-50.70	-13.00	-37.70
5	321.56	-48.90	-53.20	4.10	-49.10	-13.00	-36.10
6	465.21	-51.50	-55.10	3.50	-51.60	-13.00	-38.60

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



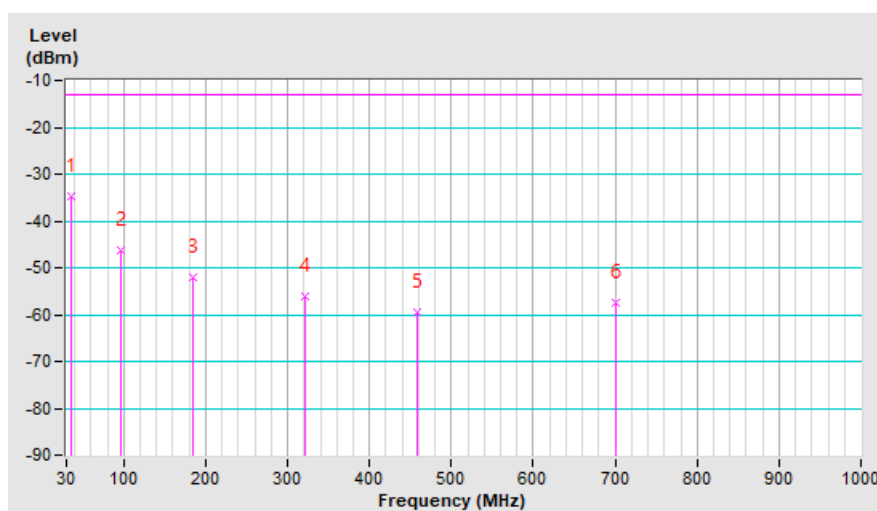
LTE Band 66, Channel Bandwidth: 5MHz

Mode	TX channel 132322 (1745.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	35.59	-38.30	-18.90	-16.00	-34.90	-13.00	-21.90
2	96.65	-37.20	-45.00	-1.20	-46.20	-13.00	-33.20
3	185.45	-43.80	-49.40	-2.70	-52.10	-13.00	-39.10
4	321.12	-52.10	-60.20	4.10	-56.10	-13.00	-43.10
5	458.78	-59.40	-62.90	3.50	-59.40	-13.00	-46.40
6	701.25	-60.20	-60.80	3.40	-57.40	-13.00	-44.40

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

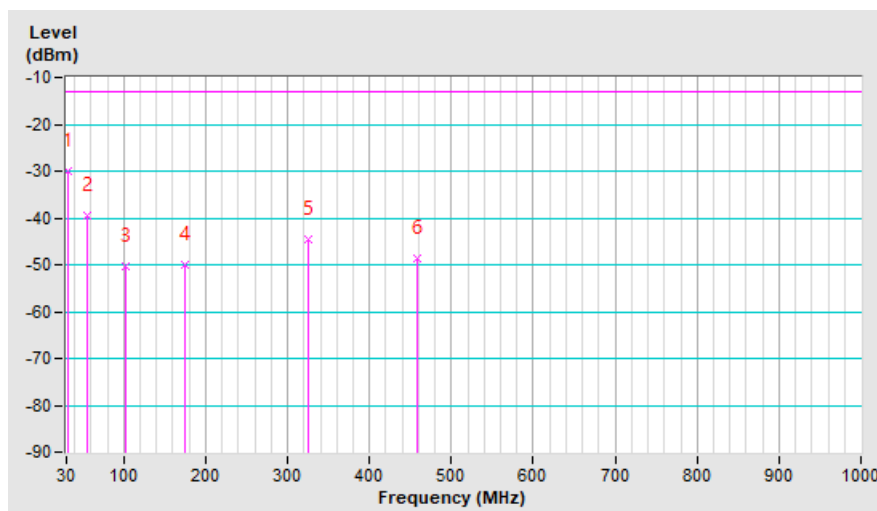


Mode	TX channel 132322 (1745.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	32.18	-19.40	-11.80	-18.10	-29.90	-13.00	-16.90
2	56.39	-32.60	-34.50	-5.00	-39.50	-13.00	-26.50
3	102.35	-42.00	-48.80	-1.70	-50.50	-13.00	-37.50
4	175.64	-46.30	-47.20	-2.80	-50.00	-13.00	-37.00
5	325.45	-44.50	-48.80	4.10	-44.70	-13.00	-31.70
6	458.69	-48.60	-52.20	3.50	-48.70	-13.00	-35.70

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Above 1GHz

n5, Channel Bandwidth: 5MHz

Mode	TX channel 165300 (826.5MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1653.00	-66.50	-58.80	0.90	-57.90	-13.00	-44.90
2	2509.50	-60.30	-54.10	0.20	-53.90	-13.00	-40.90
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1653.00	-65.90	-58.60	0.90	-57.70	-13.00	-44.70
2	2509.50	-57.80	-53.80	0.20	-53.60	-13.00	-40.60

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).

2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB) + 2.15dB.

Mode	TX channel 167300 (836.5MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1673.00	-66.50	-58.80	0.80	-58.00	-13.00	-45.00
2	2509.50	-60.50	-54.20	0.20	-54.00	-13.00	-41.00
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1673.00	-66.00	-58.60	0.80	-57.80	-13.00	-44.80
2	2509.50	-57.90	-54.00	0.20	-53.80	-13.00	-40.80

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).

2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB) + 2.15dB.

Mode	TX channel 169300 (846.5MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1693.00	-66.70	-59.10	0.70	-58.40	-13.00	-45.40
2	2539.50	-60.50	-54.30	0.20	-54.10	-13.00	-41.10
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1693.00	-65.50	-58.10	0.70	-57.40	-13.00	-44.40
2	2539.50	-57.80	-53.70	0.20	-53.50	-13.00	-40.50

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB) + 2.15dB.

n5, Channel Bandwidth: 10MHz

Mode	TX channel 165800 (829.0MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1658.00	-65.20	-57.60	0.90	-56.70	-13.00	-43.70
2	2487.00	-59.00	-52.70	0.20	-52.50	-13.00	-39.50
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1658.00	-64.50	-57.30	0.90	-56.40	-13.00	-43.40
2	2487.00	-56.40	-52.50	0.20	-52.30	-13.00	-39.30

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB) + 2.15dB.

Mode	TX channel 167300 (836.5MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1673.00	-64.70	-57.00	0.80	-56.20	-13.00	-43.20
2	2509.50	-58.70	-52.40	0.20	-52.20	-13.00	-39.20
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1673.00	-64.20	-56.90	0.80	-56.10	-13.00	-43.10
2	2509.50	-56.20	-52.30	0.20	-52.10	-13.00	-39.10

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB) + 2.15dB.

Mode	TX channel 168800 (844.0MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1688.00	-65.10	-57.50	0.70	-56.80	-13.00	-43.80
2	2487.00	-59.10	-52.80	0.20	-52.60	-13.00	-39.60
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1688.00	-64.50	-57.10	0.70	-56.40	-13.00	-43.40
2	2487.00	-56.40	-52.40	0.20	-52.20	-13.00	-39.20

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB) + 2.15dB.

n5, Channel Bandwidth: 15MHz

Mode	TX channel 166300 (831.5MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1663.00	-65.50	-57.90	0.90	-57.00	-13.00	-44.00
2	2494.50	-59.20	-52.90	0.20	-52.70	-13.00	-39.70
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1663.00	-64.20	-57.00	0.90	-56.10	-13.00	-43.10
2	2494.50	-57.60	-53.70	0.20	-53.50	-13.00	-40.50

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB) + 2.15dB.

Mode	TX channel 167300 (836.5MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1673.00	-65.30	-57.70	0.80	-56.90	-13.00	-43.90
2	2509.50	-59.00	-52.70	0.20	-52.50	-13.00	-39.50
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1673.00	-64.00	-56.70	0.80	-55.90	-13.00	-42.90
2	2509.50	-57.40	-53.40	0.20	-53.20	-13.00	-40.20

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB) + 2.15dB.

Mode	TX channel 168300 (841.5MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1683.00	-65.30	-57.80	0.80	-57.00	-13.00	-44.00
2	2524.50	-59.20	-52.90	0.10	-52.80	-13.00	-39.80
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1683.00	-64.50	-57.10	0.80	-56.30	-13.00	-43.30
2	2524.50	-57.60	-53.60	0.10	-53.50	-13.00	-40.50

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB) + 2.15dB.

n5, Channel Bandwidth: 20MHz

Mode	TX channel 166800 (834.0MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1668.00	-63.50	-55.90	0.80	-55.10	-13.00	-42.10
2	2502.00	-57.80	-51.40	0.20	-51.20	-13.00	-38.20
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1668.00	-64.90	-57.50	0.80	-56.70	-13.00	-43.70
2	2502.00	-56.80	-52.80	0.20	-52.60	-13.00	-39.60

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB) + 2.15dB.

Mode	TX channel 167300 (836.5MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1673.00	-65.00	-57.30	0.80	-56.50	-13.00	-43.50
2	2509.50	-57.80	-51.50	0.20	-51.30	-13.00	-38.30
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1673.00	-66.00	-58.60	0.80	-57.80	-13.00	-44.80
2	2509.50	-56.80	-52.80	0.20	-52.60	-13.00	-39.60

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB) + 2.15dB.

Mode	TX channel 167800 (839.0MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1678.00	-64.80	-57.20	0.80	-56.40	-13.00	-43.40
2	2517.00	-58.50	-52.20	0.10	-52.10	-13.00	-39.10
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1678.00	-64.50	-57.10	0.80	-56.30	-13.00	-43.30
2	2517.00	-56.90	-52.80	0.10	-52.70	-13.00	-39.70

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB) + 2.15dB.

LTE Band 2, Channel Bandwidth: 1.4MHz

Mode	TX channel 18607 (1850.70MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3701.40	-63.50	-55.00	1.40	-53.60	-13.00	-40.60
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3701.40	-65.20	-57.00	1.40	-55.60	-13.00	-42.60

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 18900 (1880.00MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-63.60	-55.10	1.30	-53.80	-13.00	-40.80
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-65.50	-57.20	1.30	-55.90	-13.00	-42.90

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 19193 (1909.30MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3818.60	-63.60	-55.30	1.40	-53.90	-13.00	-40.90
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3818.60	-65.60	-57.40	1.40	-56.00	-13.00	-43.00

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

LTE Band 2, Channel Bandwidth: 5MHz

Mode	TX channel 18625 (1852.50MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3705.00	-63.60	-55.10	1.40	-53.70	-13.00	-40.70
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3705.00	-65.50	-57.30	1.40	-55.90	-13.00	-42.90

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 18900 (1880.00MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-62.90	-54.40	1.30	-53.10	-13.00	-40.10
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-65.00	-56.70	1.30	-55.40	-13.00	-42.40

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 19175 (1907.50MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3815.00	-63.30	-55.00	1.40	-53.60	-13.00	-40.60
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3815.00	-65.60	-57.40	1.40	-56.00	-13.00	-43.00

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

LTE Band 2, Channel Bandwidth: 20MHz

Mode	TX channel 18700 (1860.00MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3720.00	-63.00	-54.50	1.40	-53.10	-13.00	-40.10
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3720.00	-65.10	-56.90	1.40	-55.50	-13.00	-42.50

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 18900 (1880.00MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-63.10	-54.60	1.30	-53.30	-13.00	-40.30
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-65.00	-56.70	1.30	-55.40	-13.00	-42.40

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 19100 (1900.00MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3800.00	-62.90	-54.50	1.30	-53.20	-13.00	-40.20
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3800.00	-64.50	-56.30	1.30	-55.00	-13.00	-42.00

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

LTE Band 66, Channel Bandwidth: 1.4MHz

Mode	TX channel 131979 (1710.7MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3421.40	-67.40	-58.80	1.30	-57.50	-13.00	-44.50
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3421.40	-64.90	-56.80	1.30	-55.50	-13.00	-42.50

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB).

Mode	TX channel 132322 (1745.0MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3490.00	-67.30	-59.10	1.50	-57.60	-13.00	-44.60
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3490.00	-64.40	-56.80	1.50	-55.30	-13.00	-42.30

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB).

Mode	TX channel 132665 (1779.3MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3558.60	-67.60	-59.10	1.40	-57.70	-13.00	-44.70
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3558.60	-65.00	-57.20	1.40	-55.80	-13.00	-42.80

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB).

LTE Band 66, Channel Bandwidth: 5MHz

Mode	TX channel 131997 (1712.5MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3425.00	-67.40	-58.80	1.30	-57.50	-13.00	-44.50
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3425.00	-64.70	-56.60	1.30	-55.30	-13.00	-42.30

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB).

Mode	TX channel 132322 (1745.0MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3490.00	-67.30	-59.10	1.50	-57.60	-13.00	-44.60
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3490.00	-63.50	-55.90	1.50	-54.40	-13.00	-41.40

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB).

Mode	TX channel 132647 (1777.5MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3555.00	-67.10	-58.70	1.40	-57.30	-13.00	-44.30
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3555.00	-64.40	-56.60	1.40	-55.20	-13.00	-42.20

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB).

LTE Band 66, Channel Bandwidth: 20MHz

Mode	TX channel 132072 (1720.0MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3440.00	-67.70	-59.20	1.30	-57.90	-13.00	-44.90
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3440.00	-64.20	-56.20	1.30	-54.90	-13.00	-41.90

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB).

Mode	TX channel 132322 (1745.0MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3490.00	-66.80	-58.60	1.50	-57.10	-13.00	-44.10
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3490.00	-64.20	-56.60	1.50	-55.10	-13.00	-42.10

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB).

Mode	TX channel 132572 (1770.0MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Jones Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3540.00	-66.80	-58.40	1.40	-57.00	-13.00	-44.00
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3540.00	-64.40	-56.60	1.40	-55.20	-13.00	-42.20

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) - Cable Loss (dB).

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

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