

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 22
47 CFR FCC Part 24
47 CFR FCC Part 27
47 CFR FCC Part 2

Report No.: RFBEDW-WTW-P25030825-3

FCC ID: GKRRXLN3N

Product: LGA Module

Brand: COMPAL

Model No.: RXL-N3n

Received Date: 2025/3/27

Test Date: 2025/5/22 ~ 2025/7/3

Issued Date: 2025/7/23

Applicant: Compal Electronics, Inc.

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FCC Registration /

Designation Number: 788550 / TW0003

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2025/7/23

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Release Control Record

Issue No.	Description	Date Issued
RFBEDW-WTW-P25030825-3	Original Release	2025/7/23

1 Certificate

Product: LGA Module

Brand: COMPAL

Test Model: RXL-N3n

Sample Status: Engineering sample

Applicant: Compal Electronics, Inc.

Test Date: 2025/5/22 ~ 2025/7/3

Standard: 47 CFR FCC Part 22
47 CFR FCC Part 24
47 CFR FCC Part 27
47 CFR FCC Part 2

Measurement procedure: ANSI/TIA/EIA-603-E 2016
ANSI C63.26-2015
KDB 971168 D01 Power Meas License Digital Systems v03r01
KDB 971168 D02 Misc Rev Approv License Devices v02r02

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.

2 Summary of Test Results

47 CFR FCC Part 22 47 CFR FCC Part 24 47 CFR FCC Part 27 47 CFR FCC Part 2			
Standard / Clause	Test Item	Result	Remark
Part 2.1046 Part 22.913(a) Part 24.232(c) Part 27.50(d) Part 27.50(h) Part 27.50(c) Part 27.50(k)	Effective Radiated Power and Equivalent Isotropically Radiated Power	Pass	Meet the requirement of limit.
Part 2.1047	Modulation Characteristics	N/A	Refer to Note 2
Part 22.913(d) Part 24.232(d) Part 27.50(d) Part 27.50(k)(4)	Peak to Average Ratio	Pass	Meet the requirement of limit.
Part 2.1049	Bandwidth	Pass	Meet the requirement of limit.
Part 2.1051 Part 22.917 Part 24.238 Part 27.53(h) Part 27.53(m) Part 27.53(g) Part 27.53(n)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
Part 2.1053 Part 22.917 Part 24.238 Part 27.53(h) Part 27.53(m) Part 27.53(g) Part 27.53(n)	Radiated Spurious Emissions below 1GHz	Pass	Minimum passing margin is -18.67 dB at 131.22 MHz
Part 2.1053 Part 22.917 Part 24.238 Part 27.53(h) Part 27.53(m) Part 27.53(g) Part 27.53(n)	Radiated Spurious Emissions above 1GHz	Pass	Minimum passing margin is -18.81 dB at 5360.00 MHz
Part 2.1055 Part 22.355 Part 24.235 Part 27.54	Frequency Stability	Pass	Meet the requirement of limit.

Note: 1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2. LTE CA mode is similar to digital modulation in LTE single frequency band, so please refer to BV CPS report no.: RFBEDW-WTW-P25030825-5 for the modulation characteristics data of CA mode.

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:

Parameter	Specification	Uncertainty (±)
Effective Radiated Power and Equivalent Isotropically Radiated Power	-	1.371 dB
Peak to Average Ratio	-	0.920 dB
26dB Bandwidth / Occupied Bandwidth	-	453.93 Hz / 72 Hz
Conducted Spurious Emissions	-	2.12 dB
Radiated Spurious Emissions below 1GHz	9 kHz ~ 30 MHz	2.6 dB
	30 MHz ~ 1 GHz	4.47 dB
Radiated Spurious Emissions above 1GHz	1 GHz ~ 18 GHz	2.29 dB
	18 GHz ~ 40 GHz	2.29 dB
Frequency Stability	-	0.176 ppm

The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	LGA Module
Brand	COMPAL
Test Model	RXL-N3n
Status of EUT	Engineering sample
Power Supply Rating	3.8Vdc

Note:

1. The EUT uses following support units.

Jig	
Brand	Compal
Model	ZYN6
Adapter	
Brand	ChenzhouFrecom Electronics Co. Ltd
Model	F24L5-120200SPAU
Input Power	100-240V~50/60Hz 0.6A
Output Power	12.0V $\overline{\sim}$ 2.0A 24.0W

2. EUT Overview

Mode	Bandwidth	Modulation	Max. EIRP (W)	Max. EIRP (dBm)	Emission Designator
LTE Band 2 (CA 2C)	20MHz + 20MHz	QPSK	0.681	28.33	37M7G7D
		16QAM	0.535	27.28	37M7D7W
		64QAM	0.424	26.27	37M7D7W
		256QAM	0.426	26.29	37M6D7W
LTE Band 7 (CA 7C)	20MHz + 20MHz	QPSK	0.647	28.11	37M8G7D
		16QAM	0.512	27.09	37M8D7W
		64QAM	0.401	26.03	37M7D7W
		256QAM	0.408	26.11	37M7D7W
LTE Band 41 (CA 41C)	20MHz + 20MHz	QPSK	1.199	30.79	37M6G7D
		16QAM	0.944	29.75	37M6D7W
		64QAM	0.740	28.69	37M6D7W
		256QAM	0.741	28.70	37M5D7W
LTE Band 42 (3.45 GHz ~ 3.55 GHz) (CA 42C)	20MHz + 20MHz	QPSK	0.217	23.37	37M7G7D
		16QAM	0.169	22.27	37M7D7W
		64QAM	0.133	21.25	37M7D7W
		256QAM	0.134	21.28	37M7D7W
LTE Band 66 (CA 66B)	10MHz + 10MHz	QPSK	0.635	28.03	18M9G7D
		16QAM	0.500	26.99	18M9D7W
		64QAM	0.399	26.01	18M9D7W
		256QAM	0.396	25.98	18M9D7W
LTE Band 66 (CA 66C)	20MHz + 20MHz	QPSK	0.643	28.08	37M7G7D
		16QAM	0.505	27.03	37M7D7W
		64QAM	0.399	26.01	37M6D7W
		256QAM	0.397	25.99	37M7D7W
Mode	Bandwidth	Modulation	Max. ERP (W)	Max. ERP (dBm)	Emission Designator
LTE Band 5 (CA 5B)	10MHz + 10MHz	QPSK	0.280	24.47	18M9G7D
		16QAM	0.220	23.42	18M9D7W
		64QAM	0.175	22.44	18M9D7W
		256QAM	0.175	22.42	18M9D7W
LTE Band 12 (CA 12B)	5MHz + 10MHz	QPSK	0.260	24.15	13M9G7D
		16QAM	0.205	23.11	13M9D7W
		64QAM	0.162	22.09	13M9D7W
		256QAM	0.162	22.10	13M9D7W

3. For CA mode configuration, please consult the manufacturer to declare the test mode.

4. The EUT support the following CA Configuration.

Band Configuration
2C
5B
7C
12C
41C
42C
48C
66B
66C

5. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Ant. Type	External				
Ant. Connector	I-pex				
Band	Freq. Range (MHz)	Ant. 0 (Main)	Ant. 1 (DRx)	Ant. 2 (DRx)	Ant. 3 (DRx)
CA 2C (Ant 0)	1850 ~ 1910	3.2	3.2	3.2	3.2
CA 5B (Ant 0)	824 ~ 849	1.25	1.25	1.25	1.25
CA 7C (Ant 3)	2500 ~ 2570	2.88	2.88	2.88	2.88
CA 12C (Ant 0)	698 ~ 716	0.78	0.78	0.78	0.78
CA 41C (Ant 3)	2496 ~ 2690	2.75	2.75	2.75	2.75
CA 42C (Ant 0)	3400 ~ 3600	-1.5	-1.5	-1.5	-1.5
CA 66B (Ant 0)	1710 ~ 1780	2.31	2.31	2.31	2.31
CA 66C (Ant 0)	1710 ~ 1780	2.31	2.31	2.31	2.31

Ant. No.	Cable Loss (dB)	Cable Length (mm)
Ant. 0	1.5	141.1
Ant. 1	1.3	120.3
Ant. 2	1	78.2
Ant. 3	1.3	121.2

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

3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	1. The antenna of EUT can be used in the following ways: 0 degree/90 degrees. Pre-scan these ways and find the worst case as a representative test condition. 2. Pre-Scan has been conducted to determine the worst-case from all possible combinations of EUT configure mode (1TX or 2TX if available), channel, bandwidth, modulation and RB mode. See below table(s) for details.
Worst Case:	1. 0 degree/90 degrees Worst Condition: 90 degrees

For LTE Band 2 (CA 2C)

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Equivalent Isotropically Radiated Power	18700 (1860.0MHz) + 18898 (1879.8MHz) 18801 (1870.1MHz) + 18999 (1889.9MHz) 18902 (1880.2MHz) + 19100 (1900.0MHz)	20MHz + 20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
Peak to Average Ratio	18801 (1870.1MHz) + 18999 (1889.9MHz)	20MHz + 20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
Bandwidth	18801 (1870.1MHz) + 18999 (1889.9MHz)	20MHz + 20MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
Conducted Spurious Emissions	18700 (1860.0MHz) + 18898 (1879.8MHz) 18801 (1870.1MHz) + 18999 (1889.9MHz) 18902 (1880.2MHz) + 19100 (1900.0MHz)	20MHz + 20MHz	QPSK / 256QAM	1 RB Full RB
Radiated Spurious Emissions below 1GHz	18902 (1880.2MHz) + 19100 (1900.0MHz)	20MHz + 20MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	18700 (1860.0MHz) + 18898 (1879.8MHz) 18801 (1870.1MHz) + 18999 (1889.9MHz) 18902 (1880.2MHz) + 19100 (1900.0MHz)	20MHz + 20MHz	QPSK	1 RB
Frequency Stability	18801 (1870.1MHz) + 18999 (1889.9MHz)	20MHz + 20MHz	QPSK	Full RB

For LTE Band 5 (CA 5B)

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Effective Radiated Power	20450 (829.0 MHz) + 20549 (838.9 MHz) 20476 (831.6 MHz) + 20575 (841.5 MHz) 20501 (834.1 MHz) + 20600 (844.0 MHz)	10MHz + 10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
Peak to Average Ratio	20476 (831.6 MHz) + 20575 (841.5 MHz)	10MHz + 10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
Bandwidth	20476 (831.6 MHz) + 20575 (841.5 MHz)	10MHz + 10MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
Conducted Spurious Emissions	20450 (829.0 MHz) + 20549 (838.9 MHz) 20476 (831.6 MHz) + 20575 (841.5 MHz) 20501 (834.1 MHz) + 20600 (844.0 MHz)	10MHz + 10MHz	QPSK / 256QAM	1 RB Full RB
Radiated Spurious Emissions below 1GHz	20450 (829.0 MHz) + 20549 (838.9 MHz)	10MHz + 10MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	20450 (829.0 MHz) + 20549 (838.9 MHz) 20476 (831.6 MHz) + 20575 (841.5 MHz) 20501 (834.1 MHz) + 20600 (844.0 MHz)	10MHz + 10MHz	QPSK	1 RB
Frequency Stability	20476 (831.6 MHz) + 20575 (841.5 MHz)	10MHz + 10MHz	QPSK	Full RB

For LTE Band 7 (CA 7C)

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Equivalent Isotropically Radiated Power	20850 (2510.0 MHz) + 21048 (2529.8 MHz) 21001 (2525.1 MHz) + 21199 (2544.9 MHz) 21152 (2540.2 MHz) + 21350 (2560.0 MHz)	20MHz + 20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
Peak to Average Ratio	21001 (2525.1 MHz) + 21199 (2544.9 MHz)	20MHz + 20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
Bandwidth	21001 (2525.1 MHz) + 21199 (2544.9 MHz)	20MHz + 20MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
Conducted Spurious Emissions	20850 (2510.0 MHz) + 21048 (2529.8 MHz) 21001 (2525.1 MHz) + 21199 (2544.9 MHz) 21152 (2540.2 MHz) + 21350 (2560.0 MHz)	20MHz + 20MHz	QPSK / 256QAM	1 RB Full RB
Radiated Spurious Emissions below 1GHz	21001 (2525.1 MHz) + 21199 (2544.9 MHz)	20MHz + 20MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	20850 (2510.0 MHz) + 21048 (2529.8 MHz) 21001 (2525.1 MHz) + 21199 (2544.9 MHz) 21152 (2540.2 MHz) + 21350 (2560.0 MHz)	20MHz + 20MHz	QPSK	1 RB
Frequency Stability	21001 (2525.1 MHz) + 21199 (2544.9 MHz)	20MHz + 20MHz	QPSK	Full RB

For LTE Band 12 (CA 12B)

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Effective Radiated Power	23038 (701.8 MHz) + 23110 (709 MHz) 23048 (702.8 MHz) + 23120 (710 MHz) 23058 (703.8 MHz) + 23130 (711 MHz)	5MHz + 10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
Peak to Average Ratio	23048 (702.8 MHz) + 23120 (710 MHz)	5MHz + 10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
Bandwidth	23048 (702.8 MHz) + 23120 (710 MHz)	5MHz + 10MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
Conducted Spurious Emissions	23038 (701.8 MHz) + 23110 (709 MHz) 23048 (702.8 MHz) + 23120 (710 MHz) 23058 (703.8 MHz) + 23130 (711 MHz)	5MHz + 10MHz	QPSK / 256QAM	1 RB Full RB
Radiated Spurious Emissions below 1GHz	23038 (701.8 MHz) + 23110 (709 MHz)	5MHz + 10MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	23038 (701.8 MHz) + 23110 (709 MHz) 23048 (702.8 MHz) + 23120 (710 MHz) 23058 (703.8 MHz) + 23130 (711 MHz)	5MHz + 10MHz	QPSK	1 RB
Frequency Stability	23048 (702.8 MHz) + 23120 (710 MHz)	5MHz + 10MHz	QPSK	Full RB

For LTE Band 41 (CA 41C)

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Equivalent Isotropically Radiated Power	39750 (2506.0MHz) + 39948 (2525.8MHz) 40521 (2583.1MHz) + 40719 (2602.9MHz) 41292 (2660.2MHz) + 41490 (2680.0MHz)	20MHz + 20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
Peak to Average Ratio	40521 (2583.1MHz) + 40719 (2602.9MHz)	20MHz + 20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
Bandwidth	40521 (2583.1MHz) + 40719 (2602.9MHz)	20MHz + 20MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
Conducted Spurious Emissions	39750 (2506.0MHz) + 39948 (2525.8MHz) 40521 (2583.1MHz) + 40719 (2602.9MHz) 41292 (2660.2MHz) + 41490 (2680.0MHz)	20MHz + 20MHz	QPSK / 256QAM	1 RB Full RB
Radiated Spurious Emissions below 1GHz	40521 (2583.1MHz) + 40719 (2602.9MHz)	20MHz + 20MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	39750 (2506.0MHz) + 39948 (2525.8MHz) 40521 (2583.1MHz) + 40719 (2602.9MHz) 41292 (2660.2MHz) + 41490 (2680.0MHz)	20MHz + 20MHz	QPSK	1 RB
Frequency Stability	40521 (2583.1MHz) + 40719 (2602.9MHz)	20MHz + 20MHz	QPSK	Full RB

Note: LTE Band 38 (CA 38C) is covered by LTE Band 41 (CA 41C)

For LTE Band 42 (3.45 GHz ~ 3.55 GHz) (CA 42C)

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Equivalent Isotropically Radiated Power	42190 (3460.0 MHz) + 42388 (3479.8 MHz) 42490 (3490.0 MHz) + 42689 (3509.9 MHz) 42791 (3520.1 MHz) + 42990 (3540.0 MHz)	20MHz + 20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
Peak to Average Ratio	42490 (3490.0 MHz) + 42689 (3509.9 MHz)	20MHz + 20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
Bandwidth	42490 (3490.0 MHz) + 42689 (3509.9 MHz)	20MHz + 20MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
Conducted Spurious Emissions	42190 (3460.0 MHz) + 42388 (3479.8 MHz) 42490 (3490.0 MHz) + 42689 (3509.9 MHz) 42791 (3520.1 MHz) + 42990 (3540.0 MHz)	20MHz + 20MHz	QPSK / 256QAM	1 RB Full RB
Radiated Spurious Emissions below 1GHz	42190 (3460.0 MHz) + 42388 (3479.8 MHz)	20MHz + 20MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	42190 (3460.0 MHz) + 42388 (3479.8 MHz) 42490 (3490.0 MHz) + 42689 (3509.9 MHz) 42791 (3520.1 MHz) + 42990 (3540.0 MHz)	20MHz + 20MHz	QPSK	1 RB
Frequency Stability	42490 (3490.0 MHz) + 42689 (3509.9 MHz)	20MHz + 20MHz	QPSK	Full RB

For LTE Band 66 (CA 66B)

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Equivalent Isotropically Radiated Power	132022 (1715.0 MHz) + 132121 (1724.9 MHz) 132373 (1750.1 MHz) + 132472 (1760.0 MHz) 132523 (1765.1 MHz) + 132622 (1775.0 MHz)	10MHz + 10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
Peak to Average Ratio	132373 (1750.1 MHz) + 132472 (1760.0 MHz)	10MHz + 10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
Bandwidth	132373 (1750.1 MHz) + 132472 (1760.0 MHz)	10MHz + 10MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
Conducted Spurious Emissions	132022 (1715.0 MHz) + 132121 (1724.9 MHz) 132373 (1750.1 MHz) + 132472 (1760.0 MHz) 132523 (1765.1 MHz) + 132622 (1775.0 MHz)	10MHz + 10MHz	QPSK / 256QAM	1 RB Full RB
Radiated Spurious Emissions below 1GHz	132523 (1765.1 MHz) + 132622 (1775.0 MHz)	10MHz + 10MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	132022 (1715.0 MHz) + 132121 (1724.9 MHz) 132373 (1750.1 MHz) + 132472 (1760.0 MHz) 132523 (1765.1 MHz) + 132622 (1775.0 MHz)	10MHz + 10MHz	QPSK	1 RB
Frequency Stability	132373 (1750.1 MHz) + 132472 (1760.0 MHz)	10MHz + 10MHz	QPSK	Full RB

For LTE Band 66 (CA 66C)

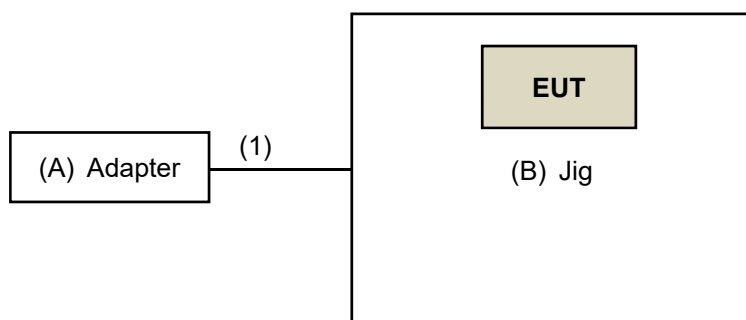
Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Equivalent Isotropically Radiated Power	132072 (1720.0 MHz) + 132270 (1739.8 MHz) 132323 (1745.1 MHz) + 132521 (1764.9 MHz) 132374 (1750.2 MHz) + 132572 (1770.0 MHz)	20MHz + 20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
Peak to Average Ratio	132323 (1745.1 MHz) + 132521 (1764.9 MHz)	20MHz + 20MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB
Bandwidth	132323 (1745.1 MHz) + 132521 (1764.9 MHz)	20MHz + 20MHz	QPSK / 16QAM / 64QAM / 256QAM	Full RB
Conducted Spurious Emissions	132072 (1720.0 MHz) + 132270 (1739.8 MHz) 132323 (1745.1 MHz) + 132521 (1764.9 MHz) 132374 (1750.2 MHz) + 132572 (1770.0 MHz)	20MHz + 20MHz	QPSK / 256QAM	1 RB Full RB
Radiated Spurious Emissions below 1GHz	132374 (1750.2 MHz) + 132572 (1770.0 MHz)	20MHz + 20MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	132072 (1720.0 MHz) + 132270 (1739.8 MHz) 132323 (1745.1 MHz) + 132521 (1764.9 MHz) 132374 (1750.2 MHz) + 132572 (1770.0 MHz)	20MHz + 20MHz	QPSK	1 RB
Frequency Stability	132323 (1745.1 MHz) + 132521 (1764.9 MHz)	20MHz + 20MHz	QPSK	Full RB

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

3.4 Test Program Used and Operation Descriptions

There is no need to controlling software during the test, and the EUT can be paired with the Radio Communication Analyzer to test the connection when it is powered on.

3.5 Connection Diagram of EUT and Peripheral Devices



Under Table

Remote Site



(C) Radio
Communication
Analyzer

3.6 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Adapter	ChenzhouFrecom Electronics Co. Ltd	F24L5-120200SPAU	NA	NA	Supplied by applicant
B	Jig	Compal	ZYN6	NA	NA	Supplied by applicant
C	Radio Communication Analyzer	Anritsu	MT8821C	6261806803	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	AC Cable	1	1	No	0	Supplied by applicant

4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Fixed Attenuator Woken	00800A1K01A-10	00800A1K01A-10-01	2024/5/29 2025/5/23	2025/5/28 2026/5/22
PXA Signal Analyzer Keysight	N9030B	MY57140938	2025/3/24	2026/3/23
Radio Communication Analyzer Anritsu	MT8821C	6261806803	2025/2/19	2026/2/18
Software BV	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2025/5/22 ~ 2025/7/3

4.2 Peak to Average Ratio

Refer to section 4.1 to get information of the instruments.

4.3 Bandwidth

Refer to section 4.1 to get information of the instruments.

4.4 Conducted Spurious Emissions

Refer to section 4.1 to get information of the instruments.

4.5 Radiated Spurious Emissions below 1GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn BV ADT	AT100	AT93021705	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-160	2024/10/9	2025/10/8
Loop Antenna TESEQ	HLA 6121	45745	2024/8/21	2025/8/20
MXE EMI Receiver Agilent	N9038A	MY51210203	2024/8/27	2025/8/26
Preamplifier Agilent	8447D	2944A10638	2025/04/27	2026/04/26
RF Coaxial Cable Woken	8D-FB	Cable-CH9-01	2025/04/27	2026/04/26
Signal & Spectrum Analyzer R&S	FSW43	101866	2025/3/25	2026/3/24
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table BV ADT	TT100	TT93021705	N/A	N/A
Turn Table Controller BV ADT	SC100	SC93021705	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 4.
2. Tested Date: 2025/6/18

4.6 Radiated Spurious Emissions above 1GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn BV ADT	AT100	AT93021705	N/A	N/A
Boresight antenna tower fixture BV	BAF-02	5	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-1169	2024/11/10	2025/11/9
	BBHA 9170	9170-480	2024/11/10	2025/11/9
		BBHA9170243	2024/11/10	2025/11/9
MXE EMI Receiver Agilent	N9038A	MY51210203	2024/8/27	2025/8/26
Preamplifier Agilent	8449B	3008A02367	2025/1/5	2026/1/4
Preamplifier EMCI	EMC 184045	980116	2024/9/24	2025/9/23
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	2024/7/6	2025/7/5
	EMC102-KM-KM-3000	150929	2024/7/6	2025/7/5
RF Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	2025/1/5	2026/1/4
RF Coaxial Cable HUBER+SUHNER&EMCI	SUCOFLEX 104& EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	2025/1/5	2026/1/4
Signal & Spectrum Analyzer R&S	FSW43	101866	2025/3/25	2026/3/24
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table BV ADT	TT100	TT93021705	N/A	N/A
Turn Table Controller BV ADT	SC100	SC93021705	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 4.
2. Tested Date: 2025/6/18

4.7 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
3-channel DC power supply OWON	ODP3033	ODP30332128138	N/A	N/A
Digital Multimeter Fluke	8050A	4660081	2025/06/06	2026/06/05
Fixed Attenuator Woken	00800A1K01A-10	00800A1K01A-10-01	2025/5/23	2026/5/22
PXA Signal Analyzer Keysight	N9030B	MY57140938	2025/3/24	2026/3/23
Radio Communication Analyzer Anritsu	MT8821C	6261806803	2025/2/19	2026/2/18
Software BV	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A
Temperature & Humidity Chamber Terchy	MHU-225AU	920842	2025/06/25	2026/06/24

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2025/7/3

5 Limits of Test Items

5.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

For LTE Band 2 (CA 2C):

Mobile and portable stations are limited to 2 watts EIRP.

For LTE Band 5 (CA 5B):

The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

For LTE Band 12 (CA 12B):

Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

For LTE Band 7 (CA 7C), LTE Band 41 (CA 41C):

Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

For LTE Band 42 (3.45 GHz ~ 3.55 GHz) (CA 42C):

Mobile devices are limited to 1Watt (30 dBm) EIRP.

For LTE Band 66 (CA 66B), LTE Band 66 (CA 66C):

Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

5.2 Peak to Average Ratio

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.

5.3 Bandwidth

According to FCC 47 CFR part 2.1049, the occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5% of the total mean power radiated by a given emission.

5.4 Conducted Spurious Emissions

For LTE Band 2 (CA 2C), LTE Band 5 (CA 5B):

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 -13 dBm.

For LTE Band 7 (CA 7C), LTE Band 41 (CA 41C):

According to FCC 47 CFR part 27.53(m)(4) regulations, any transmit power outside of the channel edge must be attenuated below the transmitting power (P) by a factor shall be not less than $40 + 10 \log(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth. In addition, the attenuation factor shall not be less than $43 + 10 \log(P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log(P)$ dB at or below 2490.5 MHz. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed.

For LTE Band 12 (CA 12B):

According to FCC 47 CFR part 27.53(g), for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

For LTE Band 42 (3.45 GHz ~ 3.55 GHz) (CA 42C):

According to FCC 47 CFR part 27.53(n), for operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz. Compliance with this paragraph (n)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz.

For LTE Band 66 (CA 66B), LTE Band 66 (CA 66C):

According to FCC 47 CFR part 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 MHz 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. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

5.5 Radiated Spurious Emissions below 1GHz

For LTE Band 2 (CA 2C), LTE Band 5 (CA 5B):

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 -13 dBm.

For LTE Band 12 (CA 12B):

According to FCC 47 CFR part 27.53(g), for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. The limit of emissions is equal to -13 dBm.

For LTE Band 7 (CA 7C), LTE Band 41 (CA 41C):

According to FCC 47 CFR part 27.53(m)(4), 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 $55 + 10 \log (P)$ dB. The emission limit equal to -25 dBm.

For LTE Band 42 (3.45 GHz ~ 3.55 GHz) (CA 42C):

According to FCC 47 CFR part 27.53(n), for operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

For LTE Band 66 (CA 66B), LTE Band 66 (CA 66C):

According to FCC 47 CFR part 27.53(h), for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz 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. The limit of emission is equal to -13 dBm.

5.6 Radiated Spurious Emissions above 1GHz

For LTE Band 2 (CA 2C), LTE Band 5 (CA 5B):

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 -13 dBm.

For LTE Band 12 (CA 12B):

According to FCC 47 CFR part 27.53(g), for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB. The limit of emissions is equal to -13 dBm.

For LTE Band 7 (CA 7C), LTE Band 41 (CA 41C):

According to FCC 47 CFR part 27.53(m)(4), 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 $55 + 10 \log(P)$ dB. The emission limit equal to -25 dBm.

For LTE Band 42 (3.45 GHz ~ 3.55 GHz) (CA 42C):

According to FCC 47 CFR part 27.53(n), for operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

For LTE Band 66 (CA 66B), LTE Band 66 (CA 66C):

According to FCC 47 CFR part 27.53(h), for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz 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. The limit of emission is equal to -13 dBm.

5.7 Frequency Stability

For LTE Band 5 (CA 5B):

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

For LTE Band 2 (CA 2C), LTE Band 7 (CA 7C), LTE Band 12 (CA 12B), LTE Band 41 (CA 41C), LTE Band 42 (3.45 GHz ~ 3.55 GHz) (CA 42C), LTE Band 66 (CA 66B), LTE Band 66 (CA 66C):

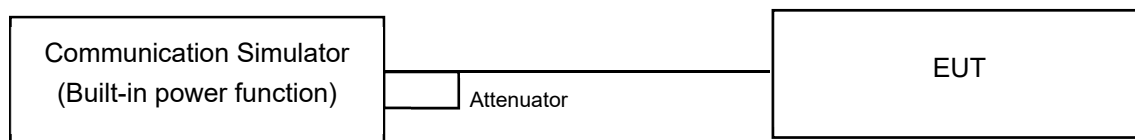
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation (authorized frequency block).

6 Test Arrangements

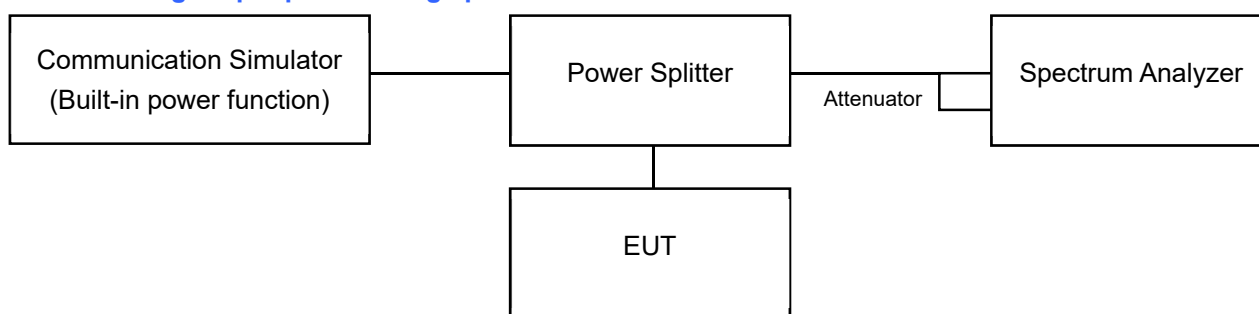
6.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

6.1.1 Test Setup

Conducted Power Measurement:



For measuring output power using spectrum



6.1.2 Test Procedure

Conducted Power Measurement:

The EUT is configured by emulator to set data modulation and maximum power using WWAN technology. The average (rms) power measurement was performed on emulator and power value was measured from power function on emulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

For measuring output power using spectrum

The EUT is configured by emulator to set data modulation and maximum power using WWAN technology and link to spectrum analyzer measurements. Set the EUT to transmit under low, middle and high channel and record the power level shown on spectrum analyzer. Power measurements use detector average (rms).

For measuring output power using spectrum

Measurement method refers to ANSI C63.26 section 5.2.4.4.

- Set span to $2 \times$ to $3 \times$ the OBW.
- Set RBW = 1% to 5% of the OBW.
- Set VBW $\geq 3 \times$ RBW.
- Set number of measurement points in sweep $\geq 2 \times$ span / RBW.
- Set Sweep time = auto-couple.
- Detector = power averaging (rms).
- Set sweep trigger to "free run."
- Trace average at least 100 traces in power averaging (rms) mode.
- Use the Band/Channel Power function to determine the integrated power per 5 MHz bandwidth, according to the 47 CFR FCC Part 27 section 27.53(a)(3)(i) standard.
- If Duty cycle < 98%, Add $10 \log (1/\text{duty cycle})$ to the measured power level to compute the average power during continuous transmission.

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

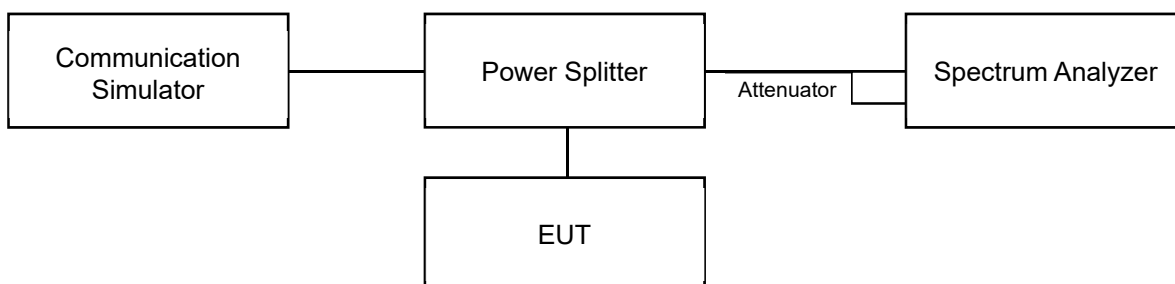
(expressed in the same units as P_{Meas} , e.g., dBm or dBW)

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)

6.2 Peak to Average Ratio

6.2.1 Test Setup

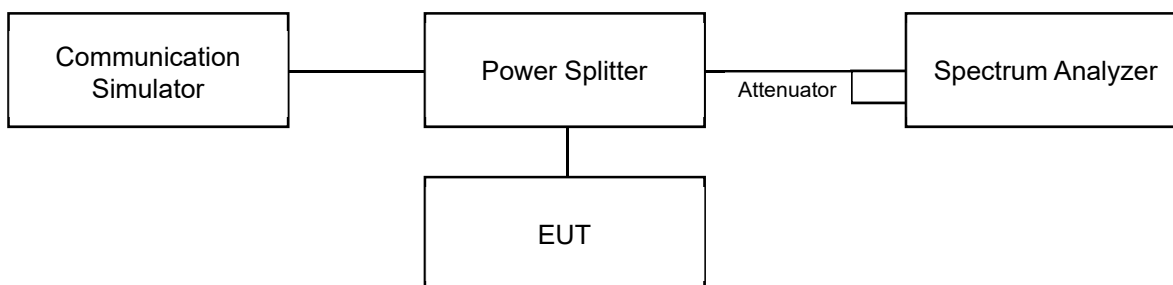


6.2.2 Test Procedure

- 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%.

6.3 Bandwidth

6.3.1 Test Setup



6.3.2 Test Procedure

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

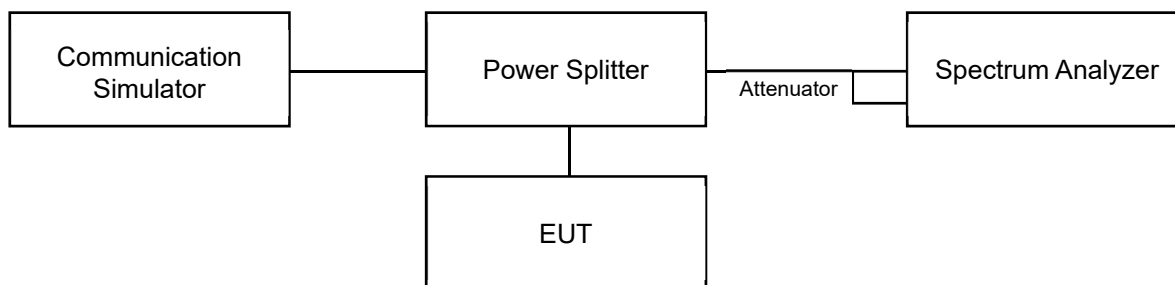
- The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.
- The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and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

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

- a. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.
- b. The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set $\geq 3 \times$ RBW.
- c. Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
- d. The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target “-X dB” requirement, i.e., if the requirement calls for measuring the -26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.
- e. Set spectrum analyzer detection mode to peak, and the trace mode to max hold.
- f. Determine the reference value by either of the following:
 - g. 1) Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).
 - h. 2) Set the EUT to transmit an unmodulated carrier. Set the spectrum analyzer marker to the level of the carrier.
- i. Determine the “-X dB amplitude” as equal to (Reference Value - X). Alternatively, this calculation can be performed on the spectrum analyzer using the delta-marker measurement function.
- j. If the reference value was determined using an unmodulated carrier, turn the EUT modulation on, then either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise the trace from step f) shall be used for step i).
- k. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “-X dB amplitude” determined in step f). If a marker is below this “-X dB amplitude” value it should be as close as possible to this value. The OBW is the positive frequency difference between the two markers. The spectral envelope can cross the “-X dB amplitude” at multiple points. The lowest or highest frequency shall be selected as the frequencies that are the farthest away from the center frequency at which the spectral envelope crosses the “-X dB amplitude.”
- l. The OBW shall be reported by providing plot(s) of the measuring instrument display, to include markers depicting the relevant frequency and amplitude information (e.g., marker table). The frequency and amplitude axis and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

6.4 Conducted Spurious Emissions

6.4.1 Test Setup



6.4.2 Test Procedure

- Measurement refer to ANSI C63.26 section 5.7.
- All measurements were done at 3 channels: low, middle and high operational frequency range.
- Measuring frequency range is from 9 kHz up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower. 20 dB attenuation pad is connected with spectrum.
- The fundamental frequency above 1 GHz, the spectrum set RBW = 1 MHz, VBW = 3 MHz, Detector = Average.
- The fundamental frequency below 1 GHz, the spectrum set RBW $\geq$ 100 kHz, VBW $\geq$ 3 x RBW, Detector = Average.
- Measuring frequency band edge, narrow RBW (no less than 1% of the OBW) is used for conducted emission measurement.
- For the emissions measurement method, certain channel BW modes demonstrate compliance by integrating with the smaller RBW allowed by the rule.
For example: Where Reference RBW = 1 MHz and a smaller RBW = 100 kHz is used, worst-case integrated BW power = [Max Measured Value (dBm) with RBW = 100 kHz] + $10 \cdot \log(1000/100)$. To compensate for this integration before comparison to the value, the adjusted reference level offset was increase by 10 dB accordingly.
- Record the maximum power value test plot.

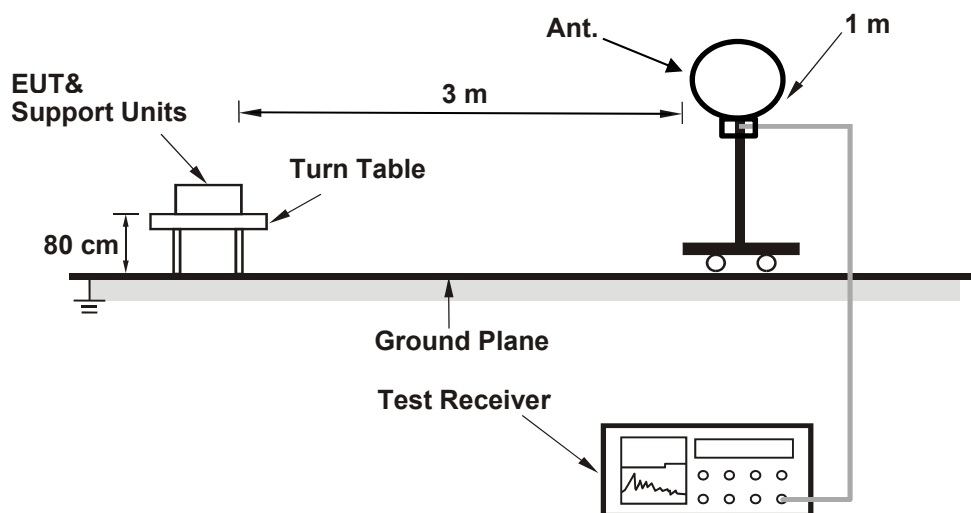
For Emission Mask:

- Measurement refer to ANSI C63.26 section 5.7.
- All measurements were done at 2 channels: low and high operational frequency range.
- Accoding to FCC 47 CFR part 90.691(a), the spectrum set RBW = 300 Hz for offset less than 37.5 kHz from channel edge and RBW = 100 kHz for offsets greater than 37.5 kHz is allowed.
- For the emissions measurement method, certain channel BW modes demonstrate compliance by integrating with the smaller RBW allowed by the rule.
For example: Where Reference RBW = 1 MHz and a smaller RBW = 100 kHz is used, worst-case integrated BW power = [Max Measured Value (dBm) with RBW = 100 kHz] + $10 \cdot \log(1000/100)$. To compensate for this integration before comparison to the value, the adjusted reference level offset was increase by 10 dB accordingly.
- Record the maximum power value test plot.

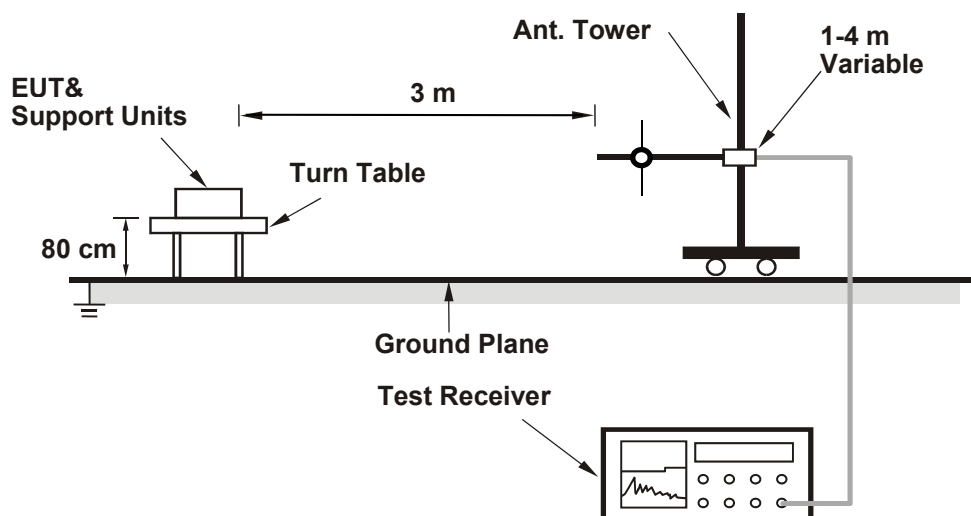
6.5 Radiated Spurious Emissions below 1GHz

6.5.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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

6.5.2 Test Procedure

The EUT is configured to set data modulation and maximum power using WWAN technology.

- a. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 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 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- c. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.
- d. Following ANSI C63.26 section 5.5 and 5.2.7
- e. $EIRP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.
- f. $ERP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8 - 2.15$; where D is the measurement distance (in the far field region) in m.

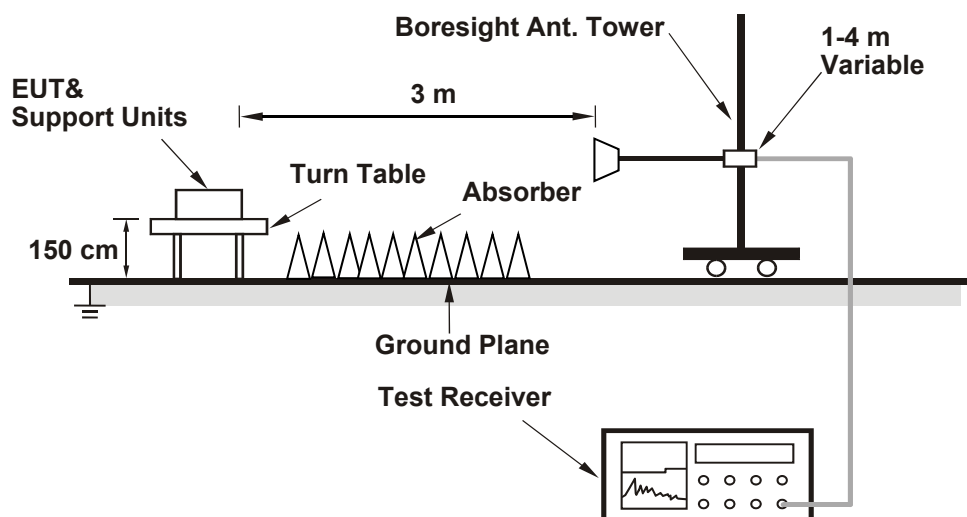
Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz. Set detector = average.
2. The amplitude of spurious emissions in the range 9 kHz to 30 MHz which are attenuated more than 20 dB below the permissible value need not be reported.

6.6 Radiated Spurious Emissions above 1GHz

6.6.1 Test Setup

For radiated emission above 1 GHz



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

6.6.2 Test Procedure

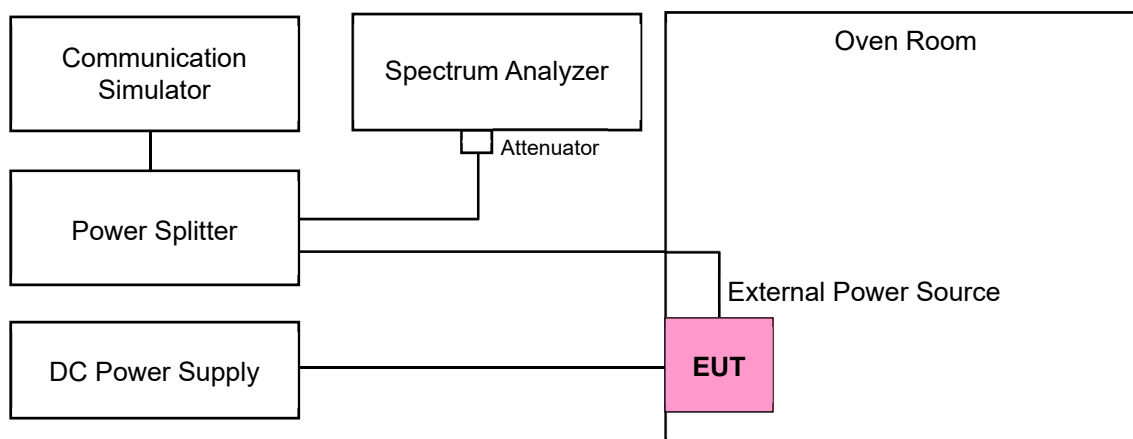
The EUT is configured by emulator to set data modulation and maximum power using WWAN technology.

- In the semi-anechoic chamber, EUT placed on the 1.5 m 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 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.
- Following ANSI C63.26 section 5.5 and 5.2.7
- $EIRP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.
- $ERP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8 - 2.15$; where D is the measurement distance (in the far field region) in m.

Note: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz. Set detector = average.

6.7 Frequency Stability

6.7.1 Test Setup



6.7.2 Test Procedure

The EUT is configured by test software or key-in commands to set data modulation and maximum power using WWAN technology.

- 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.

7 Test Results of Test Item

7.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

Input Power:	3.8 Vdc	Environmental Conditions:	25°C, 66% RH	Tested By:	Noah Chang
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7.1.1 LTE Band 2 (CA 2C)

Conducted Output Power (dBm)

Con- figure	Com- bination	PCC							SCC							Measurement Power
		Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Chan.	UL Freq. (MHz)	Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Chan.	UL Freq. (MHz)	Tx Power with UL-CA Active (dBm)
		Total														
Intra Band Conti- guous	CA_2C	2	20	QPSK	1	0	18700	1860	2	20	QPSK	1	99	18898	1879.8	16.59
					1	99						1	0			24.97
		2	20	QPSK	1	0	18801	1870.1	2	20	QPSK	1	99	18999	1889.9	16.63
					1	99						1	0			24.94
		2	20	QPSK	1	0	18902	1880.2	2	20	QPSK	1	99	19100	1900	16.52
					1	99						1	0			25.13
Intra Band Conti- guous	CA_2C	2	20	16QAM	1	0	18700	1860	2	20	16QAM	1	99	18898	1879.8	15.56
					1	99						1	0			23.93
		2	20	16QAM	1	0	18801	1870.1	2	20	16QAM	1	99	18999	1889.9	15.61
					1	99						1	0			23.87
		2	20	16QAM	1	0	18902	1880.2	2	20	16QAM	1	99	19100	1900	15.47
					1	99						1	0			24.08
Intra Band Conti- guous	CA_2C	2	20	64QAM	1	0	18700	1860	2	20	64QAM	1	99	18898	1879.8	14.51
					1	99						1	0			22.96
		2	20	64QAM	1	0	18801	1870.1	2	20	64QAM	1	99	18999	1889.9	14.58
					1	99						1	0			22.88
		2	20	64QAM	1	0	18902	1880.2	2	20	64QAM	1	99	19100	1900	14.46
					1	99						1	0			23.07
Intra Band Conti- guous	CA_2C	2	20	256QAM	1	0	18700	1860	2	20	256QAM	1	99	18898	1879.8	11.51
					1	99						1	0			22.88
		2	20	256QAM	1	0	18801	1870.1	2	20	256QAM	1	99	18999	1889.9	14.58
					1	99						1	0			22.90
		2	20	256QAM	1	0	18902	1880.2	2	20	256QAM	1	99	19100	1900	14.46
					1	99						1	0			23.09

EIRP Power (dBm)

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	16.52	25.13	19.72	28.33	33.01
16QAM	15.47	24.08	18.67	27.28	33.01
64QAM	14.46	23.07	17.66	26.27	33.01
256QAM	11.51	23.09	14.71	26.29	33.01

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

7.1.2 LTE Band 5 (CA 5B)

Conducted Output Power (dBm)

Con- figure	Com- bination	PCC							SCC							Measurement Power
		Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Chan.	UL Freq. (MHz)	Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Chan.	UL Freq. (MHz)	Tx Power with UL-CA Active (dBm)
		Total														
Intra Band Conti- guous	CA_5B	5	10	QPSK	1	0	20450	829	5	10	QPSK	1	49	20549	838.9	14.65
					1	49						1	0			25.37
		5	10	QPSK	1	0	20476	831.6	5	10	QPSK	1	49	20575	841.5	14.55
					1	49						1	0			25.16
		5	10	QPSK	1	0	20501	834.1	5	10	QPSK	1	49	20600	844	14.49
					1	49						1	0			25.27
Intra Band Conti- guous	CA_5B	5	10	16QAM	1	0	20450	829	5	10	16QAM	1	49	20549	838.9	13.60
					1	49						1	0			24.32
		5	10	16QAM	1	0	20476	831.6	5	10	16QAM	1	49	20575	841.5	13.49
					1	49						1	0			24.09
		5	10	16QAM	1	0	20501	834.1	5	10	16QAM	1	49	20600	844	13.41
					1	49						1	0			24.25
Intra Band Conti- guous	CA_5B	5	10	64QAM	1	0	20450	829	5	10	64QAM	1	49	20549	838.9	12.58
					1	49						1	0			23.34
		5	10	64QAM	1	0	20476	831.6	5	10	64QAM	1	49	20575	841.5	12.51
					1	49						1	0			23.11
		5	10	64QAM	1	0	20501	834.1	5	10	64QAM	1	49	20600	844	12.42
					1	49						1	0			23.23
Intra Band Conti- guous	CA_5B	5	10	256QAM	1	0	20450	829	5	10	256QAM	1	49	20549	838.9	12.62
					1	49						1	0			23.32
		5	10	256QAM	1	0	20476	831.6	5	10	256QAM	1	49	20575	841.5	12.50
					1	49						1	0			23.10
		5	10	256QAM	1	0	20501	834.1	5	10	256QAM	1	49	20600	844	12.46
					1	49						1	0			23.24

ERP Power (dBm)

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
QPSK	14.49	25.37	13.59	24.47	38.45
16QAM	13.41	24.32	12.51	23.42	38.45
64QAM	12.42	23.34	11.52	22.44	38.45
256QAM	12.46	23.32	11.56	22.42	38.45

Note: ERP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)-2.15

7.1.3 LTE Band 7 (CA 7C)

Conducted Output Power (dBm)

Con- figure	Com- bination	PCC							SCC							Measurement Power
		Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Chan.	UL Freq. (MHz)	Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Chan.	UL Freq. (MHz)	Tx Power with UL-CA Active (dBm)
		Total														
Intra Band Conti- guous	CA_7C	7	20	QPSK	1	0	20850	2510	7	20	QPSK	1	99	21048	2529.8	16.59
					1	99						1	0			24.97
		7	20	QPSK	1	0	21001	2525.1	7	20	QPSK	1	99	21199	2544.9	16.63
					1	99						1	0			24.94
		7	20	QPSK	1	0	21152	2540.2	7	20	QPSK	1	99	21350	2560	16.52
					1	99						1	0			25.13
Intra Band Conti- guous	CA_7C	7	20	16QAM	1	0	20850	2510	7	20	16QAM	1	99	21048	2529.8	15.56
					1	99						1	0			23.93
		7	20	16QAM	1	0	21001	2525.1	7	20	16QAM	1	99	21199	2544.9	15.61
					1	99						1	0			23.87
		7	20	16QAM	1	0	21152	2540.2	7	20	16QAM	1	99	21350	2560	15.47
					1	99						1	0			24.08
Intra Band Conti- guous	CA_7C	7	20	64QAM	1	0	20850	2510	7	20	64QAM	1	99	21048	2529.8	14.51
					1	99						1	0			22.96
		7	20	64QAM	1	0	21001	2525.1	7	20	64QAM	1	99	21199	2544.9	14.58
					1	99						1	0			22.88
		7	20	64QAM	1	0	21152	2540.2	7	20	64QAM	1	99	21350	2560	14.46
					1	99						1	0			23.07
Intra Band Conti- guous	CA_7C	7	20	256QAM	1	0	20850	2510	7	20	256QAM	1	99	21048	2529.8	11.51
					1	99						1	0			22.88
		7	20	256QAM	1	0	21001	2525.1	7	20	256QAM	1	99	21199	2544.9	14.58
					1	99						1	0			22.90
		7	20	256QAM	1	0	21152	2540.2	7	20	256QAM	1	99	21350	2560	14.46
					1	99						1	0			23.09

EIRP Power (dBm)

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	16.31	25.23	19.19	28.11	33.01
16QAM	15.25	24.21	18.13	27.09	33.01
64QAM	14.27	23.15	17.15	26.03	33.01
256QAM	14.22	23.23	17.10	26.11	33.01

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

7.1.4 LTE Band 12 (CA 12B)

Conducted Output Power (dBm)

Con- figure	Com- bination	PCC							SCC							Measurement Power
		Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Chan.	UL Freq. (MHz)	Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Chan.	UL Freq. (MHz)	Tx Power with UL-CA Active (dBm)
		Total														
Intra Band Conti- guous	CA_12B	12	5	QPSK	1	0	23038	701.8	12	10	QPSK	1	49	23110	709	15.38
					1	24						1	0			25.52
		12	5	QPSK	1	0	23048	702.8	12	10	QPSK	1	49	23120	710	15.58
					1	24						1	0			25.51
		12	5	QPSK	1	0	23058	703.8	12	10	QPSK	1	49	23130	711	15.59
					1	24						1	0			25.50
Intra Band Conti- guous	CA_12B	12	5	16QAM	1	0	23038	701.8	12	10	16QAM	1	49	23110	709	14.36
					1	24						1	0			24.48
		12	5	16QAM	1	0	23048	702.8	12	10	16QAM	1	49	23120	710	14.51
					1	24						1	0			24.48
		12	5	16QAM	1	0	23058	703.8	12	10	16QAM	1	49	23130	711	14.58
					1	24						1	0			24.40
Intra Band Conti- guous	CA_12B	12	5	64QAM	1	0	23038	701.8	12	10	64QAM	1	49	23110	709	13.35
					1	24						1	0			23.46
		12	5	64QAM	1	0	23048	702.8	12	10	64QAM	1	49	23120	710	13.53
					1	24						1	0			23.43
		12	5	64QAM	1	0	23058	703.8	12	10	64QAM	1	49	23130	711	13.55
					1	24						1	0			23.40
Intra Band Conti- guous	CA_12B	12	5	256QAM	1	0	23038	701.8	12	10	256QAM	1	49	23110	709	13.33
					1	24						1	0			23.47
		12	5	256QAM	1	0	23048	702.8	12	10	256QAM	1	49	23120	710	13.54
					1	24						1	0			23.45
		12	5	256QAM	1	0	23058	703.8	12	10	256QAM	1	49	23130	711	13.50
					1	24						1	0			23.47

ERP Power (dBm)

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum ERP (dBm)	Maximum ERP (dBm)	ERP Limit (dBm)
QPSK	15.38	25.52	14.01	24.15	34.77
16QAM	14.36	24.48	12.99	23.11	34.77
64QAM	13.35	23.46	11.98	22.09	34.77
256QAM	13.33	23.47	11.96	22.10	34.77

Note: ERP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)-2.15

7.1.5 LTE Band 41 (CA 41C)

Conducted Output Power (dBm)

Configure	Combination	PCC							SCC							Measurement Power
		Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Frequency (MHz)	Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Frequency (MHz)	Tx Power with UL-CA Active (dBm)
																Total
Intra Band Contiguous	CA_41C	41	20	QPSK	1	0	39750	2506	41	20	QPSK	1	99	39948	2525.8	19.22
					1	99						1	0			27.71
		41	20	QPSK	1	0	40521	2583.1	41	20	QPSK	1	99	40719	2602.9	19.64
					1	99						1	0			28.04
		41	20	QPSK	1	0	41292	2660.2	41	20	QPSK	1	99	41490	2680	19.51
					1	99						1	0			27.79
Intra Band Contiguous	CA_41C	41	20	16QAM	1	0	39750	2506	41	20	16QAM	1	99	39948	2525.8	18.16
					1	99						1	0			26.66
		41	20	16QAM	1	0	40521	2583.1	41	20	16QAM	1	99	40719	2602.9	18.61
					1	99						1	0			27.00
		41	20	16QAM	1	0	41292	2660.2	41	20	16QAM	1	99	41490	2680	18.41
					1	99						1	0			26.74
Intra Band Contiguous	CA_41C	41	20	64QAM	1	0	39750	2506	41	20	64QAM	1	99	39948	2525.8	17.14
					1	99						1	0			25.71
		41	20	64QAM	1	0	40521	2583.1	41	20	64QAM	1	99	40719	2602.9	17.58
					1	99						1	0			25.94
		41	20	64QAM	1	0	41292	2660.2	41	20	64QAM	1	99	41490	2680	17.43
					1	99						1	0			25.74
Intra Band Contiguous	CA_41C	41	20	256QAM	1	0	39750	2506	41	20	256QAM	1	99	39948	2525.8	17.16
					1	99						1	0			25.63
		41	20	256QAM	1	0	40521	2583.1	41	20	256QAM	1	99	40719	2602.9	17.61
					1	99						1	0			25.95
		41	20	256QAM	1	0	41292	2660.2	41	20	256QAM	1	99	41490	2680	17.47
					1	99						1	0			25.71

EIRP Power (dBm)

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	19.22	28.04	21.97	30.79	33.01
16QAM	18.16	27.00	20.91	29.75	33.01
64QAM	17.14	25.94	19.89	28.69	33.01
256QAM	17.16	25.95	19.91	28.70	33.01

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

7.1.6 LTE Band 42 (CA 42C)

Conducted Output Power (dBm)

Configure	Combination	PCC							SCC							Measurement Power
		Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Frequency (MHz)	Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Frequency (MHz)	Tx Power with UL-CA Active (dBm)
																Total
Intra Band Contiguous	CA_42C	42	20	QPSK	1	0	42190	3460	42	20	QPSK	1	99	42388	3479.8	16.45
					1	99						1	0			24.87
		42	20	QPSK	1	0	42490	3490.0	42	20	QPSK	1	99	42689	3509.9	16.39
					1	99						1	0			24.73
		42	20	QPSK	1	0	42791	3520.1	42	20	QPSK	1	99	42990	3540	16.12
					1	99						1	0			24.55
Intra Band Contiguous	CA_41C	42	20	16QAM	1	0	42190	3460	42	20	16QAM	1	99	42388	3479.8	15.34
					1	99						1	0			23.77
		42	20	16QAM	1	0	42490	3490.0	42	20	16QAM	1	99	42689	3509.9	15.28
					1	99						1	0			23.63
		42	20	16QAM	1	0	42791	3520.1	42	20	16QAM	1	99	42990	3540	15.08
					1	99						1	0			23.52
Intra Band Contiguous	CA_42C	42	20	64QAM	1	0	42190	3460	42	20	64QAM	1	99	42388	3479.8	14.44
					1	99						1	0			22.75
		42	20	64QAM	1	0	42490	3490.0	42	20	64QAM	1	99	42689	3509.9	14.27
					1	99						1	0			22.62
		42	20	64QAM	1	0	42791	3520.1	42	20	64QAM	1	99	42990	3540	14.11
					1	99						1	0			22.51
Intra Band Contiguous	CA_42C	42	20	256QAM	1	0	42190	3460	42	20	256QAM	1	99	42388	3479.8	14.37
					1	99						1	0			22.78
		42	20	256QAM	1	0	42490	3490.0	42	20	256QAM	1	99	42689	3509.9	14.34
					1	99						1	0			22.65
		42	20	256QAM	1	0	42791	3520.1	42	20	256QAM	1	99	42990	3540	14.08
					1	99						1	0			22.49

EIRP Power (dBm)

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	16.12	24.87	14.62	23.37	30.00
16QAM	15.08	23.77	13.58	22.27	30.00
64QAM	14.11	22.75	12.61	21.25	30.00
256QAM	14.08	22.78	12.58	21.28	30.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

7.1.7 LTE Band 66 (CA 66B)

Conducted Output Power (dBm)

Configure	Combination	PCC							SCC							Measurement Power
		Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Frequency (MHz)	Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Frequency (MHz)	Tx Power with UL-CA Active (dBm)
																Total
Intra Band Contiguous	CA_66B	66	10	QPSK	1	0	132022	1715	66	10	QPSK	1	49	132121	1724.9	16.71
					1	49						1	0			25.05
		66	10	QPSK	1	0	132373	1750.1	66	10	QPSK	1	49	132472	1760	16.99
					1	49						1	0			25.45
		66	10	QPSK	1	0	132523	1765.1	66	10	QPSK	1	49	132622	1775	17.16
					1	49						1	0			25.72
Intra Band Contiguous	CA_66B	66	10	16QAM	1	0	132022	1715	66	10	16QAM	1	49	132121	1724.9	15.69
					1	49						1	0			24.00
		66	10	16QAM	1	0	132373	1750.1	66	10	16QAM	1	49	132472	1760	15.98
					1	49						1	0			24.41
		66	10	16QAM	1	0	132523	1765.1	66	10	16QAM	1	49	132622	1775	16.14
					1	49						1	0			24.68
Intra Band Contiguous	CA_66B	66	10	64QAM	1	0	132022	1715	66	10	64QAM	1	49	132121	1724.9	14.70
					1	49						1	0			22.99
		66	10	64QAM	1	0	132373	1750.1	66	10	64QAM	1	49	132472	1760	14.90
					1	49						1	0			23.39
		66	10	64QAM	1	0	132523	1765.1	66	10	64QAM	1	49	132622	1775	15.10
					1	49						1	0			23.70
Intra Band Contiguous	CA_66B	66	10	256QAM	1	0	132022	1715	66	10	256QAM	1	49	132121	1724.9	11.66
					1	49						1	0			22.97
		66	10	256QAM	1	0	132373	1750.1	66	10	256QAM	1	49	132472	1760	14.95
					1	49						1	0			23.40
		66	10	256QAM	1	0	132523	1765.1	66	10	256QAM	1	49	132622	1775	15.09
					1	49						1	0			23.67

EIRP Power (dBm)

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	16.71	25.72	19.02	28.03	30.00
16QAM	15.69	24.68	18	26.99	30.00
64QAM	14.70	23.70	17.01	26.01	30.00
256QAM	11.66	23.67	13.97	25.98	30.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

7.1.8 LTE Band 66 (CA 66C)

Conducted Output Power (dBm)

Configure	Combination	PCC							SCC							Measurement Power
		Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Frequency (MHz)	Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Frequency (MHz)	Tx Power with UL-CA Active (dBm)
																Total
Intra Band Contiguous	CA_66C	66	20	QPSK	1	0	132072	1720	66	20	QPSK	1	99	132270	1739.8	16.77
					1	99						1	0			25.11
		66	20	QPSK	1	0	132323	1745.1	66	20	QPSK	1	99	132521	1764.9	17.05
					1	99						1	0			25.51
		66	20	QPSK	1	0	132374	1750.2	66	20	QPSK	1	99	132572	1770	17.24
					1	99						1	0			25.77
Intra Band Contiguous	CA_66C	66	20	16QAM	1	0	132072	1720	66	20	16QAM	1	99	132270	1739.8	15.74
					1	99						1	0			24.09
		66	20	16QAM	1	0	132323	1745.1	66	20	16QAM	1	99	132521	1764.9	16.03
					1	99						1	0			24.49
		66	20	16QAM	1	0	132374	1750.2	66	20	16QAM	1	99	132572	1770	16.17
					1	99						1	0			24.72
Intra Band Contiguous	CA_66C	66	20	64QAM	1	0	132072	1720	66	20	64QAM	1	99	132270	1739.8	14.71
					1	99						1	0			23.06
		66	20	64QAM	1	0	132323	1745.1	66	20	64QAM	1	99	132521	1764.9	14.97
					1	99						1	0			23.47
		66	20	64QAM	1	0	132374	1750.2	66	20	64QAM	1	99	132572	1770	15.23
					1	99						1	0			23.70
Intra Band Contiguous	CA_66C	66	20	256QAM	1	0	132072	1720	66	20	256QAM	1	99	132270	1739.8	14.74
					1	99						1	0			23.02
		66	20	256QAM	1	0	132323	1745.1	66	20	256QAM	1	99	132521	1764.9	15.02
					1	99						1	0			23.47
		66	20	256QAM	1	0	132374	1750.2	66	20	256QAM	1	99	132572	1770	15.20
					1	99						1	0			23.68

EIRP Power (dBm)

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	16.77	25.77	19.08	28.08	30.00
16QAM	15.74	24.72	18.05	27.03	30.00
64QAM	14.71	23.70	17.02	26.01	30.00
256QAM	14.74	23.68	17.05	25.99	30.00

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

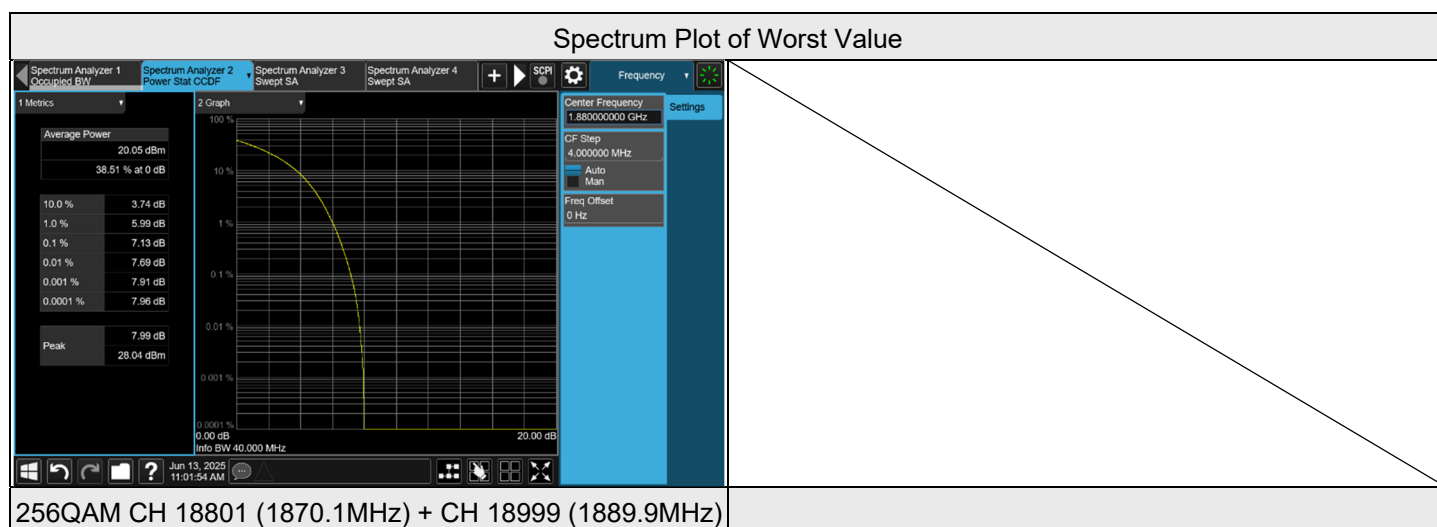
7.2 Peak to Average Ratio

Input Power:	3.8 Vdc	Environmental Conditions:	25°C, 66% RH	Tested By:	Noah Chang
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7.2.1 LTE Band 2 (CA 2C)

Channel Bandwidth: 20 MHz+20 MHz

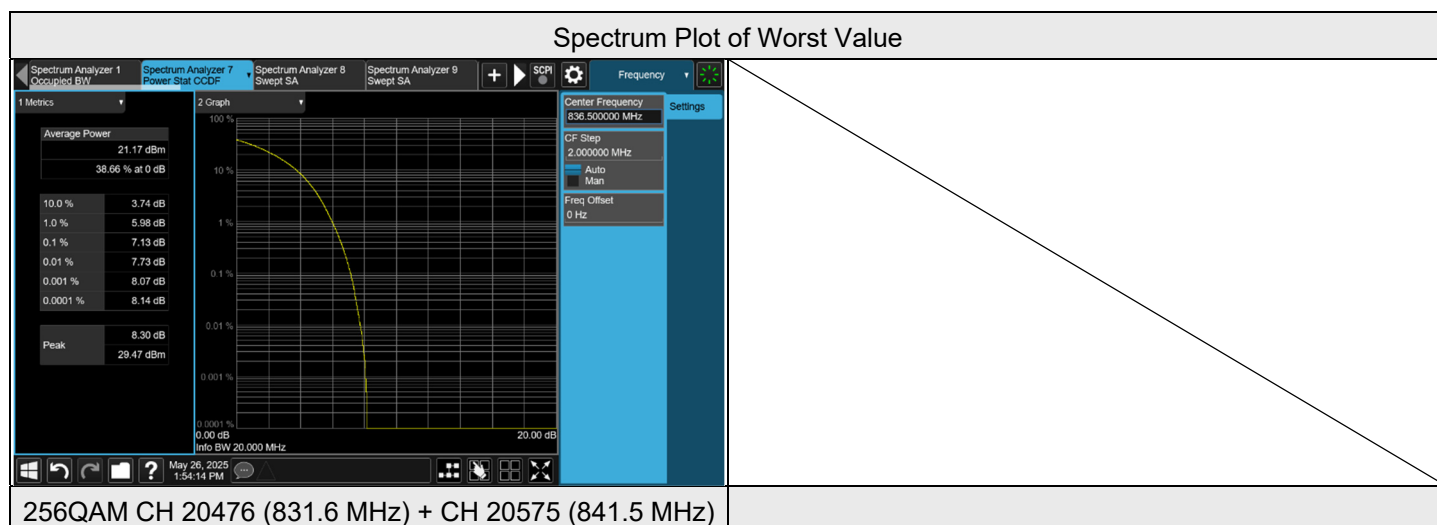
Channel	Frequency (MHz)	Peak to Average Ratio (dB)				Limit
		QPSK	16QAM	64QAM	256QAM	
18801+18999	1870.1+1889.9	3.54	4.20	6.03	7.13	13.00



7.2.2 LTE Band 5 (CA 5B)

Channel Bandwidth: 10 MHz+10 MHz

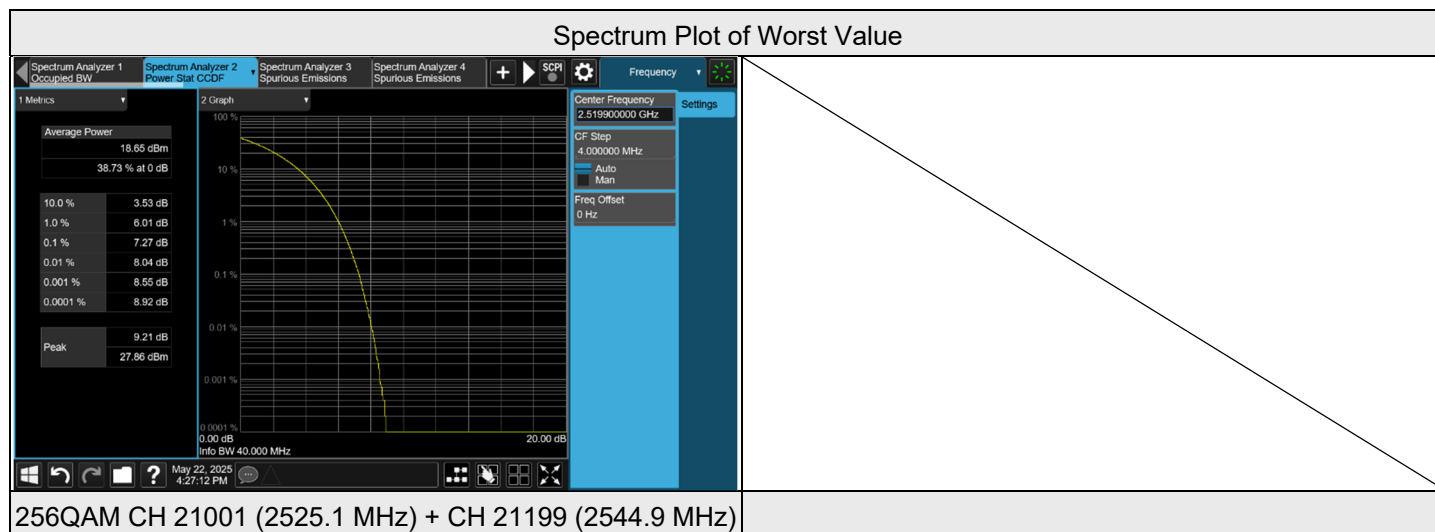
Channel	Frequency (MHz)	Peak to Average Ratio (dB)				Limit
		QPSK	16QAM	64QAM	256QAM	
20476+20575	831.6+841.5	3.69	4.50	6.19	7.13	13.00



7.2.3 LTE Band 7 (CA 7C)

Channel Bandwidth: 20 MHz+20 MHz

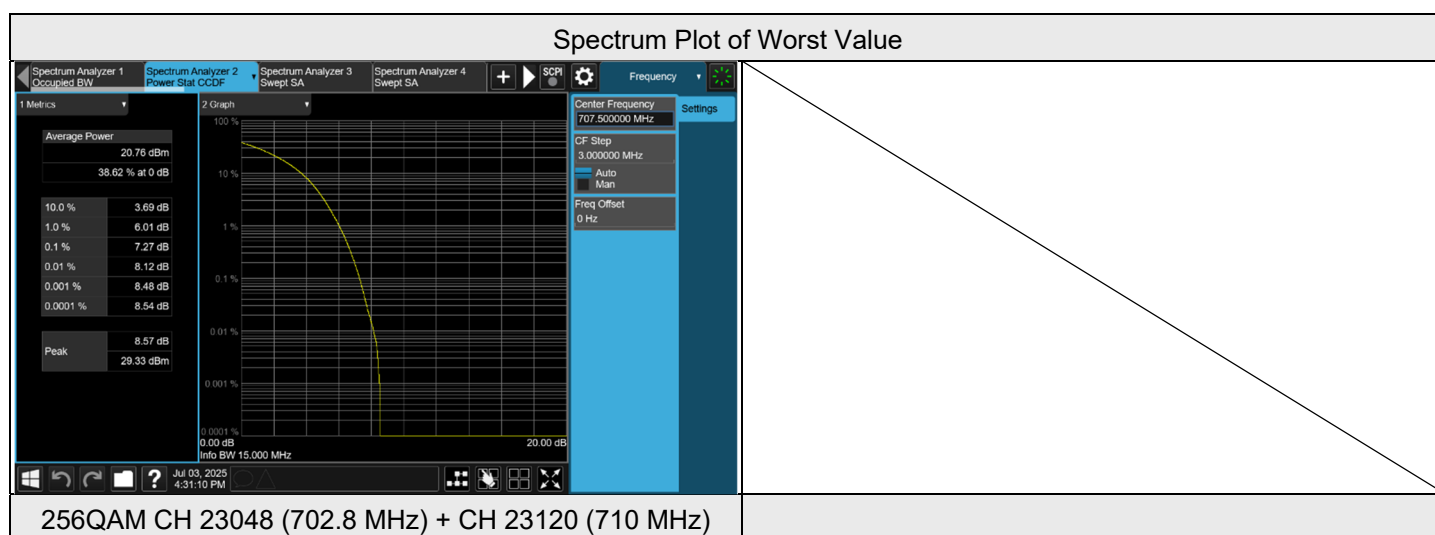
Channel	Frequency (MHz)	Peak to Average Ratio (dB)				Limit
		QPSK	16QAM	64QAM	256QAM	
21001+21199	2525.1+2544.9	3.43	4.05	5.88	7.27	13.00



7.2.4 LTE Band 12 (CA 12B)

Channel Bandwidth: 5 MHz+10 MHz

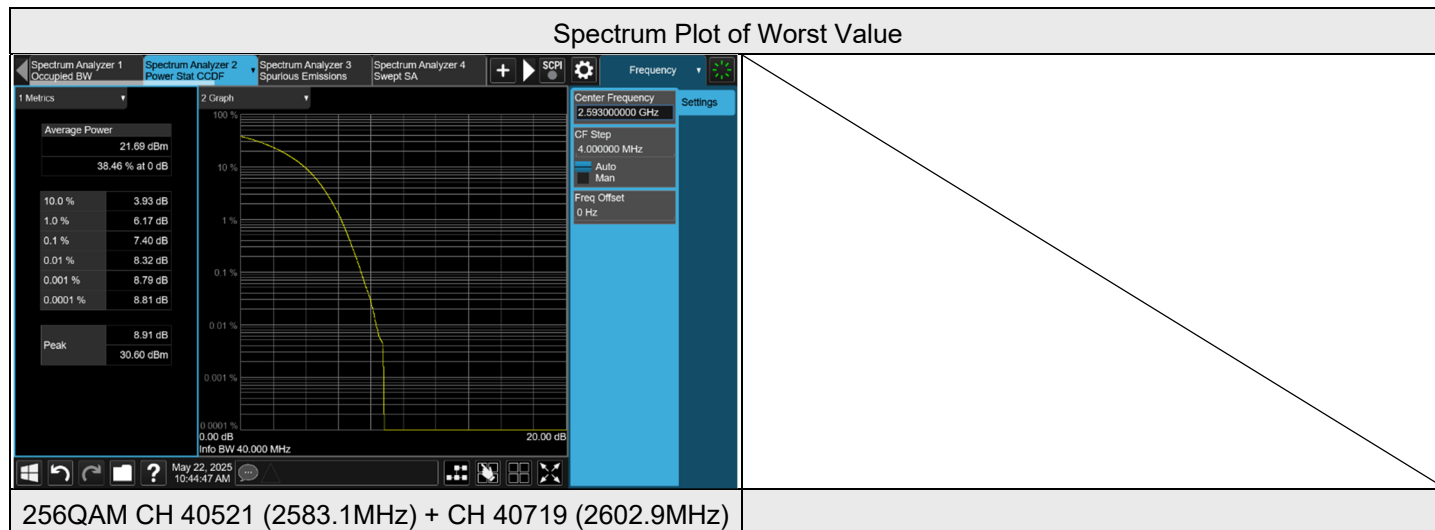
Channel	Frequency (MHz)	Peak to Average Ratio (dB)				Limit
		QPSK	16QAM	64QAM	256QAM	
23048+23120	702.8+710	3.78	4.37	6.46	7.27	13.00



7.2.5 LTE Band 41 (CA 41C)

Channel Bandwidth: 20 MHz+20 MHz

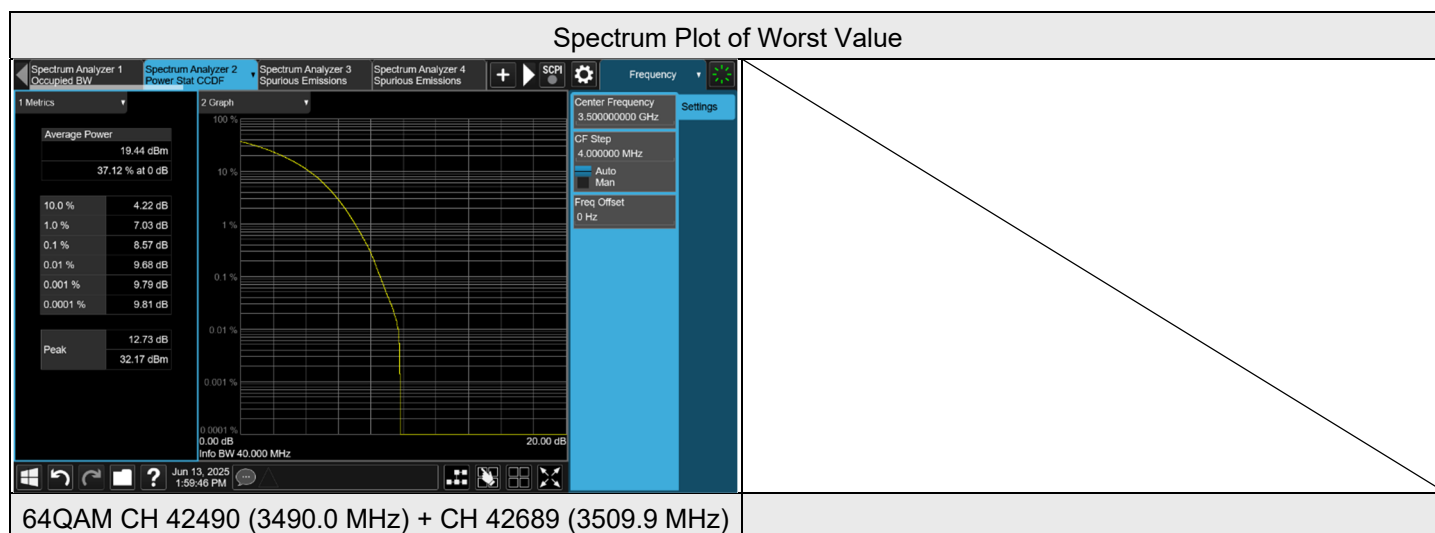
Channel	Frequency (MHz)	Peak to Average Ratio (dB)				Limit
		QPSK	16QAM	64QAM	256QAM	
40521+40719	2583.1+2602.9	4.80	5.08	6.51	7.40	13.00



7.2.6 LTE Band 42 (CA 42C)

Channel Bandwidth: 20 MHz+20 MHz

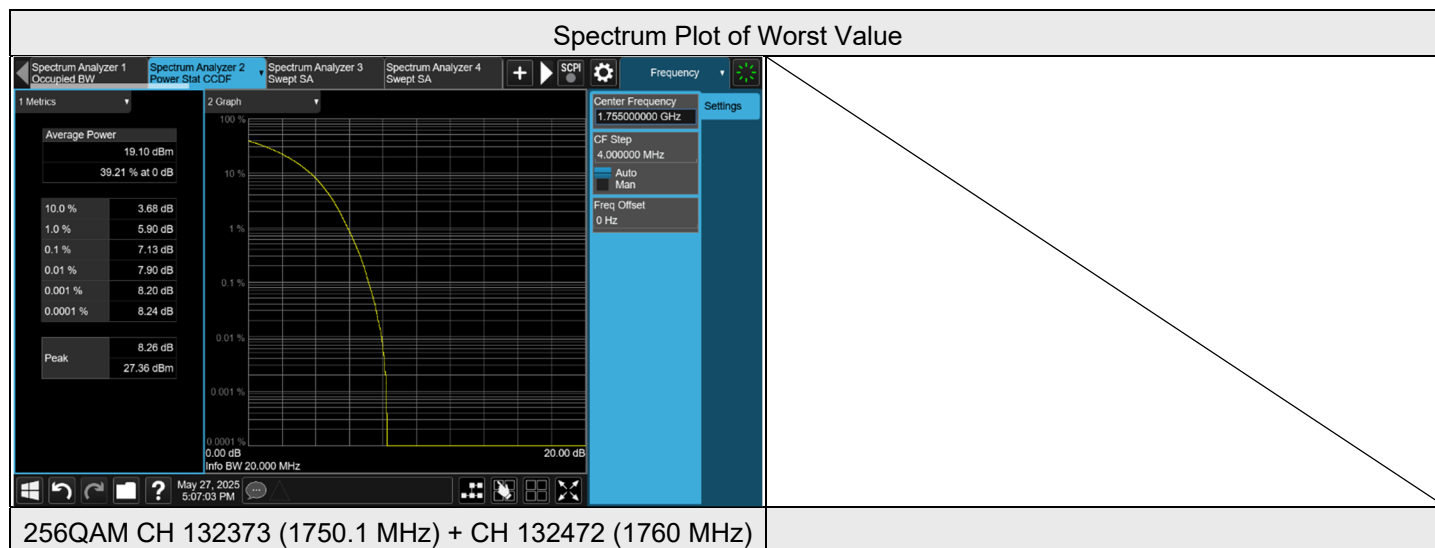
Channel	Frequency (MHz)	Peak to Average Ratio (dB)				Limit
		QPSK	16QAM	64QAM	256QAM	
42490+42689	3490.0+3509.9	5.96	6.52	8.57	8.34	13.00



7.2.7 LTE Band 66 (CA 66B)

Channel Bandwidth: 10 MHz+10 MHz

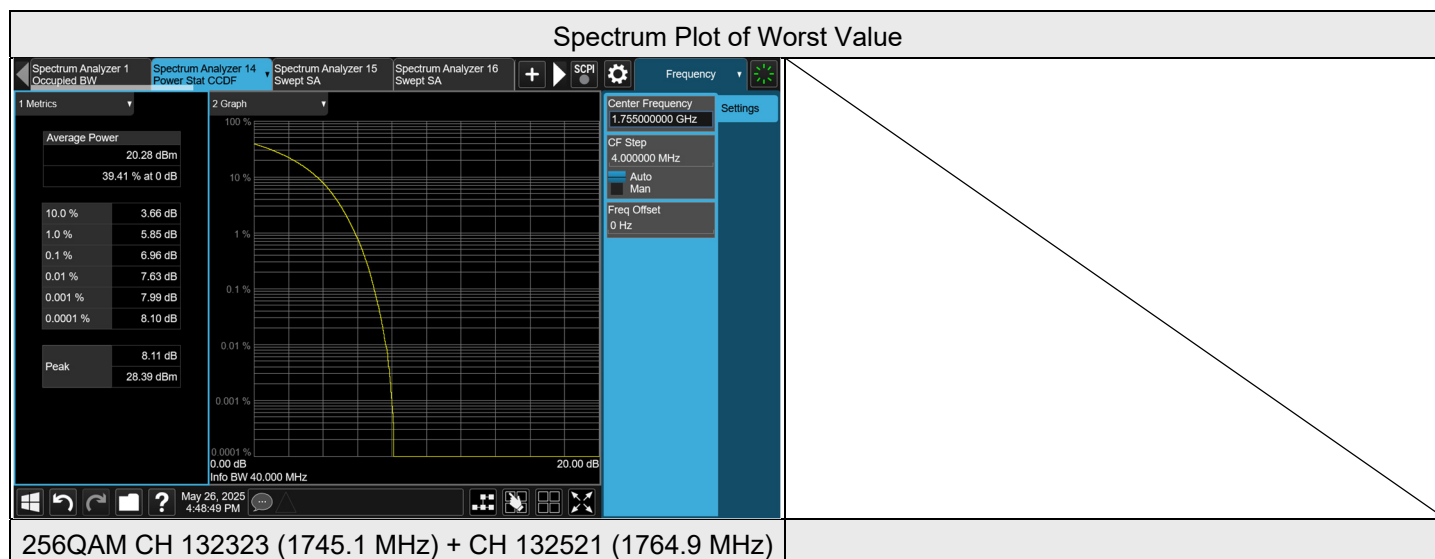
Channel	Frequency (MHz)	Peak to Average Ratio (dB)				Limit
		QPSK	16QAM	64QAM	256QAM	
132373+132472	1750.1+1760	3.60	4.53	6.24	7.13	13.00



7.2.8 LTE Band 66 (CA 66C)

Channel Bandwidth: 20 MHz+20 MHz

Channel	Frequency (MHz)	Peak to Average Ratio (dB)				Limit
		QPSK	16QAM	64QAM	256QAM	
132323+132521	1745.1+1764.9	3.78	4.49	6.14	6.96	13.00



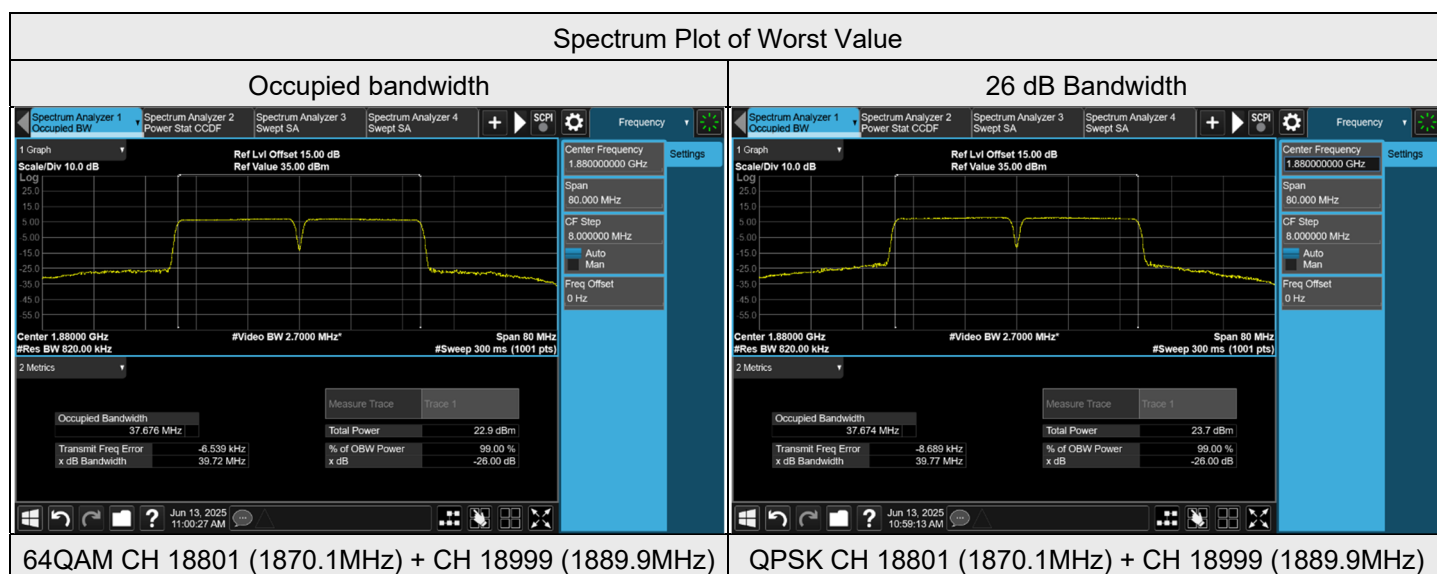
7.3 Bandwidth

Input Power:	3.8 Vdc	Environmental Conditions:	25°C, 66% RH	Tested By:	Noah Chang
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7.3.1 LTE Band 2 (CA 2C)

Channel Bandwidth: 20 MHz+20 MHz

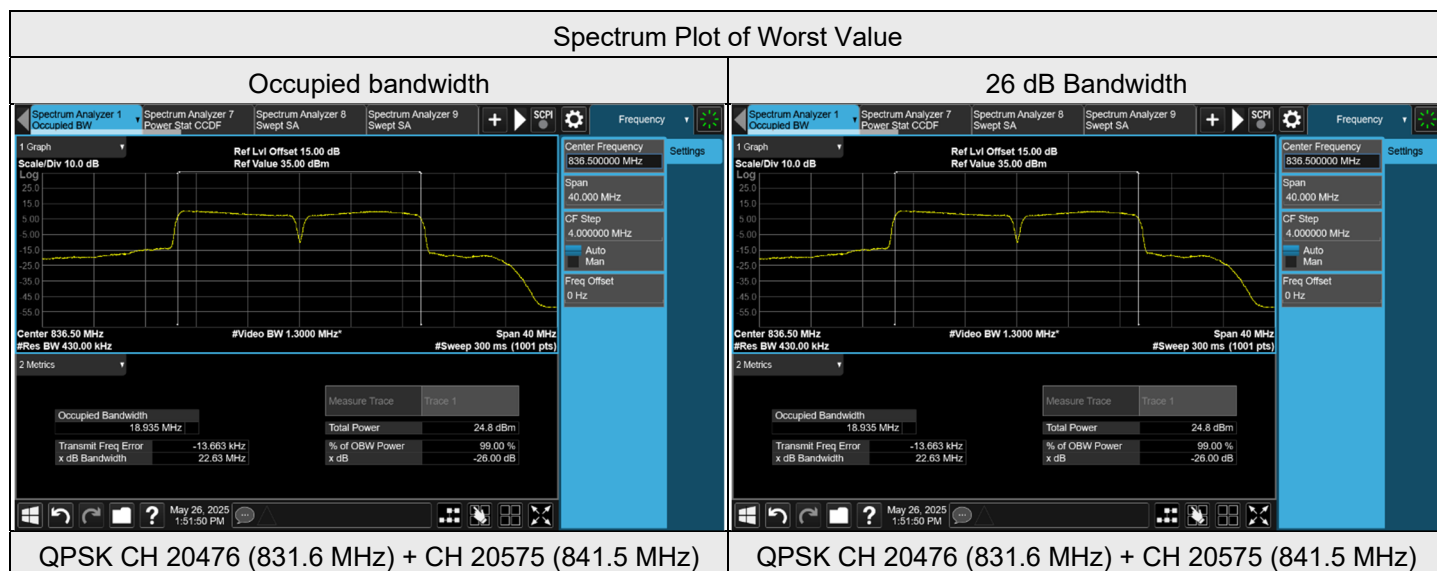
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)				26 dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
18801+18999	1870.1+1889.9	37.67	37.65	37.68	37.63	39.77	39.73	39.72	39.69



7.3.2 LTE Band 5 (CA 5B)

Channel Bandwidth: 10 MHz+10 MHz

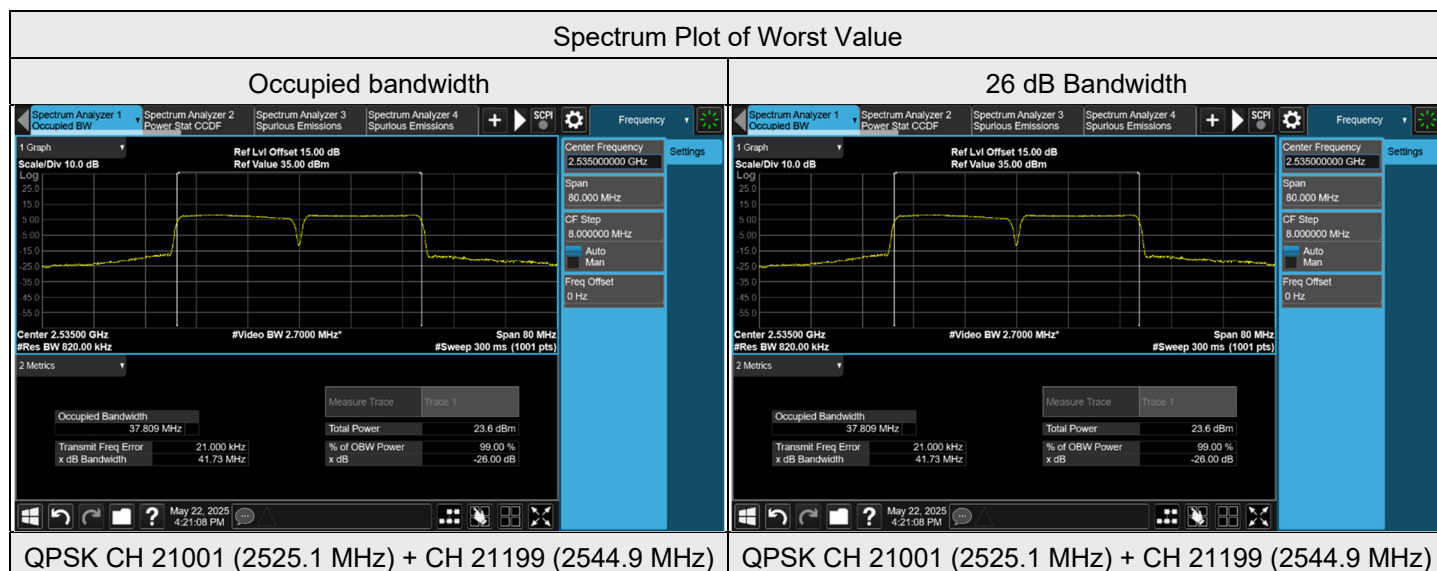
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)				26 dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
20476+20575	831.6+841.5	18.94	18.90	18.90	18.88	22.63	20.18	20.12	19.91



7.3.3 LTE Band 7 (CA 7C)

Channel Bandwidth: 20 MHz+20 MHz

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)				26 dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
21001+21199	2525.1+2544.9	37.81	37.75	37.73	37.66	41.73	39.81	39.79	39.70

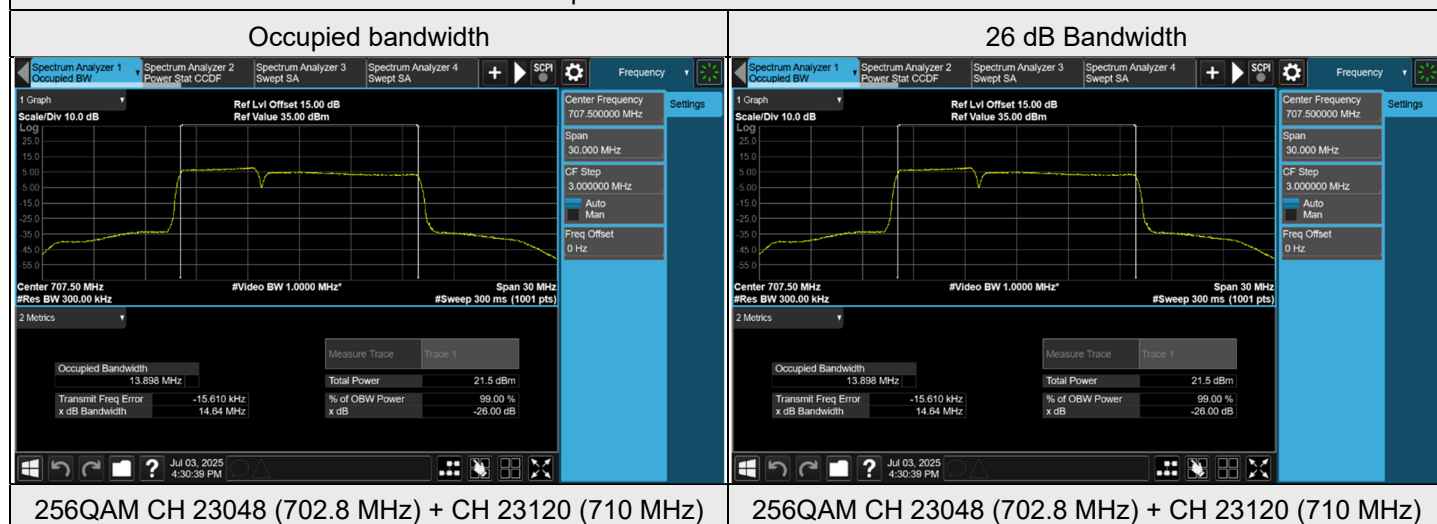


7.3.4 LTE Band 12 (CA 12B)

Channel Bandwidth: 5 MHz+10 MHz

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)				26 dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
23048+23120	702.8+710	13.90	13.90	13.89	13.90	14.63	14.62	14.61	14.64

Spectrum Plot of Worst Value

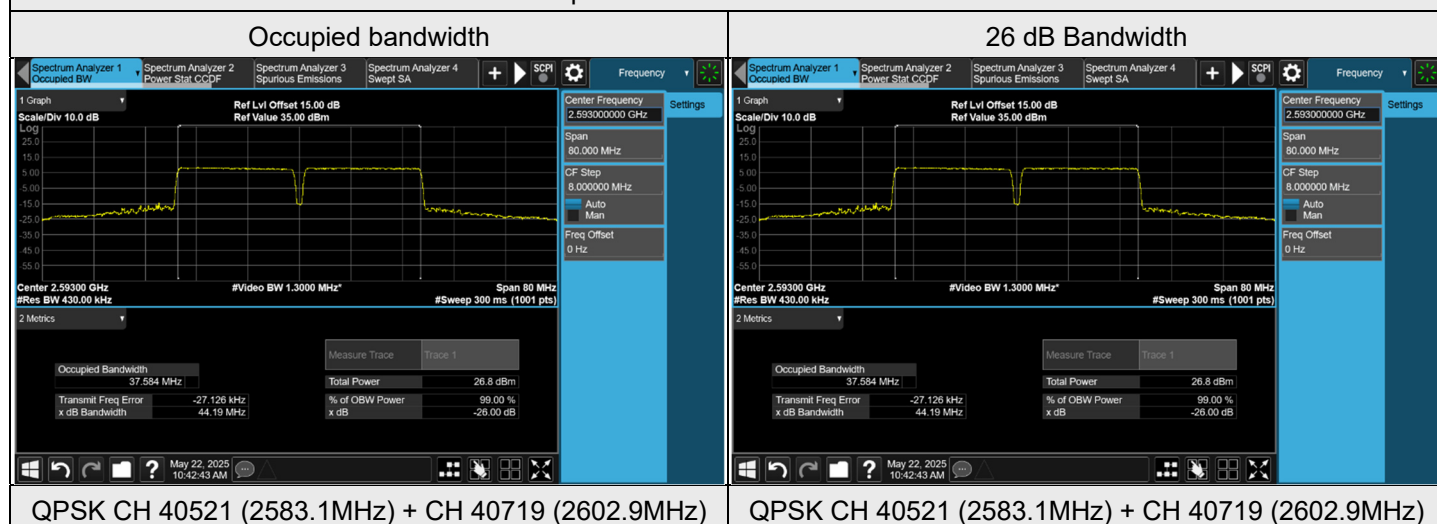


7.3.5 LTE Band 41 (CA 41C)

Channel Bandwidth: 20 MHz+20 MHz

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)				26 dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
40521+40719	2583.1+2602.9	37.58	37.56	37.57	37.51	44.19	38.87	38.92	38.86

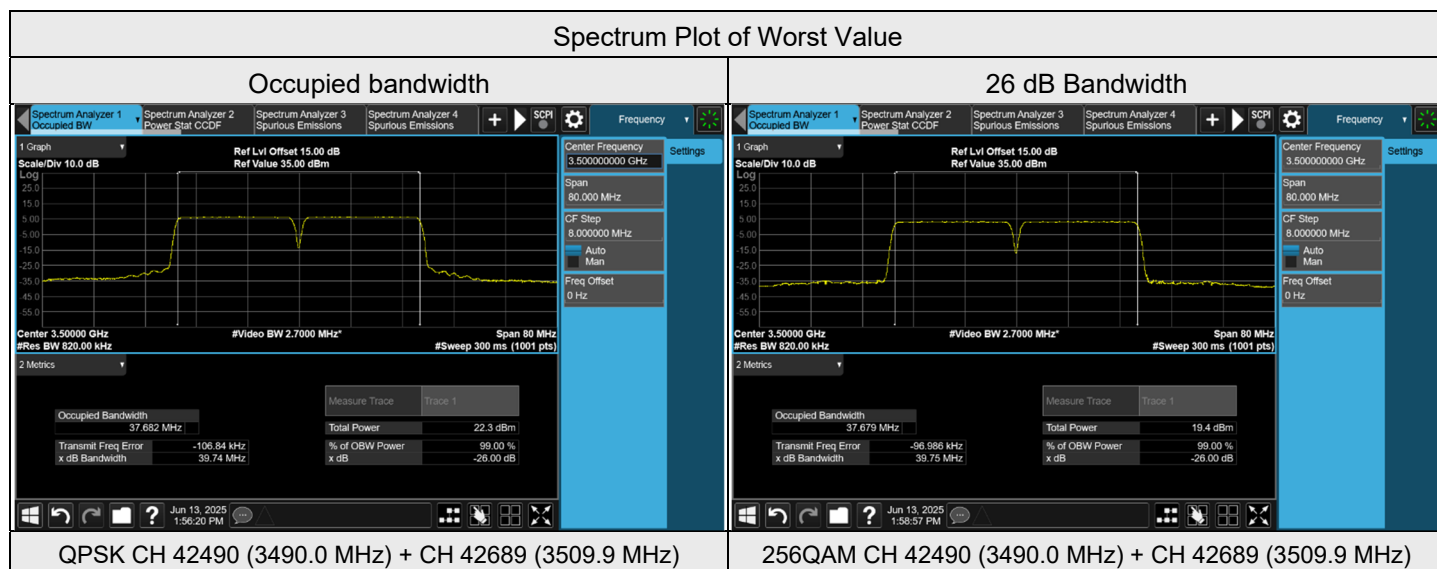
Spectrum Plot of Worst Value



7.3.6 LTE Band 42 (CA 42C)

Channel Bandwidth: 20 MHz+20 MHz

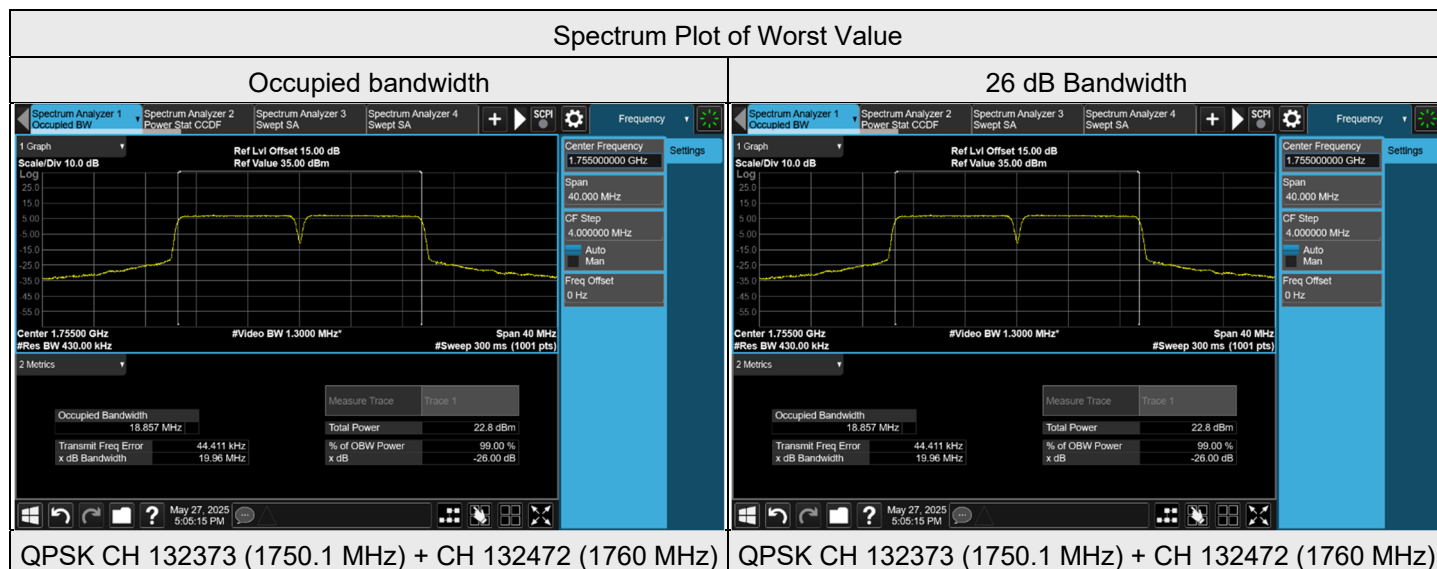
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)				26 dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
42490+42689	3490.0+3509.9	37.68	37.68	37.66	37.68	39.74	39.70	39.70	39.75



7.3.7 LTE Band 66 (CA 66B)

Channel Bandwidth: 10 MHz+10 MHz

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)				26 dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
132373+132472	1750.1+1760	18.86	18.85	18.85	18.85	19.96	19.91	19.91	19.90



7.3.8 LTE Band 66 (CA 66C)

Channel Bandwidth: 20 MHz+20 MHz

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)				26 dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
132323+132521	1745.1+1764.9	37.67	37.67	37.63	37.65	39.77	39.77	39.70	39.69

