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 90** **47 CFR FCC Part 2**
Report No.:	RFBFKV-WTW-P23050558
FCC ID:	L6AITG100-1
Product:	Radar H2M
Brand:	BlackBerry
Model No.:	ITG100-1
Received Date:	2023/5/23
Test Date:	2023/11/17 ~ 2023/11/30, 2024/5/7 (For all tests except Radiated Spurious Emissions below 1GHz of Test Mode B) 2024/3/5 (For Test Mode B: Radiated Spurious Emissions below 1GHz)
Issued Date:	2024/5/9
Applicant:	BlackBerry Limited
Address:	2200 University Avenue East, Waterloo, Ontario, Canada N2K 0A7
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location (1):	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan
Test Location (2):	No. 70, Wenming Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)
FCC Registration / Designation Number (1):	788550 / TW0003
FCC Registration / Designation Number (2):	281270 / TW0032

Approved by: Jeremy Lin , **Date:** **2024/5/9**

Jeremy Lin / Project Engineer

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Prepared by : Pettie Chen / Senior Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBFKV-WTW-P23050558	Original release.	2024/5/9

1 Certificate

Product:	Radar H2M
Brand:	BlackBerry
Test Model:	ITG100-1
Sample Status:	Engineering sample
Applicant:	BlackBerry Limited
Test Date:	2023/11/17 ~ 2023/11/30, 2024/5/7 (For all tests except Radiated Spurious Emissions below 1GHz of Test Mode B) 2024/3/5 (For Test Mode B: Radiated Spurious Emissions below 1GHz)
Standard:	47 CFR FCC Part 22 47 CFR FCC Part 24 47 CFR FCC Part 27 47 CFR FCC Part 90 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 90 47 CFR FCC Part 2			
Standard / Clause	Test Item	Result	Remark
FCC 47 CFR Part 2.1046 FCC 47 CFR Part 22.913 (a) FCC 47 CFR Part 24.232 (c) FCC 47 CFR Part 27.50(d) FCC 47 CFR Part 27.50(c) FCC 47 CFR Part 27.50(b) FCC 47 CFR Part 90.635(b)	Effective Radiated Power and Equivalent Isotropically Radiated Power	Pass	Meet the requirement of limit.
FCC 47 CFR Part 2.1047	Modulation Characteristics	Pass	Meet the requirement of limit.
FCC 47 CFR Part 22.913 (d) FCC 47 CFR Part 24.232 (d) FCC 47 CFR Part 27.50(d)	Peak to Average Ratio	Pass	Meet the requirement of limit.
FCC 47 CFR Part 2.1049	Bandwidth	Pass	Meet the requirement of limit.
FCC 47 CFR Part 2.1051 FCC 47 CFR Part 22.917 FCC 47 CFR Part 24.238 FCC 47 CFR Part 27.53(h) FCC 47 CFR Part 27.53(g) FCC 47 CFR Part 27.53(c)(f) FCC 47 CFR Part 90.691	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
FCC 47 CFR Part 2.1053 FCC 47 CFR Part 22.917 FCC 47 CFR Part 24.238 FCC 47 CFR Part 27.53(h) FCC 47 CFR Part 27.53(g) FCC 47 CFR Part 27.53(c)(f) FCC 47 CFR Part 90.691	Radiated Spurious Emissions below 1GHz	Pass	Minimum passing margin is -26.51 dB at 37.76 MHz
FCC 47 CFR Part 2.1053 FCC 47 CFR Part 22.917 FCC 47 CFR Part 24.238 FCC 47 CFR Part 27.53(h) FCC 47 CFR Part 27.53(g) FCC 47 CFR Part 27.53(c)(f) FCC 47 CFR Part 90.691	Radiated Spurious Emissions above 1GHz	Pass	Minimum passing margin is -4.03 dB at 3760.00 MHz
FCC 47 CFR Part 2.1055 FCC 47 CFR Part 22.355 FCC 47 CFR Part 24.235 FCC 47 CFR Part 27.54 FCC 47 CFR Part 90.213	Frequency Stability	Pass	Meet the requirement of limit.

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	Specification	Expanded Uncertainty (k=2) (±)
Radiated Spurious Emissions below 1GHz	9 kHz ~ 30 MHz	2.44 dB
	30 MHz ~ 1 GHz	2.02 dB
Radiated Spurious Emissions above 1GHz	1 GHz ~ 18 GHz	1.01 dB
	18 GHz ~ 40 GHz	1.15 dB

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	Radar H2M
Brand	BlackBerry
Test Model	ITG100-1
Status of EUT	Engineering sample
Power Supply Rating	7.2Vdc (From battery)

Note:

1. EUT Overview

Band / Bandwidth		TX Frequency Range (MHz)	Max. EIRP Power		Emission Designator	
			QPSK	16QAM	QPSK	16QAM
Cat-M1 Band 2 (Channel Bandwidth 1.4MHz)		1850.7-1909.3	442.588mW (26.46dBm)	356.451mW (25.52dBm)	1M09G7D	1M09D7W
Cat-M1 Band 2 (Channel Bandwidth 3MHz)		1851.5-1908.5	440.555mW (26.44dBm)	363.915mW (25.61dBm)	1M09G7D	1M09D7W
Cat-M1 Band 2 (Channel Bandwidth 5MHz)		1852.5-1907.5	418.794mW (26.22dBm)	399.025mW (26.01dBm)	1M09G7D	1M09D7W
Cat-M1 Band 2 (Channel Bandwidth 10MHz)		1855.0-1905.0	429.536mW (26.33dBm)	409.261mW (26.12dBm)	1M09G7D	1M09D7W
Cat-M1 Band 2 (Channel Bandwidth 15MHz)		1857.5-1902.5	442.588mW (26.46dBm)	409.261mW (26.12dBm)	1M09G7D	1M09D7W
Cat-M1 Band 2 (Channel Bandwidth 20MHz)		1860.0-1900.0	446.684mW (26.50dBm)	414.954mW (26.18dBm)	1M09G7D	1M09D7W
Cat-M1 Band 4 (Channel Bandwidth 1.4MHz)		1710.7-1754.3	386.367mW (25.87dBm)	316.957mW (25.01dBm)	1M09G7D	1M09D7W
Cat-M1 Band 4 (Channel Bandwidth 3MHz)		1711.5-1753.5	384.592mW (25.85dBm)	325.087mW (25.12dBm)	1M09G7D	1M09D7W
Cat-M1 Band 4 (Channel Bandwidth 5MHz)		1712.5-1752.5	384.592mW (25.85dBm)	359.749mW (25.56dBm)	1M09G7D	1M09D7W
Cat-M1 Band 4 (Channel Bandwidth 10MHz)		1715.0-1750.0	375.837mW (25.75dBm)	373.250mW (25.72dBm)	1M09G7D	1M09D7W
Cat-M1 Band 4 (Channel Bandwidth 15MHz)		1717.5-1747.5	386.367mW (25.87dBm)	384.592mW (25.85dBm)	1M09G7D	1M09D7W
Cat-M1 Band 4 (Channel Bandwidth 20MHz)		1720.0-1745.0	390.841mW (25.92dBm)	381.944mW (25.82dBm)	1M09G7D	1M09D7W
Cat-M1 Band 25 (Channel Bandwidth 1.4MHz)		1850.7-1914.3	399.025mW (26.01dBm)	360.579mW (25.57dBm)	1M09G7D	1M09D7W
Cat-M1 Band 25 (Channel Bandwidth 3MHz)		1851.5-1913.5	402.717mW (26.05dBm)	333.426mW (25.23dBm)	1M09G7D	1M09D7W
Cat-M1 Band 25 (Channel Bandwidth 5MHz)		1852.5-1912.5	385.478mW (25.86dBm)	349.140mW (25.43dBm)	1M09G7D	1M09D7W
Cat-M1 Band 25 (Channel Bandwidth 10MHz)		1855.0-1910.0	401.791mW (26.04dBm)	366.438mW (25.64dBm)	1M09G7D	1M09D7W
Cat-M1 Band 25 (Channel Bandwidth 15MHz)		1857.5-1907.5	392.645mW (25.94dBm)	354.813mW (25.50dBm)	1M09G7D	1M09D7W
Cat-M1 Band 25 (Channel Bandwidth 20MHz)		1860.0-1905.0	414.000mW (26.17dBm)	392.645mW (25.94dBm)	1M09G7D	1M09D7W
For Part 22	Cat-M1 Band 26 (Channel Bandwidth 1.4MHz)	824.7-848.3	183.231mW (22.63dBm)	144.544mW (21.60dBm)	1M09G7D	1M09D7W
	Cat-M1 Band 26 (Channel Bandwidth 3MHz)	825.5-847.5	186.638mW (22.71dBm)	149.968mW (21.76dBm)	1M09G7D	1M09D7W
	Cat-M1 Band 26 (Channel Bandwidth 5MHz)	826.5-846.5	181.552mW (22.59dBm)	174.985mW (22.43dBm)	1M09G7D	1M09D7W
	Cat-M1 Band 26 (Channel Bandwidth 10MHz)	829.0-844.0	182.810mW (22.62dBm)	177.828mW (22.50dBm)	1M09G7D	1M09D7W
	Cat-M1 Band 26 (Channel Bandwidth 15MHz)	831.5-841.5	187.068mW (22.72dBm)	178.649mW (22.52dBm)	1M09G7D	1M09D7W

Band / Bandwidth		TX Frequency Range (MHz)	Max. EIRP Power		Emission Designator	
			QPSK	16QAM	QPSK	16QAM
For Part 90	Cat-M1 Band 26 (Channel Bandwidth 1.4MHz)	814.7-823.3	174.181mW (22.41dBm)	139.637mW (21.45dBm)	1M09G7D	1M09D7W
	Cat-M1 Band 26 (Channel Bandwidth 3MHz)	815.5-822.5	177.828mW (22.50dBm)	143.219mW (21.56dBm)	1M09G7D	1M09D7W
	Cat-M1 Band 26 (Channel Bandwidth 5MHz)	816.5-821.5	165.959mW (22.20dBm)	164.059mW (22.15dBm)	1M09G7D	1M09D7W
	Cat-M1 Band 26 (Channel Bandwidth 10MHz)	819.0	181.970mW (22.60dBm)	163.305mW (22.13dBm)	1M09G7D	1M09D7W
Cat-M1 Band 66 (Channel Bandwidth 1.4 MHz)		1710.7-1779.3	514.044mW (27.11dBm)	444.631mW (26.48dBm)	1M09G7D	1M09D7W
Cat-M1 Band 66 (Channel Bandwidth 3MHz)		1711.5-1778.5	516.416mW (27.13dBm)	451.856mW (26.55dBm)	1M09G7D	1M09D7W
Cat-M1 Band 66 (Channel Bandwidth 5MHz)		1712.5-1777.5	496.592mW (26.96dBm)	490.908mW (26.91dBm)	1M09G7D	1M09D7W
Cat-M1 Band 66 (Channel Bandwidth 10MHz)		1715.0-1775.0	497.737mW (26.97dBm)	487.528mW (26.88dBm)	1M09G7D	1M09D7W
Cat-M1 Band 66 (Channel Bandwidth 15MHz)		1717.5-1772.5	519.996mW (27.16dBm)	505.825mW (27.04dBm)	1M09G7D	1M09D7W
Cat-M1 Band 66 (Channel Bandwidth 20MHz)		1720.0-1770.0	521.195mW (27.17dBm)	518.800mW (27.15dBm)	1M09G7D	1M09D7W

Band / Bandwidth	TX Frequency Range (MHz)	Max. ERP Power		Emission Designator	
		QPSK	16QAM	QPSK	16QAM
Cat-M1 Band 5 (Channel Bandwidth 1.4MHz)	824.7-848.3	197.697mW (22.96dBm)	176.604mW (22.47dBm)	1M09G7D	1M09D7W
Cat-M1 Band 5 (Channel Bandwidth 3MHz)	825.5-847.5	194.984mW (22.90dBm)	160.325mW (22.05dBm)	1M09G7D	1M09D7W
Cat-M1 Band 5 (Channel Bandwidth 5MHz)	826.5-846.5	196.789mW (22.94dBm)	189.234mW (22.77dBm)	1M09G7D	1M09D7W
Cat-M1 Band 5 (Channel Bandwidth 10MHz)	829.0-844.0	199.986mW (23.01dBm)	187.068mW (22.72dBm)	1M09G7D	1M09D7W
Cat-M1 Band 12 (Channel Bandwidth 1.4MHz)	699.7-715.3	106.170mW (20.26dBm)	93.972mW (19.73dBm)	1M09G7D	1M09D7W
Cat-M1 Band 12 (Channel Bandwidth 3MHz)	700.5-714.5	108.893mW (20.37dBm)	97.499mW (19.89dBm)	1M09G7D	1M09D7W
Cat-M1 Band 12 (Channel Bandwidth 5MHz)	701.5-713.5	106.170mW (20.26dBm)	101.859mW (20.08dBm)	1M09G7D	1M09D7W
Cat-M1 Band 12 (Channel Bandwidth 10MHz)	704.0-711.0	108.893mW (20.37dBm)	101.859mW (20.08dBm)	1M09G7D	1M09D7W
Cat-M1 Band 13 (Channel Bandwidth 5MHz)	779.5-784.5	140.929mW (21.49dBm)	140.281mW (21.47dBm)	1M09G7D	1M09D7W
Cat-M1 Band 13 (Channel Bandwidth 10MHz)	782.0	144.544mW (21.60dBm)	141.906mW (21.52dBm)	1M09G7D	1M09D7W
Cat-M1 Band 85 (Channel Bandwidth 5MHz)	700.5-713.5	116.413mW (20.66dBm)	111.173mW (20.46dBm)	1M09G7D	1M09D7W
Cat-M1 Band 85 (Channel Bandwidth 10MHz)	703.0-711.0	119.399mW (20.77dBm)	113.763mW (20.56dBm)	1M09G7D	1M09D7W

2. The EUT consumes power from the following batteries.

Battery 1	
Brand	EVE
Model	BAT-63820-001
Power Rating	7.2V, 38Ah, 274 Wh

Battery 2	
Brand	Vitrocell
Model	BAT-63820-002
Power Rating	7.2V, 38Ah, 274 Wh

3. 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.

Type	Monopole with gnd resonator							
Connector	Murata MM8030-2610B/RJ3/RK0							
Antenna gain (dBi)								
Cat-M1 Band								
2	4	5	12	13	25	26	66	85
3.51	3.27	1.94	-0.33	0.69	3.51	1.94	3.84	-0.33

* 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:	EUT can be used in the following ways: X-axis/ Y-axis/ Z-axis. Pre-scan these ways and find the worst case as a representative test condition.
Worst Case:	X-axis/ Y-axis/ Z-axis Worst Condition: X-axis

	Mode	Power
EUT Configure Mode	A	Power from battery 1
	B	Power from battery 2

For Cat-M1 Band 2

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A	EIRP	18607 (1850.70 MHz) 18900 (1880.00 MHz) 19193 (1909.30 MHz)	1.4 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		18615 (1851.50 MHz) 18900 (1880.00 MHz) 19185 (1908.50 MHz)	3 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		18625 (1852.50 MHz) 18900 (1880.00 MHz) 19175 (1907.50 MHz)	5 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		18650 (1855.00 MHz) 18900 (1880.00 MHz) 19150 (1905.00 MHz)	10 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		18675 (1857.50 MHz) 18900 (1880.00 MHz) 19125 (1902.50 MHz)	15 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		18700 (1860.00 MHz) 18900 (1880.00 MHz) 19100 (1900.00 MHz)	20 MHz	QPSK / 16QAM	1 RB Half RB Full RB
A	Modulation Characteristics	18900 (1880.00 MHz)	20 MHz	QPSK / 16QAM	Full RB
A	Frequency Stability	18607 (1850.70 MHz) 19193 (1909.30 MHz)	1.4 MHz	QPSK	Full RB
		18615 (1851.50 MHz) 19185 (1908.50 MHz)	3 MHz	QPSK	Full RB
		18625 (1852.50 MHz) 19175 (1907.50 MHz)	5 MHz	QPSK	Full RB
		18650 (1855.00 MHz) 19150 (1905.00 MHz)	10 MHz	QPSK	Full RB
		18675 (1857.50 MHz) 19125 (1902.50 MHz)	15 MHz	QPSK	Full RB
		18700 (1860.00 MHz) 19100 (1900.00 MHz)	20 MHz	QPSK	Full RB

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A	Occupied Bandwidth	18607 (1850.70 MHz) 18900 (1880.00 MHz) 19193 (1909.30 MHz)	1.4 MHz	QPSK / 16QAM	Full RB
		18615 (1851.50 MHz) 18900 (1880.00 MHz) 19185 (1908.50 MHz)	3 MHz	QPSK / 16QAM	Full RB
		18625 (1852.50 MHz) 18900 (1880.00 MHz) 19175 (1907.50 MHz)	5 MHz	QPSK / 16QAM	Full RB
		18650 (1855.00 MHz) 18900 (1880.00 MHz) 19150 (1905.00 MHz)	10 MHz	QPSK / 16QAM	Full RB
		18675 (1857.50 MHz) 18900 (1880.00 MHz) 19125 (1902.50 MHz)	15 MHz	QPSK / 16QAM	Full RB
		18700 (1860.00 MHz) 18900 (1880.00 MHz) 19100 (1900.00 MHz)	20 MHz	QPSK / 16QAM	Full RB
A	Peak to Average Ratio	18607 (1850.70 MHz) 18900 (1880.00 MHz) 19193 (1909.30 MHz)	1.4 MHz	QPSK / 16QAM	1 RB
		18615 (1851.50 MHz) 18900 (1880.00 MHz) 19185 (1908.50 MHz)	3 MHz	QPSK / 16QAM	1 RB
		18625 (1852.50 MHz) 18900 (1880.00 MHz) 19175 (1907.50 MHz)	5 MHz	QPSK / 16QAM	1 RB
		18650 (1855.00 MHz) 18900 (1880.00 MHz) 19150 (1905.00 MHz)	10 MHz	QPSK / 16QAM	1 RB
		18675 (1857.50 MHz) 18900 (1880.00 MHz) 19125 (1902.50 MHz)	15 MHz	QPSK / 16QAM	1 RB
		18700 (1860.00 MHz) 18900 (1880.00 MHz) 19100 (1900.00 MHz)	20 MHz	QPSK / 16QAM	1 RB

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A	Conducted Emission	18607 (1850.70 MHz) 18900 (1880.00 MHz) 19193 (1909.30 MHz)	1.4 MHz	QPSK	1 RB Full RB
		18615 (1851.50 MHz) 18900 (1880.00 MHz) 19185 (1908.50 MHz)	3 MHz	QPSK	1 RB Full RB
		18625 (1852.50 MHz) 18900 (1880.00 MHz) 19175 (1907.50 MHz)	5 MHz	QPSK	1 RB Full RB
		18650 (1855.00 MHz) 18900 (1880.00 MHz) 19150 (1905.00 MHz)	10 MHz	QPSK	1 RB Full RB
		18675 (1857.50 MHz) 18900 (1880.00 MHz) 19125 (1902.50 MHz)	15 MHz	QPSK	1 RB Full RB
		18700 (1860.00 MHz) 18900 (1880.00 MHz) 19100 (1900.00 MHz)	20 MHz	QPSK	1 RB Full RB
A, B	Radiated Spurious Emissions below 1GHz	18900 (1880.00 MHz)	20 MHz	QPSK	1 RB
A	Radiated Spurious Emissions above 1GHz	18607 (1850.70 MHz) 18900 (1880.00 MHz) 19193 (1909.30 MHz)	1.4 MHz	QPSK	1 RB
		18625 (1852.50 MHz) 18900 (1880.00 MHz) 19175 (1907.50 MHz)	5 MHz	QPSK	1 RB
		18700 (1860.00 MHz) 18900 (1880.00 MHz) 19100 (1900.00 MHz)	20 MHz	QPSK	1 RB

For Cat-M1 Band 4

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A	EIRP	19957 (1710.70 MHz) 20175 (1732.50 MHz) 20393 (1754.30 MHz)	1.4 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		19965 (1711.50 MHz) 20175 (1732.50 MHz) 20385 (1753.50 MHz)	3 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		19975 (1712.50 MHz) 20175 (1732.50 MHz) 20375 (1752.50 MHz)	5 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		20000 (1715.00 MHz) 20175 (1732.50 MHz) 20350 (1750.00 MHz)	10 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		20025 (1717.50 MHz) 20175 (1732.50 MHz) 20325 (1747.50 MHz)	15 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		20050 (1720.00 MHz) 20175 (1732.50 MHz) 20300 (1745.00 MHz)	20 MHz	QPSK / 16QAM	1 RB Half RB Full RB
A	Modulation Characteristics	20175 (1732.50 MHz)	20 MHz	QPSK / 16QAM	Full RB
A	Frequency Stability	19957 (1710.70 MHz) 20393 (1754.30 MHz)	1.4 MHz	QPSK	Full RB
		19965 (1711.50 MHz) 20385 (1753.50 MHz)	3 MHz	QPSK	Full RB
		19975 (1712.50 MHz) 20375 (1752.50 MHz)	5 MHz	QPSK	Full RB
		20000 (1715.00 MHz) 20350 (1750.00 MHz)	10 MHz	QPSK	Full RB
		20025 (1717.50 MHz) 20325 (1747.50 MHz)	15 MHz	QPSK	Full RB
		20050 (1720.00 MHz) 20300 (1745.00 MHz)	20 MHz	QPSK	Full RB
A	Occupied Bandwidth	19957 (1710.70 MHz) 20175 (1732.50 MHz) 20393 (1754.30 MHz)	1.4 MHz	QPSK / 16QAM	Full RB
		19965 (1711.50 MHz) 20175 (1732.50 MHz) 20385 (1753.50 MHz)	3 MHz	QPSK / 16QAM	Full RB
		19975 (1712.50 MHz) 20175 (1732.50 MHz) 20375 (1752.50 MHz)	5 MHz	QPSK / 16QAM	Full RB
		20000 (1715.00 MHz) 20175 (1732.50 MHz) 20350 (1750.00 MHz)	10 MHz	QPSK / 16QAM	Full RB
		20025 (1717.50 MHz) 20175 (1732.50 MHz) 20325 (1747.50 MHz)	15 MHz	QPSK / 16QAM	Full RB
		20050 (1720.00 MHz) 20175 (1732.50 MHz) 20300 (1745.00 MHz)	20 MHz	QPSK / 16QAM	Full RB

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A	Peak to Average Ratio	19957 (1710.70 MHz) 20175 (1732.50 MHz) 20393 (1754.30 MHz)	1.4 MHz	QPSK / 16QAM	1 RB
		19965 (1711.50 MHz) 20175 (1732.50 MHz) 20385 (1753.50 MHz)	3 MHz	QPSK / 16QAM	1 RB
		19975 (1712.50 MHz) 20175 (1732.50 MHz) 20375 (1752.50 MHz)	5 MHz	QPSK / 16QAM	1 RB
		20000 (1715.00 MHz) 20175 (1732.50 MHz) 20350 (1750.00 MHz)	10 MHz	QPSK / 16QAM	1 RB
		20025 (1717.50 MHz) 20175 (1732.50 MHz) 20325 (1747.50 MHz)	15 MHz	QPSK / 16QAM	1 RB
		20050 (1720.00 MHz) 20175 (1732.50 MHz) 20300 (1745.00 MHz)	20 MHz	QPSK / 16QAM	1 RB
A	Conducted Emission	19957 (1710.70 MHz) 20175 (1732.50 MHz) 20393 (1754.30 MHz)	1.4 MHz	QPSK	1 RB Full RB
		19965 (1711.50 MHz) 20175 (1732.50 MHz) 20385 (1753.50 MHz)	3 MHz	QPSK	1 RB Full RB
		19975 (1712.50 MHz) 20175 (1732.50 MHz) 20375 (1752.50 MHz)	5 MHz	QPSK	1 RB Full RB
		20000 (1715.00 MHz) 20175 (1732.50 MHz) 20350 (1750.00 MHz)	10 MHz	QPSK	1 RB Full RB
		20025 (1717.50 MHz) 20175 (1732.50 MHz) 20325 (1747.50 MHz)	15 MHz	QPSK	1 RB Full RB
		20050 (1720.00 MHz) 20175 (1732.50 MHz) 20300 (1745.00 MHz)	20 MHz	QPSK	1 RB Full RB
A, B	Radiated Spurious Emissions below 1GHz	20175 (1732.50 MHz)	20 MHz	QPSK	1 RB
A	Radiated Spurious Emissions above 1GHz	19957 (1710.70 MHz) 20175 (1732.50 MHz) 20393 (1754.30 MHz)	1.4 MHz	QPSK	1 RB
		19975 (1712.50 MHz) 20175 (1732.50 MHz) 20375 (1752.50 MHz)	5 MHz	QPSK	1 RB
		20050 (1720.00 MHz) 20175 (1732.50 MHz) 20300 (1745.00 MHz)	20 MHz	QPSK	1 RB

For Cat-M1 Band 5

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A	EIRP	20407 (824.70 MHz) 20525 (836.50 MHz) 20643 (848.30 MHz)	1.4 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		20415 (825.50 MHz) 20525 (836.50 MHz) 20635 (847.50 MHz)	3 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		20425 (826.50 MHz) 20525 (836.50 MHz) 20625 (846.50 MHz)	5 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		20450 (829.00 MHz) 20525 (836.50 MHz) 20600 (844.00 MHz)	10 MHz	QPSK / 16QAM	1 RB Half RB Full RB
A	Modulation Characteristics	20525 (836.50 MHz)	10 MHz	QPSK / 16QAM	Full RB
A	Frequency Stability	20407 (824.70 MHz) 20643 (848.30 MHz)	1.4 MHz	QPSK	Full RB
		20415 (825.50 MHz) 20635 (847.50 MHz)	3 MHz	QPSK	Full RB
		20425 (826.50 MHz) 20625 (846.50 MHz)	5 MHz	QPSK	Full RB
		20450 (829.00 MHz) 20600 (844.00 MHz)	10 MHz	QPSK	Full RB
A	Occupied Bandwidth	20407 (824.70 MHz) 20525 (836.50 MHz) 20643 (848.30 MHz)	1.4 MHz	QPSK / 16QAM	Full RB
		20415 (825.50 MHz) 20525 (836.50 MHz) 20635 (847.50 MHz)	3 MHz	QPSK / 16QAM	Full RB
		20425 (826.50 MHz) 20525 (836.50 MHz) 20625 (846.50 MHz)	5 MHz	QPSK / 16QAM	Full RB
		20450 (829.00 MHz) 20525 (836.50 MHz) 20600 (844.00 MHz)	10 MHz	QPSK / 16QAM	Full RB
A	Peak to Average Ratio	20407 (824.70 MHz) 20525 (836.50 MHz) 20643 (848.30 MHz)	1.4 MHz	QPSK / 16QAM	1 RB
		20415 (825.50 MHz) 20525 (836.50 MHz) 20635 (847.50 MHz)	3 MHz	QPSK / 16QAM	1 RB
		20425 (826.50 MHz) 20525 (836.50 MHz) 20625 (846.50 MHz)	5 MHz	QPSK / 16QAM	1 RB
		20450 (829.00 MHz) 20525 (836.50 MHz) 20600 (844.00 MHz)	10 MHz	QPSK / 16QAM	1 RB

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A	Conducted Emission	20407 (824.70 MHz) 20525 (836.50 MHz) 20643 (848.30 MHz)	1.4 MHz	QPSK	1 RB Full RB
		20415 (825.50 MHz) 20525 (836.50 MHz) 20635 (847.50 MHz)	3 MHz	QPSK	1 RB Full RB
		20425 (826.50 MHz) 20525 (836.50 MHz) 20625 (846.50 MHz)	5 MHz	QPSK	1 RB Full RB
		20450 (829.00 MHz) 20525 (836.50 MHz) 20600 (844.00 MHz)	10 MHz	QPSK	1 RB Full RB
A, B	Radiated Spurious Emissions below 1GHz	20525 (836.50 MHz)	10 MHz	QPSK	1 RB
A	Radiated Spurious Emissions above 1GHz	20407 (824.70 MHz) 20525 (836.50 MHz) 20643 (848.30 MHz)	1.4 MHz	QPSK	1 RB
		20425 (826.50 MHz) 20525 (836.50 MHz) 20625 (846.50 MHz)	5 MHz	QPSK	1 RB
		20450 (829.00 MHz) 20525 (836.50 MHz) 20600 (844.00 MHz)	10 MHz	QPSK	1 RB

For Cat-M1 Band 12

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A	ERP	23017 (699.70 MHz) 23095 (707.50 MHz) 23173 (715.30 MHz)	1.4 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		23025 (700.50 MHz) 23095 (707.50 MHz) 23165 (714.50 MHz)	3 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		23035 (701.50 MHz) 23095 (707.50 MHz) 23155 (713.50 MHz)	5 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		23060 (704.00 MHz) 23095 (707.50 MHz) 23130 (711.00 MHz)	10 MHz	QPSK / 16QAM	1 RB Half RB Full RB
A	Modulation Characteristics	23095 (707.50 MHz)	10 MHz	QPSK / 16QAM	Full RB
A	Frequency Stability	23017 (699.70 MHz) 23173 (715.30 MHz)	1.4 MHz	QPSK	Full RB
		23025 (700.50 MHz) 23165 (714.50 MHz)	3 MHz	QPSK	Full RB
		23035 (701.50 MHz) 23155 (713.50 MHz)	5 MHz	QPSK	Full RB
		23060 (704.00 MHz) 23130 (711.00 MHz)	10 MHz	QPSK	Full RB
A	Occupied Bandwidth	23017 (699.70 MHz) 23095 (707.50 MHz) 23173 (715.30 MHz)	1.4 MHz	QPSK / 16QAM	Full RB
		23025 (700.50 MHz) 23095 (707.50 MHz) 23165 (714.50 MHz)	3 MHz	QPSK / 16QAM	Full RB
		23035 (701.50 MHz) 23095 (707.50 MHz) 23155 (713.50 MHz)	5 MHz	QPSK / 16QAM	Full RB
		23060 (704.00 MHz) 23095 (707.50 MHz) 23130 (711.00 MHz)	10 MHz	QPSK / 16QAM	Full RB
A	Peak to Average Ratio	23017 (699.70 MHz) 23095 (707.50 MHz) 23173 (715.30 MHz)	1.4 MHz	QPSK / 16QAM	1 RB
		23025 (700.50 MHz) 23095 (707.50 MHz) 23165 (714.50 MHz)	3 MHz	QPSK / 16QAM	1 RB
		23035 (701.50 MHz) 23095 (707.50 MHz) 23155 (713.50 MHz)	5 MHz	QPSK / 16QAM	1 RB
		23060 (704.00 MHz) 23095 (707.50 MHz) 23130 (711.00 MHz)	10 MHz	QPSK / 16QAM	1 RB

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A	Conducted Emission	23017 (699.70 MHz) 23095 (707.50 MHz) 23173 (715.30 MHz)	1.4 MHz	QPSK	1 RB Full RB
		23025 (700.50 MHz) 23095 (707.50 MHz) 23165 (714.50 MHz)	3 MHz	QPSK	1 RB Full RB
		23035 (701.50 MHz) 23095 (707.50 MHz) 23155 (713.50 MHz)	5 MHz	QPSK	1 RB Full RB
		23060 (704.00 MHz) 23095 (707.50 MHz) 23130 (711.00 MHz)	10 MHz	QPSK	1 RB Full RB
A, B	Radiated Spurious Emissions below 1GHz	23095 (707.50 MHz)	10 MHz	QPSK	1 RB
A	Radiated Spurious Emissions above 1GHz	23017 (699.70 MHz) 23095 (707.50 MHz) 23173 (715.30 MHz)	1.4 MHz	QPSK	1 RB
		23035 (701.50 MHz) 23095 (707.50 MHz) 23155 (713.50 MHz)	5 MHz	QPSK	1 RB
		23060 (704.00 MHz) 23095 (707.50 MHz) 23130 (711.00 MHz)	10 MHz	QPSK	1 RB

For Cat-M1 Band 13

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A	ERP	23205 (779.50 MHz) 23230 (782.00 MHz) 23255 (784.50 MHz)	5 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		23230 (782.00 MHz)	10 MHz	QPSK / 16QAM	1 RB Half RB Full RB
A	Modulation Characteristics	23230 (782.00 MHz)	10 MHz	QPSK / 16QAM	Full RB
A	Frequency Stability	23205 (779.50 MHz) 23255 (784.50 MHz)	5 MHz	QPSK	Full RB
		23230 (782.00 MHz)	10 MHz	QPSK	Full RB
A	Occupied Bandwidth	23205 (779.50 MHz) 23230 (782.00 MHz) 23255 (784.50 MHz)	5 MHz	QPSK / 16QAM	Full RB
		23230 (782.00 MHz)	10 MHz	QPSK / 16QAM	Full RB
A	Peak to Average Ratio	23205 (779.50 MHz) 23230 (782.00 MHz) 23255 (784.50 MHz)	5 MHz	QPSK / 16QAM	1 RB
		23230 (782.00 MHz)	10 MHz	QPSK / 16QAM	1 RB
A	Conducted Emission	23205 (779.50 MHz) 23230 (782.00 MHz) 23255 (784.50 MHz)	5 MHz	QPSK	1 RB Full RB
		23230 (782.00 MHz)	10 MHz	QPSK	1 RB Full RB
A, B	Radiated Spurious Emissions below 1GHz	23230 (782.00 MHz)	10 MHz	QPSK	1 RB
A	Radiated Spurious Emissions above 1GHz	23205 (779.50 MHz) 23230 (782.00 MHz) 23255 (784.50 MHz)	5 MHz	QPSK	1 RB
		23230 (782.00 MHz)	10 MHz	QPSK	1 RB

For Cat-M1 Band 25

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A	EIRP	26047 (1850.70 MHz) 26365 (1882.50 MHz) 26683 (1914.30 MHz)	1.4 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		26055 (1851.50 MHz) 26365 (1882.50 MHz) 26675 (1913.50 MHz)	3 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		26065 (1852.50 MHz) 26365 (1882.50 MHz) 26665 (1912.50 MHz)	5 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		26090 (1855.00 MHz) 26365 (1882.50 MHz) 26640 (1910.00 MHz)	10 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		26115 (1857.50 MHz) 26365 (1882.50 MHz) 26615 (1907.50 MHz)	15 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		26140 (1860.00 MHz) 26365 (1882.50 MHz) 26590 (1905.00 MHz)	20 MHz	QPSK / 16QAM	1 RB Half RB Full RB
A	Modulation Characteristics	26365 (1882.50 MHz)	20 MHz	QPSK / 16QAM	Full RB
A	Frequency Stability	26047 (1850.70 MHz) 26683 (1914.30 MHz)	1.4 MHz	QPSK	Full RB
		26055 (1851.50 MHz) 26675 (1913.50 MHz)	3 MHz	QPSK	Full RB
		26065 (1852.50 MHz) 26665 (1912.50 MHz)	5 MHz	QPSK	Full RB
		26090 (1855.00 MHz) 26640 (1910.00 MHz)	10 MHz	QPSK	Full RB
		26115 (1857.50 MHz) 26615 (1907.50 MHz)	15 MHz	QPSK	Full RB
		26140 (1860.00 MHz) 26590 (1905.00 MHz)	20 MHz	QPSK	Full RB
A	Occupied Bandwidth	26047 (1850.70 MHz) 26365 (1882.50 MHz) 26683 (1914.30 MHz)	1.4 MHz	QPSK / 16QAM	Full RB
		26055 (1851.50 MHz) 26365 (1882.50 MHz) 26675 (1913.50 MHz)	3 MHz	QPSK / 16QAM	Full RB
		26065 (1852.50 MHz) 26365 (1882.50 MHz) 26665 (1912.50 MHz)	5 MHz	QPSK / 16QAM	Full RB
		26090 (1855.00 MHz) 26365 (1882.50 MHz) 26640 (1910.00 MHz)	10 MHz	QPSK / 16QAM	Full RB
		26115 (1857.50 MHz) 26365 (1882.50 MHz) 26615 (1907.50 MHz)	15 MHz	QPSK / 16QAM	Full RB
		26140 (1860.00 MHz) 26365 (1882.50 MHz) 26590 (1905.00 MHz)	20 MHz	QPSK / 16QAM	Full RB

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A	Peak to Average Ratio	26047 (1850.70 MHz) 26365 (1882.50 MHz) 26683 (1914.30 MHz)	1.4 MHz	QPSK / 16QAM	1 RB
		26055 (1851.50 MHz) 26365 (1882.50 MHz) 26675 (1913.50 MHz)	3 MHz	QPSK / 16QAM	1 RB
		26065 (1852.50 MHz) 26365 (1882.50 MHz) 26665 (1912.50 MHz)	5 MHz	QPSK / 16QAM	1 RB
		26090 (1855.00 MHz) 26365 (1882.50 MHz) 26640 (1910.00 MHz)	10 MHz	QPSK / 16QAM	1 RB
		26115 (1857.50 MHz) 26365 (1882.50 MHz) 26615 (1907.50 MHz)	15 MHz	QPSK / 16QAM	1 RB
		26140 (1860.00 MHz) 26365 (1882.50 MHz) 26590 (1905.00 MHz)	20 MHz	QPSK / 16QAM	1 RB
A	Conducted Emission	26047 (1850.70 MHz) 26365 (1882.50 MHz) 26683 (1914.30 MHz)	1.4 MHz	QPSK	1 RB Full RB
		26055 (1851.50 MHz) 26365 (1882.50 MHz) 26675 (1913.50 MHz)	3 MHz	QPSK	1 RB Full RB
		26065 (1852.50 MHz) 26365 (1882.50 MHz) 26665 (1912.50 MHz)	5 MHz	QPSK	1 RB Full RB
		26090 (1855.00 MHz) 26365 (1882.50 MHz) 26640 (1910.00 MHz)	10 MHz	QPSK	1 RB Full RB
		26115 (1857.50 MHz) 26365 (1882.50 MHz) 26615 (1907.50 MHz)	15 MHz	QPSK	1 RB Full RB
		26140 (1860.00 MHz) 26365 (1882.50 MHz) 26590 (1905.00 MHz)	20 MHz	QPSK	1 RB Full RB
A, B	Radiated Spurious Emissions below 1GHz	26683 (1914.30 MHz)	1.4 MHz	QPSK	1 RB
A	Radiated Spurious Emissions above 1GHz	26047 (1850.70 MHz) 26365 (1882.50 MHz) 26683 (1914.30 MHz)	1.4 MHz	QPSK	1 RB
		26065 (1852.50 MHz) 26365 (1882.50 MHz) 26665 (1912.50 MHz)	5 MHz	QPSK	1 RB
		26140 (1860.00 MHz) 26365 (1882.50 MHz) 26590 (1905.00 MHz)	20 MHz	QPSK	1 RB

For Cat-M1 Band 26 (Part 22)

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A	EIRP	26797 (824.70 MHz) 26915 (836.50 MHz) 27033 (848.30 MHz)	1.4 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		26805 (825.50 MHz) 26915 (836.50 MHz) 27025 (847.50 MHz)	3 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		26815 (826.50 MHz) 26915 (836.50 MHz) 27015 (846.50 MHz)	5 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		26840 (829.00 MHz) 26915 (836.50 MHz) 26990 (844.00 MHz)	10 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		26865 (831.50 MHz) 26915 (836.50 MHz) 26965 (841.50 MHz)	15 MHz	QPSK / 16QAM	1 RB Half RB Full RB
A	Modulation Characteristics	26915 (836.50 MHz)	15 MHz	QPSK / 16QAM	Full RB
A	Frequency Stability	26797 (824.70 MHz) 27033 (848.30 MHz)	1.4 MHz	QPSK	Full RB
		26805 (825.50 MHz) 27025 (847.50 MHz)	3 MHz	QPSK	Full RB
		26815 (826.50 MHz) 27015 (846.50 MHz)	5 MHz	QPSK	Full RB
		26840 (829.00 MHz) 26990 (844.00 MHz)	10 MHz	QPSK	Full RB
		26865 (831.50 MHz) 26965 (841.50 MHz)	15 MHz	QPSK	Full RB
A	Occupied Bandwidth	26797 (824.70 MHz) 26915 (836.50 MHz) 27033 (848.30 MHz)	1.4 MHz	QPSK / 16QAM	Full RB
		26805 (825.50 MHz) 26915 (836.50 MHz) 27025 (847.50 MHz)	3 MHz	QPSK / 16QAM	Full RB
		26815 (826.50 MHz) 26915 (836.50 MHz) 27015 (846.50 MHz)	5 MHz	QPSK / 16QAM	Full RB
		26840 (829.00 MHz) 26915 (836.50 MHz) 26990 (844.00 MHz)	10 MHz	QPSK / 16QAM	Full RB
		26865 (831.50 MHz) 26915 (836.50 MHz) 26965 (841.50 MHz)	15 MHz	QPSK / 16QAM	Full RB

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A	Peak to Average Ratio	26797 (824.70 MHz) 26915 (836.50 MHz) 27033 (848.30 MHz)	1.4 MHz	QPSK / 16QAM	1 RB
		26805 (825.50 MHz) 26915 (836.50 MHz) 27025 (847.50 MHz)	3 MHz	QPSK / 16QAM	1 RB
		26815 (826.50 MHz) 26915 (836.50 MHz) 27015 (846.50 MHz)	5 MHz	QPSK / 16QAM	1 RB
		26840 (829.00 MHz) 26915 (836.50 MHz) 26990 (844.00 MHz)	10 MHz	QPSK / 16QAM	1 RB
		26865 (831.50 MHz) 26915 (836.50 MHz) 26965 (841.50 MHz)	15 MHz	QPSK / 16QAM	1 RB
A	Conducted Emission	26797 (824.70 MHz) 26915 (836.50 MHz) 27033 (848.30 MHz)	1.4 MHz	QPSK	1 RB Full RB
		26805 (825.50 MHz) 26915 (836.50 MHz) 27025 (847.50 MHz)	3 MHz	QPSK	1 RB Full RB
		26815 (826.50 MHz) 26915 (836.50 MHz) 27015 (846.50 MHz)	5 MHz	QPSK	1 RB Full RB
		26840 (829.00 MHz) 26915 (836.50 MHz) 26990 (844.00 MHz)	10 MHz	QPSK	1 RB Full RB
		26865 (831.50 MHz) 26915 (836.50 MHz) 26965 (841.50 MHz)	15 MHz	QPSK	1 RB Full RB
A, B	Radiated Spurious Emissions below 1GHz	26915 (836.50 MHz)	15 MHz	QPSK	1 RB
A	Radiated Spurious Emissions above 1GHz	26797 (824.70 MHz) 26915 (836.50 MHz) 27033 (848.30 MHz)	1.4 MHz	QPSK	1 RB
		26815 (826.50 MHz) 26915 (836.50 MHz) 27015 (846.50 MHz)	5 MHz	QPSK	1 RB
		26865 (831.50 MHz) 26915 (836.50 MHz) 26965 (841.50 MHz)	15 MHz	QPSK	1 RB

For Cat-M1 Band 26 (Part 90)

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A	ERP	26697 (814.70 MHz) 26740 (819.00 MHz) 26783 (823.30 MHz)	1.4 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		26705 (815.50 MHz) 26740 (819.00 MHz) 26775 (822.50 MHz)	3 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		26715 (816.50 MHz) 26740 (819.00 MHz) 26765 (821.50 MHz)	5 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		26740 (819.00 MHz)	10 MHz	QPSK / 16QAM	1 RB Half RB Full RB
A	Modulation Characteristics	26740 (819.00 MHz)	10MHz	QPSK / 16QAM	Full RB
A	Frequency Stability	26697 (814.70 MHz) 26783 (823.30 MHz)	1.4 MHz	QPSK	Full RB
		26705 (815.50 MHz) 26775 (822.50 MHz)	3 MHz	QPSK	Full RB
		26715 (816.50 MHz) 26765 (821.50 MHz)	5 MHz	QPSK	Full RB
		26740 (819.00 MHz)	10 MHz	QPSK	Full RB
A	Occupied Bandwidth	26697 (814.70 MHz) 26740 (819.00 MHz) 26783 (823.30 MHz)	1.4 MHz	QPSK / 16QAM	Full RB
		26705 (815.50 MHz) 26740 (819.00 MHz) 26775 (822.50 MHz)	3 MHz	QPSK / 16QAM	Full RB
		26715 (816.50 MHz) 26740 (819.00 MHz) 26765 (821.50 MHz)	5 MHz	QPSK / 16QAM	Full RB
		26740 (819.00 MHz)	10 MHz	QPSK / 16QAM	Full RB
A	Conducted Emission	26697 (814.70 MHz) 26740 (819.00 MHz) 26783 (823.30 MHz)	1.4 MHz	QPSK	1 RB Full RB
		26705 (815.50 MHz) 26740 (819.00 MHz) 26775 (822.50 MHz)	3 MHz	QPSK	1 RB Full RB
		26715 (816.50 MHz) 26740 (819.00 MHz) 26765 (821.50 MHz)	5 MHz	QPSK	1 RB Full RB
		26740 (819.00 MHz)	10 MHz	QPSK	1 RB Full RB

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A, B	Radiated Spurious Emissions below 1GHz	26740 (819.00 MHz)	10 MHz	QPSK	1 RB
A	Radiated Spurious Emissions above 1GHz	26697 (814.70 MHz) 26740 (819.00 MHz) 26783 (823.30 MHz)	1.4 MHz	QPSK	1 RB
		26715 (816.50 MHz) 26740 (819.00 MHz) 26765 (821.50 MHz)	5 MHz	QPSK	1 RB
		26740 (819.00 MHz)	10 MHz	QPSK	1 RB

For Cat-M1 Band 66

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A	EIRP	131979 (1710.70 MHz) 132322 (1745.00 MHz) 132665 (1779.30 MHz)	1.4 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		131987 (1711.50 MHz) 132322 (1745.00 MHz) 132657 (1778.50 MHz)	3 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		131997 (1712.50 MHz) 132322 (1745.00 MHz) 132647 (1777.50 MHz)	5 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		132022 (1715.00 MHz) 132322 (1745.00 MHz) 132622 (1775.00 MHz)	10 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		132047 (1717.50 MHz) 132322 (1745.00 MHz) 132597 (1772.50 MHz)	15 MHz	QPSK / 16QAM	1 RB Half RB Full RB
		132072 (1720.00 MHz) 132322 (1745.00 MHz) 132572 (1770.00 MHz)	20 MHz	QPSK / 16QAM	1 RB Half RB Full RB
A	Modulation Characteristics	132322 (1745.00 MHz)	20 MHz	QPSK / 16QAM	Full RB
A	Frequency Stability	131979 (1710.70 MHz) 132665 (1779.30 MHz)	1.4 MHz	QPSK	Full RB
		131987 (1711.50 MHz) 132657 (1778.50 MHz)	3 MHz	QPSK	Full RB
		131997 (1712.50 MHz) 132647 (1777.50 MHz)	5 MHz	QPSK	Full RB
		132022 (1715.00 MHz) 132622 (1775.00 MHz)	10 MHz	QPSK	Full RB
		132047 (1717.50 MHz) 132597 (1772.50 MHz)	15 MHz	QPSK	Full RB
		132072 (1720.00 MHz) 132572 (1770.00 MHz)	20 MHz	QPSK	Full RB
A	Occupied Bandwidth	131979 (1710.70 MHz) 132322 (1745.00 MHz) 132665 (1779.30 MHz)	1.4 MHz	QPSK / 16QAM	Full RB
		131987 (1711.50 MHz) 132322 (1745.00 MHz) 132657 (1778.50 MHz)	3 MHz	QPSK / 16QAM	Full RB
		131997 (1712.50 MHz) 132322 (1745.00 MHz) 132647 (1777.50 MHz)	5 MHz	QPSK / 16QAM	Full RB
		132022 (1715.00 MHz) 132322 (1745.00 MHz) 132622 (1775.00 MHz)	10 MHz	QPSK / 16QAM	Full RB
		132047 (1717.50 MHz) 132322 (1745.00 MHz) 132597 (1772.50 MHz)	15 MHz	QPSK / 16QAM	Full RB
		132072 (1720.00 MHz) 132322 (1745.00 MHz) 132572 (1770.00 MHz)	20 MHz	QPSK / 16QAM	Full RB

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A	Peak to Average Ratio	131979 (1710.70 MHz) 132322 (1745.00 MHz) 132665 (1779.30 MHz)	1.4 MHz	QPSK / 16QAM	1 RB
		131987 (1711.50 MHz) 132322 (1745.00 MHz) 132657 (1778.50 MHz)	3 MHz	QPSK / 16QAM	1 RB
		131997 (1712.50 MHz) 132322 (1745.00 MHz) 132647 (1777.50 MHz)	5 MHz	QPSK / 16QAM	1 RB
		132022 (1715.00 MHz) 132322 (1745.00 MHz) 132622 (1775.00 MHz)	10 MHz	QPSK / 16QAM	1 RB
		132047 (1717.50 MHz) 132322 (1745.00 MHz) 132597 (1772.50 MHz)	15 MHz	QPSK / 16QAM	1 RB
		132072 (1720.00 MHz) 132322 (1745.00 MHz) 132572 (1770.00 MHz)	20 MHz	QPSK / 16QAM	1 RB
A	Conducted Emission	131979 (1710.70 MHz) 132322 (1745.00 MHz) 132665 (1779.30 MHz)	1.4 MHz	QPSK	1 RB Full RB
		131987 (1711.50 MHz) 132322 (1745.00 MHz) 132657 (1778.50 MHz)	3 MHz	QPSK	1 RB Full RB
		131997 (1712.50 MHz) 132322 (1745.00 MHz) 132647 (1777.50 MHz)	5 MHz	QPSK	1 RB Full RB
		132022 (1715.00 MHz) 132322 (1745.00 MHz) 132622 (1775.00 MHz)	10 MHz	QPSK	1 RB Full RB
		132047 (1717.50 MHz) 132322 (1745.00 MHz) 132597 (1772.50 MHz)	15 MHz	QPSK	1 RB Full RB
		132072 (1720.00 MHz) 132322 (1745.00 MHz) 132572 (1770.00 MHz)	20 MHz	QPSK	1 RB Full RB
A, B	Radiated Spurious Emissions below 1GHz	132647 (1777.50 MHz)	5 MHz	QPSK	1 RB
A	Radiated Spurious Emissions above 1GHz	131979 (1710.70 MHz) 132322 (1745.00 MHz) 132665 (1779.30 MHz)	1.4 MHz	QPSK	1 RB
		131997 (1712.50 MHz) 132322 (1745.00 MHz) 132647 (1777.50 MHz)	5 MHz	QPSK	1 RB
		132072 (1720.00 MHz) 132322 (1745.00 MHz) 132572 (1770.00 MHz)	20 MHz	QPSK	1 RB

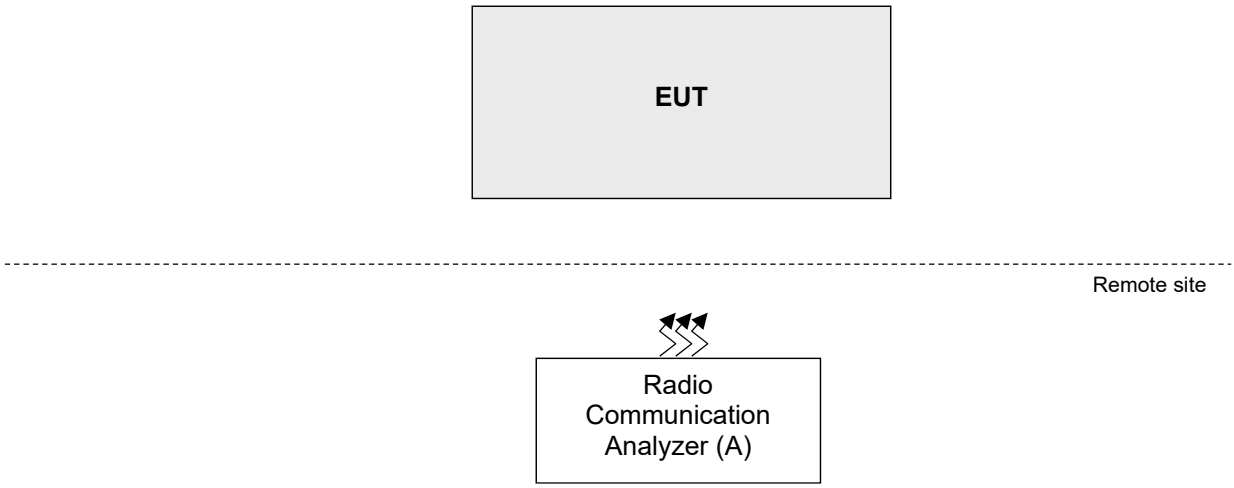
For Cat-M1 Band 85

EUT Configure Mode	Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
A	ERP	134027 (700.5MHz) 134092 (707.0MHz) 134157 (713.5MHz)	5MHz	QPSK / 16QAM	1 RB Half RB Full RB
		134052 (703.0MHz) 134092 (707.0MHz) 134132 (711.0MHz)	10MHz	QPSK / 16QAM	1 RB Half RB Full RB
A	Modulation Characteristics	134092 (707.0MHz)	10MHz	QPSK / 16QAM	Full RB
A	Frequency Stability	134027 (700.5MHz) 134157 (713.5MHz)	5MHz	QPSK	Full RB
		134052 (703.0MHz) 134132 (711.0MHz)	10MHz	QPSK	Full RB
A	Occupied Bandwidth	134027 (700.5MHz) 134092 (707.0MHz) 134157 (713.5MHz)	5MHz	QPSK / 16QAM	Full RB
		134052 (703.0MHz) 134092 (707.0MHz) 134132 (711.0MHz)	10MHz	QPSK / 16QAM	Full RB
A	Peak to Average Ratio	134027 (700.5MHz) 134092 (707.0MHz) 134157 (713.5MHz)	5MHz	QPSK / 16QAM	1 RB
		134052 (703.0MHz) 134092 (707.0MHz) 134132 (711.0MHz)	10MHz	QPSK / 16QAM	1 RB
A	Conducted Emission	134027 (700.5MHz) 134092 (707.0MHz) 134157 (713.5MHz)	5MHz	QPSK	1 RB Full RB
		134052 (703.0MHz) 134092 (707.0MHz) 134132 (711.0MHz)	10MHz	QPSK	1 RB Full RB
A, B	Radiated Spurious Emissions below 1GHz	134092 (707.0MHz)	10MHz	QPSK	1 RB
A	Radiated Spurious Emissions above 1GHz	134027 (700.5MHz) 134092 (707.0MHz) 134157 (713.5MHz)	5MHz	QPSK	1 RB
		134052 (703.0MHz) 134092 (707.0MHz) 134132 (711.0MHz)	10MHz	QPSK	1 RB

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



3.6 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Radio Communication Analyzer	Anritsu	MT8821C	6201462755	N/A	Provided by Lab

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
PXA Signal Analyzer KEYSIGHT	N9030B	MY57140488	2023/3/6	2024/3/5
Radio Communication Analyzer Anritsu	MT8821C	6201462755	2023/3/3	2024/3/2
Wideband Radio Communication Tester R&S	CMW500	152443	2023/8/10	2024/8/9
Software BV	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2023/11/17 ~ 2023/11/30

4.2 Modulation Characteristics

Refer to section 4.1 to get information of the instruments.

4.3 Peak to Average Ratio

Refer to section 4.1 to get information of the instruments.

4.4 Bandwidth

Refer to section 4.1 to get information of the instruments.

4.5 Conducted Spurious Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
PXA Signal Analyzer KEYSIGHT	N9030B	MY57140488	2023/3/6	2024/3/5
Radio Communication Analyzer Anritsu	MT8821C	6201462755	2023/3/3	2024/3/2
Wideband Radio Communication Tester R&S	CMW500	152443	2023/8/10	2024/8/9
Software BV	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2023/11/17 ~ 2023/11/30

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
PXA Signal Analyzer KEYSIGHT	N9030B	MY57140488	2024/3/6	2025/3/5
Radio Communication Analyzer Anritsu	MT8821C	6201462755	2024/3/13	2025/3/12
Wideband Radio Communication Tester R&S	CMW500	152443	2023/8/10	2024/8/9
Software BV	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2024/5/7

4.6 Radiated Spurious Emissions below 1GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower Max-Full	MFT-151SS-0.5T	NA	NA	NA
Turn Table Max-Full	MF-7802BS	NA	NA	NA
Turn Table Controller Max-Full	MF-7802BS	MF780208674	NA	NA
EMI Test Receiver R&S	ESR3	102782	2022/12/12	2023/12/11
Signal & Spectrum Analyzer R&S	FSW43	101866	2023/1/10	2024/1/9
Loop Antenna TESEQ	HLA 6121	45745	2023/8/8	2024/8/7
Loop Antenna Electro-Metrics	EM-6879	269	2023/9/23	2024/9/22
Preamplifier EMCI	EMC001340	980201	2023/9/27	2024/9/26
RF Coaxial Cable EMCI	5D-NM-BM	140903+140902	2023/1/7	2024/1/6
Preamplifier EMCI	EMC330N	980782	2023/1/16	2024/1/15
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-1213	2023/10/13	2024/10/12
RF Coaxial Cable EMCI	EMCCFD400-NM-NM-500	201233	2023/1/16	2024/1/15
RF Coaxial Cable EMCI	EMCCFD400-NM-NM-3000	201235	2023/1/16	2024/1/15
RF Coaxial Cable EMCI	EMCCFD400-NM-NM-9000	201236(with PAD)	2023/1/16	2024/1/15

Notes:

1. The test was performed in WM - 966 chamber 8.
2. Tested Date: 2023/11/17 ~ 2023/11/30

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower Max-Full	MFT-151SS-0.5T	NA	NA	NA
Turn Table Max-Full	MF-7802BS	NA	NA	NA
Turn Table Controller Max-Full	MF-7802BS	MF780208674	NA	NA
EMI Test Receiver R&S	ESR3	102782	2023/12/7	2024/12/6
Signal & Spectrum Analyzer R&S	FSW43	101582	2023/4/13	2024/4/12
Loop Antenna TESEQ	HLA 6121	45745	2023/8/8	2024/8/7
Loop Antenna Electro-Metrics	EM-6879	269	2023/9/23	2024/9/22
Preamplifier EMCI	EMC001340	980201	2023/9/27	2024/9/26
RF Coaxial Cable EMCI	5D-NM-BM	140901	2023/9/27	2024/9/26
Preamplifier EMCI	EMC330N	980782	2024/1/15	2025/1/14
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-1213	2023/10/13	2024/10/12
RF Coaxial Cable EMCI	EMCCFD400-NM-NM-500	201233	2024/1/15	2025/1/14
RF Coaxial Cable EMCI	EMCCFD400-NM-NM-3000	201235	2024/1/15	2025/1/14
RF Coaxial Cable EMCI	EMCCFD400-NM-NM-9000	201236(with PAD)	2024/1/15	2025/1/14

Notes:

1. The test was performed in WM - 966 chamber 8.
2. Tested Date: 2024/3/5

4.7 Radiated Spurious Emissions above 1GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower Max-Full	MFT-151SS-0.5T	NA	NA	NA
Turn Table Max-Full	MF-7802BS	NA	NA	NA
Turn Table Controller Max-Full	MF-7802BS	MF780208674	NA	NA
EMI Test Receiver R&S	ESR3	102782	2022/12/12	2023/12/11
Signal & Spectrum Analyzer R&S	FSW43	101866	2023/1/10	2024/1/9
Loop Antenna TESEQ	HLA 6121	45745	2023/8/8	2024/8/7
Loop Antenna Electro-Metrics	EM-6879	269	2023/9/23	2024/9/22
Preamplifier EMCI	EMC001340	980201	2023/9/27	2024/9/26
RF Coaxial Cable EMCI	5D-NM-BM	140903+140902	2023/1/7	2024/1/6
Horn Antenna RFSPIN	DRH18-E	210103A18E	2023/11/12	2024/11/11
Preamplifier EMCI	EMC118A45SE	980808	2022/12/29	2023/12/28
RF Coaxial Cable EMCI	EMC104-SM-SM-1000	210102	2023/1/16	2024/1/15
RF Coaxial Cable EMCI	EMC104-SM-SM-3000	201231	2023/1/16	2024/1/15
RF Coaxial Cable EMCI	EMC104-SM-SM-9000	201243	2023/1/16	2024/1/15
Preamplifier EMCI	EMC184045SE	980788	2023/1/16	2024/1/15
Horn Antenna Schwarzbeck	BBHA 9170	9170-1049	2022/11/13	2023/11/12
RF Coaxial Cable EMCI	EMC101G-KM-KM-5000	201260	2023/1/16	2024/1/15
RF Coaxial Cable EMCI	EMC101G-KM-KM-3000	201257	2023/1/16	2024/1/15
RF Coaxial Cable EMCI	EMC101G-KM-KM-2000	201254	2023/1/16	2024/1/15

Notes:

1. The test was performed in WM - 966 chamber 8.
2. Tested Date: 2023/11/17 ~ 2023/11/30

4.8 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
3-channel DC power supply JIN YIH Technology	ODP3033	ODP30332128138	N/A	N/A
Digital Multimeter Fluke	87-III	70360742	2023/7/6	2024/7/5
Signal and spectrum analyzer R&S	FSV3044	101105	2023/2/22	2024/2/21
Software BV	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Temperature & Humidity Chamber TERCHY	HRM-120RF	931022	2022/12/27	2023/12/26
Radio Communication Analyzer Anritsu	MT8821C	6201462755	2023/3/3	2024/3/2

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2023/11/17 ~ 2023/11/30

5 Limits of Test Items

5.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

For Cat-M1 Band 2, Cat-M1 Band 25:

Mobile and portable stations are limited to 2 watts EIRP.

For Cat-M1 Band 4, Cat-M1 Band 66:

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.

For Cat-M1 Band 5, Cat-M1 Band 26 (Part 22):

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

For Cat-M1 Band 12, Cat-M1 Band 85:

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 Cat-M1 Band 13:

Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

For Cat-M1 Band 26 (Part 90):

The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw) ERP.

5.2 Modulation Characteristics

A curve or equivalent data which shows that the equipment will meet the modulation requirements of the rules under which the equipment is to be licensed.

5.3 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.

5.4 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.

5.5 Conducted Spurious Emissions

For Cat-M1 Band 2, Cat-M1 Band 5, Cat-M1 Band 25, Cat-M1 Band 26 (Part 22):

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 Cat-M1 Band 4:

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.

For Cat-M1 Band 12, Cat-M1 Band 85:

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 Cat-M1 Band 13:

According to FCC 47 CFR part 27.53(c)(2), for on any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) 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.
According to FCC 47 CFR part 27.53(c)(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.
For operations in the 775-788 MHz, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz (EIRP). The limit of emissions is equal to -40 dBm.

For Cat-M1 Band 26 (Part 90):

According to FCC 47 CFR part 90.691 shall be tested the emission masks. For any frequency removed from the EA licensee’s frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 $Log_{10}(f/6.1)$ decibels or 50 + 10 $Log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

For any frequency removed from the EA licensee’s frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 $Log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.
For §90.691(a), 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 Cat-M1 Band 66:

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.

5.6 Radiated Spurious Emissions below 1GHz

For Cat-M1 Band 2, Cat-M1 Band 5, Cat-M1 Band 25, Cat-M1 Band 26 (Part 22):

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 Cat-M1 Band 4:

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.

For Cat-M1 Band 12, Cat-M1 Band 85:

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 Cat-M1 Band 13:

According to FCC 47 CFR part 27.53(c)(2), for on any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB. The limit of emissions is equal to -13 dBm.
For operations in the 775-788 MHz, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz (EIRP). The limit of emissions is equal to -40 dBm.

For Cat-M1 Band 26 (Part 90):

For any frequency removed from the EA licensee’s frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 Log_{10}(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.
For §90.691(a), RBW = 100 kHz for offset grater than 37.5 kHz from channel edge is allowed.

For Cat-M1 Band 66:

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 Radiated Spurious Emissions above 1GHz

For Cat-M1 Band 2, Cat-M1 Band 5, Cat-M1 Band 25, Cat-M1 Band 26 (Part 22):

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 Cat-M1 Band 4:

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.

For Cat-M1 Band 12, Cat-M1 Band 85:

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 Cat-M1 Band 13:

According to FCC 47 CFR part 27.53(c)(2), for on any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB. The limit of emissions is equal to -13 dBm.
For operations in the 775-788 MHz, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz (EIRP). The limit of emissions is equal to -40 dBm.

For Cat-M1 Band 26 (Part 90):

For any frequency removed from the EA licensee’s frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 Log_{10}(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.
For §90.691(a), RBW = 100 kHz for offset grater than 37.5 kHz from channel edge is allowed.

For Cat-M1 Band 66:

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.

5.8 Frequency Stability

For Cat-M1 Band 5, Cat-M1 Band 26 (Part 90):

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

For Cat-M1 Band 2, Cat-M1 Band 4, Cat-M1 Band 12, Cat-M1 Band 13, Cat-M1 Band 25, Cat-M1 Band 26 (Part 22), Cat-M1 Band 66, Cat-M1 Band 85:

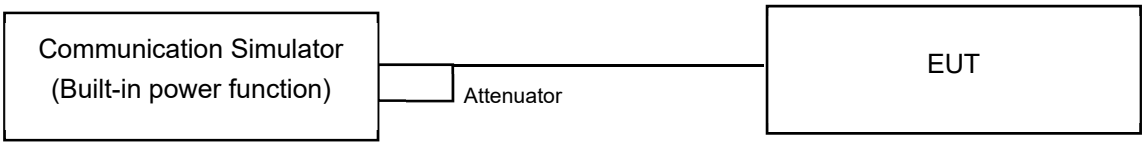
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation (authorized frequency block).

6 Test Arrangements

6.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

6.1.1 Test Setup

Conducted Power Measurement:



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.

Maximum EIRP / ERP

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

$EIRP = P_{Meas} + G_T$

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

where

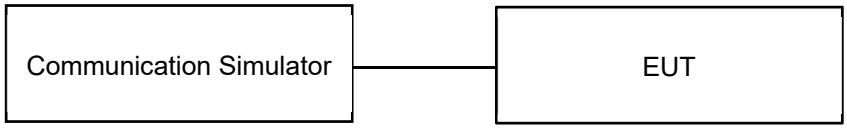
ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas}, e.g., dBm or dBW)

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

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

6.2 Modulation Characteristics

6.2.1 Test Setup

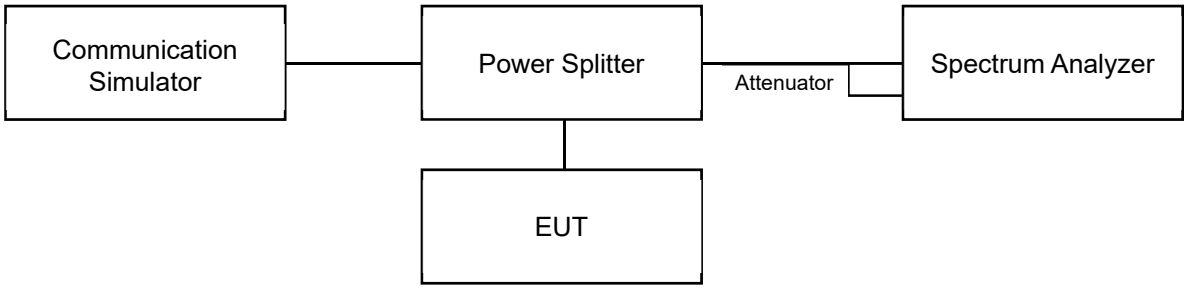


6.2.2 Test Procedure

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.

6.3 Peak to Average Ratio

6.3.1 Test Setup

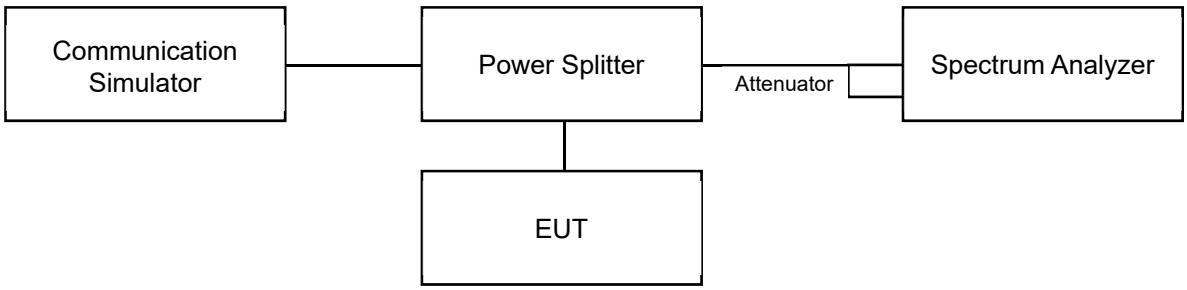


6.3.2 Test Procedure

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

6.4 Bandwidth

6.4.1 Test Setup



6.4.2 Test Procedure

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

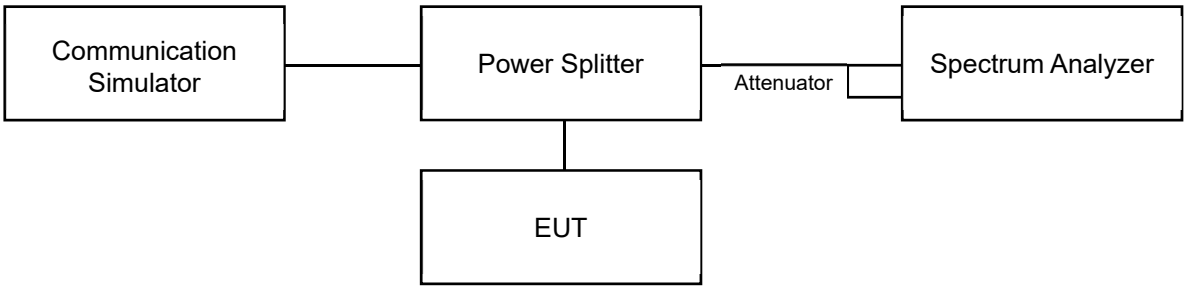
a. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.
b. The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and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

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

a. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.
b. The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set ≥ 3 × RBW.
c. Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
d. The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target "−X dB" requirement, i.e., if the requirement calls for measuring the −26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.
e. Set spectrum analyzer detection mode to peak, and the trace mode to max hold.
f. Determine the 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).

6.5 Conducted Spurious Emissions

6.5.1 Test Setup



6.5.2 Test Procedure

a. Measurement refer to ANSI C63.26 section 5.7.
b. All measurements were done at 3 channels: low, middle and high operational frequency range.
c. Measuring frequency range is from 9 kHz up to the tenth harmonic of the hightest fundamental frequency or to 40 GHz, whichever is lower. 20 dB attenuation pad is connected with spectrum.
d. The fundamental frequency above 1 GHz, the spectrum set RBW = 1 MHz, VBW = 3 MHz, Detector = Average.
e. The fundamental frequency below 1 GHz, the spectrum set RBW ≥ 100 kHz, VBW ≥ 3 x RBW, Detector = Average.
f. Measuring frequency band edge, narrow RBW (no less than 1% of the OBW) is used for conducted emission measurement.

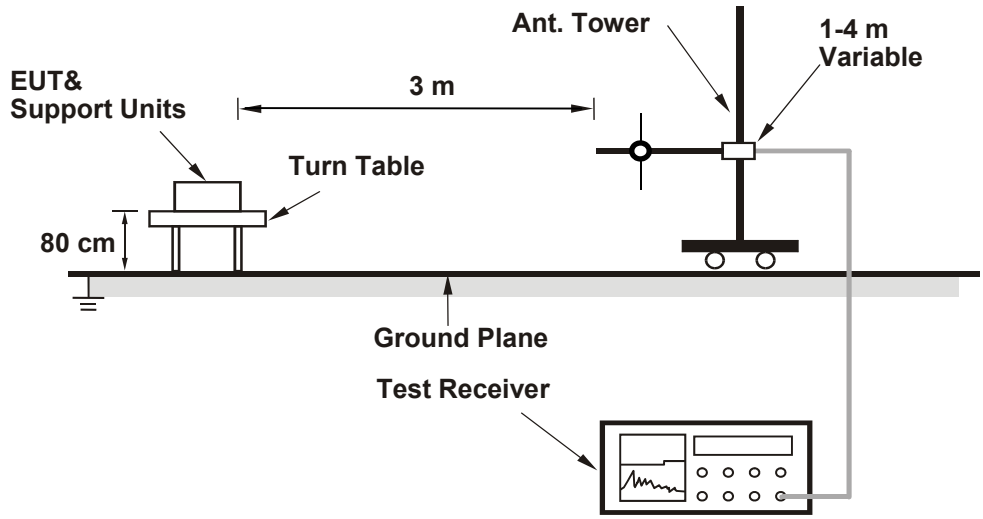
For Emission Mask:

a. Measurement refer to ANSI C63.26 section 5.7.
b. All measurements were done at 2 channels: low and high operational frequency range.
c. 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.
d. Record the maximum power value test plot.

6.6 Radiated Spurious Emissions below 1GHz

6.6.1 Test Setup

For radiated emission 30 MHz to 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.

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 C63.26 section 5.5 and 5.2.7

e. EIRP (dBm) = E (dBμV/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m.

f. ERP (dBm) = E (dBμV/m) + 20log(D) - 104.8 - 2.15; where D is the measurement distance (in the far field region) in m.

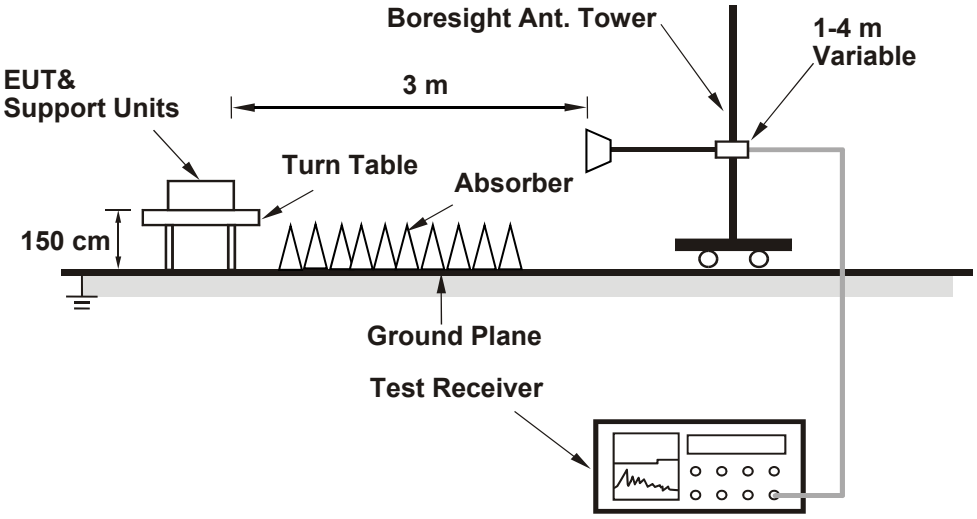
Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz.
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.

6.7 Radiated Spurious Emissions above 1GHz

6.7.1 Test Setup

For radiated emission above 1 GHz



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

6.7.2 Test Procedure

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

a. 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.

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 C63.26 section 5.5 and 5.2.7

e. EIRP (dBm) = E (dBμV/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m.

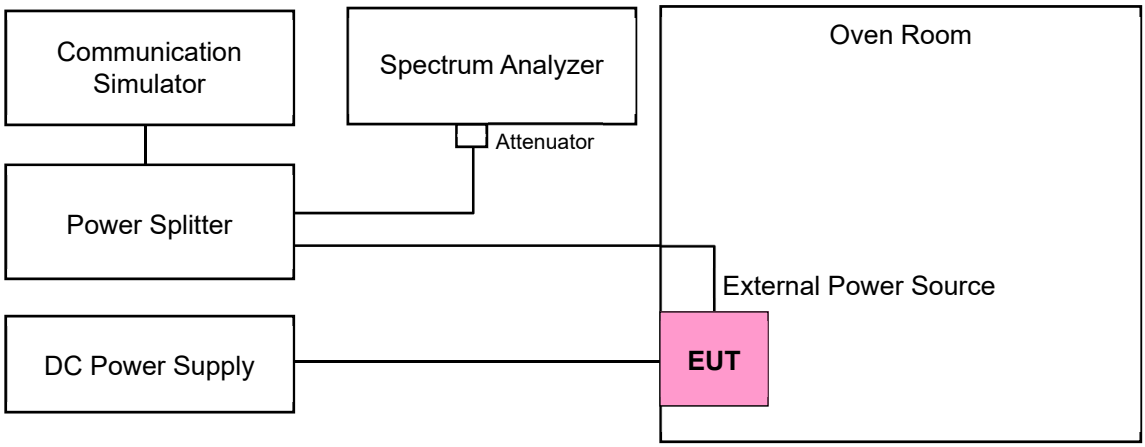
f. ERP (dBm) = E (dBμV/m) + 20log(D) - 104.8 - 2.15; where D is the measurement distance (in the far field region) in m.

Note:

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

6.8 Frequency Stability

6.8.1 Test Setup



6.8.2 Test Procedure

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

a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.

c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

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

7 Test Results of Test Item

7.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

Input Power:	7.2 Vdc	Environmental Conditions:	22°C, 75% RH	Tested By:	Willy Cheng

7.1.1 Cat-M1 Band 2

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18700	18900	19100
		Frequency (MHz)		1860	1880	1900
20M	QPSK	1	0	22.69	22.99	22.79
		1	5	22.52	22.67	22.58
		6	0	22.69	22.90	22.90
20M	16QAM	1	0	22.60	22.67	22.66
		1	5	22.27	22.46	22.49
		6	0	21.80	21.86	21.98
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	22.82	22.78	22.66
		1	5	22.58	22.67	22.44
		6	0	22.95	22.91	22.82
15M	16QAM	1	0	22.44	22.52	22.61
		1	5	22.32	22.29	22.22
		6	0	21.88	21.82	21.80
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18650	18900	19150
		Frequency (MHz)		1855	1880	1905
10M	QPSK	1	0	22.70	22.82	22.62
		1	5	22.56	22.55	22.48
		6	0	21.93	21.98	21.86
10M	16QAM	1	0	22.61	22.54	22.57
		1	5	22.26	22.37	22.29
		6	0	21.98	22.02	21.95
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	22.70	22.71	22.65
		1	5	22.66	22.56	22.57
		6	0	21.97	21.94	22.00
5M	16QAM	1	0	22.48	22.50	22.45
		1	5	22.38	22.42	22.42
		6	0	21.98	21.96	22.02

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	22.83	22.91	22.93
		1	5	22.81	22.92	22.85
		6	0	20.83	20.90	20.94
3M	16QAM	1	0	21.96	22.10	22.08
		1	5	21.81	21.98	21.85
		6	0	19.86	19.92	20.07
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18607	18900	19193
		Frequency (MHz)		1850.7	1880	1909.3
1.4M	QPSK	1	0	22.94	22.95	22.92
		1	5	22.80	22.74	22.76
		6	0	20.69	20.91	20.82
1.4M	16QAM	1	0	21.90	21.89	22.01
		1	5	21.77	21.77	21.78
		6	0	19.93	20.04	19.98

EIRP Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18700	18900	19100
		Frequency (MHz)		1860	1880	1900
20M	QPSK	1	0	26.20	26.50	26.30
		1	5	26.03	26.18	26.09
		6	0	26.20	26.41	26.41
20M	16QAM	1	0	26.11	26.18	26.17
		1	5	25.78	25.97	26.00
		6	0	25.31	25.37	25.49
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	26.33	26.29	26.17
		1	5	26.09	26.18	25.95
		6	0	26.46	26.42	26.33
15M	16QAM	1	0	25.95	26.03	26.12
		1	5	25.83	25.80	25.73
		6	0	25.39	25.33	25.31
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18650	18900	19150
		Frequency (MHz)		1855	1880	1905
10M	QPSK	1	0	26.21	26.33	26.13
		1	5	26.07	26.06	25.99
		6	0	25.44	25.49	25.37
10M	16QAM	1	0	26.12	26.05	26.08
		1	5	25.77	25.88	25.80
		6	0	25.49	25.53	25.46
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	26.21	26.22	26.16
		1	5	26.17	26.07	26.08
		6	0	25.48	25.45	25.51
5M	16QAM	1	0	25.99	26.01	25.96
		1	5	25.89	25.93	25.93
		6	0	25.49	25.47	25.53

*EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

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	26.34	26.42	26.44
		1	5	26.32	26.43	26.36
		6	0	24.34	24.41	24.45
3M	16QAM	1	0	25.47	25.61	25.59
		1	5	25.32	25.49	25.36
		6	0	23.37	23.43	23.58
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	26.45	26.46	26.43
		1	5	26.31	26.25	26.27
		6	0	24.20	24.42	24.33
1.4M	16QAM	1	0	25.41	25.40	25.52
		1	5	25.28	25.28	25.29
		6	0	23.44	23.55	23.49

*EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

7.1.2 Cat-M1 Band 4

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20050	20175	20300
		Frequency (MHz)		1720	1732.5	1745
20M	QPSK	1	0	22.55	22.51	22.65
		1	5	21.93	22.07	21.99
		6	0	22.28	22.59	22.30
20M	16QAM	1	0	22.21	22.47	22.28
		1	5	22.04	22.17	22.15
		6	0	22.42	22.55	22.40
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20025	20175	20325
		Frequency (MHz)		1717.5	1732.5	1747.5
15M	QPSK	1	0	22.14	22.60	22.33
		1	5	22.01	22.15	22.10
		6	0	22.41	22.52	22.50
15M	16QAM	1	0	22.12	22.33	22.25
		1	5	22.05	22.21	22.14
		6	0	22.43	22.58	22.52
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20000	20175	20350
		Frequency (MHz)		1715	1732.5	1750
10M	QPSK	1	0	22.44	22.27	22.48
		1	5	22.42	22.08	22.09
		6	0	21.51	21.69	21.63
10M	16QAM	1	0	22.19	22.45	22.20
		1	5	22.03	22.12	21.99
		6	0	21.10	21.77	21.54
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19975	20175	20375
		Frequency (MHz)		1712.5	1732.5	1752.5
5M	QPSK	1	0	22.31	22.37	22.58
		1	5	22.21	22.18	22.53
		6	0	21.58	21.50	21.45
5M	16QAM	1	0	22.28	22.29	22.01
		1	5	22.20	22.22	21.95
		6	0	21.60	21.67	20.99

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19965	20175	20385
		Frequency (MHz)		1711.5	1732.5	1753.5
3M	QPSK	1	0	22.52	22.58	22.52
		1	5	22.30	22.50	22.40
		6	0	20.28	20.52	20.31
3M	16QAM	1	0	21.81	21.85	21.71
		1	5	21.67	21.66	21.50
		6	0	19.61	19.62	19.85
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19957	20175	20393
		Frequency (MHz)		1710.7	1732.5	1754.3
1.4M	QPSK	1	0	22.40	22.60	22.37
		1	5	22.27	22.44	22.30
		6	0	20.43	20.56	20.32
1.4M	16QAM	1	0	21.71	21.74	21.64
		1	5	21.45	21.51	21.37
		6	0	19.88	18.98	18.80

EIRP Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20050	20175	20300
		Frequency (MHz)		1720	1732.5	1745
20M	QPSK	1	0	25.82	25.78	25.92
		1	5	25.20	25.34	25.26
		6	0	25.55	25.86	25.57
20M	16QAM	1	0	25.48	25.74	25.55
		1	5	25.31	25.44	25.42
		6	0	25.69	25.82	25.67
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20025	20175	20325
		Frequency (MHz)		1717.5	1732.5	1747.5
15M	QPSK	1	0	25.41	25.87	25.60
		1	5	25.28	25.42	25.37
		6	0	25.68	25.79	25.77
15M	16QAM	1	0	25.39	25.60	25.52
		1	5	25.32	25.48	25.41
		6	0	25.70	25.85	25.79
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20000	20175	20350
		Frequency (MHz)		1715	1732.5	1750
10M	QPSK	1	0	25.71	25.54	25.75
		1	5	25.69	25.35	25.36
		6	0	24.78	24.96	24.90
10M	16QAM	1	0	25.46	25.72	25.47
		1	5	25.30	25.39	25.26
		6	0	24.37	25.04	24.81
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19975	20175	20375
		Frequency (MHz)		1712.5	1732.5	1752.5
5M	QPSK	1	0	25.58	25.64	25.85
		1	5	25.48	25.45	25.80
		6	0	24.85	24.77	24.72
5M	16QAM	1	0	25.55	25.56	25.28
		1	5	25.47	25.49	25.22
		6	0	24.87	24.94	24.26

*EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19965	20175	20385
		Frequency (MHz)		1711.5	1732.5	1753.5
3M	QPSK	1	0	25.79	25.85	25.79
		1	5	25.57	25.77	25.67
		6	0	23.55	23.79	23.58
3M	16QAM	1	0	25.08	25.12	24.98
		1	5	24.94	24.93	24.77
		6	0	22.88	22.89	23.12
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19957	20175	20393
		Frequency (MHz)		1710.7	1732.5	1754.3
1.4M	QPSK	1	0	25.67	25.87	25.64
		1	5	25.54	25.71	25.57
		6	0	23.70	23.83	23.59
1.4M	16QAM	1	0	24.98	25.01	24.91
		1	5	24.72	24.78	24.64
		6	0	23.15	22.25	22.07

*EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

7.1.3 Cat-M1 Band 5

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20450	20525	20600
		Frequency (MHz)		829	836.5	844
10M	QPSK	1	0	23.22	22.96	22.75
		1	5	22.98	22.61	22.55
		6	0	22.25	21.94	21.81
10M	16QAM	1	0	22.93	22.72	22.54
		1	5	22.64	22.40	22.43
		6	0	21.50	21.01	20.83
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20425	20525	20625
		Frequency (MHz)		826.5	836.5	846.5
5M	QPSK	1	0	23.15	23.00	22.83
		1	5	23.09	22.92	22.91
		6	0	22.23	21.82	22.00
5M	16QAM	1	0	22.98	22.44	22.68
		1	5	22.90	22.42	22.64
		6	0	22.04	21.23	21.04
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20415	20525	20635
		Frequency (MHz)		825.5	836.5	847.5
3M	QPSK	1	0	23.06	22.72	23.11
		1	5	22.97	22.54	23.10
		6	0	21.20	20.70	21.12
3M	16QAM	1	0	22.26	21.89	22.02
		1	5	22.10	21.72	22.01
		6	0	20.15	19.84	20.20
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20407	20525	20643
		Frequency (MHz)		824.7	836.5	848.3
1.4M	QPSK	1	0	23.17	22.69	22.99
		1	5	23.08	22.51	22.99
		6	0	21.29	20.71	21.10
1.4M	16QAM	1	0	22.10	21.58	21.80
		1	5	22.03	21.48	22.68
		6	0	20.12	19.60	20.34

ERP Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20450	20525	20600
		Frequency (MHz)		829	836.5	844
10M	QPSK	1	0	23.01	22.75	22.54
		1	5	22.77	22.40	22.34
		6	0	22.04	21.73	21.60
10M	16QAM	1	0	22.72	22.51	22.33
		1	5	22.43	22.19	22.22
		6	0	21.29	20.80	20.62
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20425	20525	20625
		Frequency (MHz)		826.5	836.5	846.5
5M	QPSK	1	0	22.94	22.79	22.62
		1	5	22.88	22.71	22.70
		6	0	22.02	21.61	21.79
5M	16QAM	1	0	22.77	22.23	22.47
		1	5	22.69	22.21	22.43
		6	0	21.83	21.02	20.83
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20415	20525	20635
		Frequency (MHz)		825.5	836.5	847.5
3M	QPSK	1	0	22.85	22.51	22.90
		1	5	22.76	22.33	22.89
		6	0	20.99	20.49	20.91
3M	16QAM	1	0	22.05	21.68	21.81
		1	5	21.89	21.51	21.80
		6	0	19.94	19.63	19.99
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20407	20525	20643
		Frequency (MHz)		824.7	836.5	848.3
1.4M	QPSK	1	0	22.96	22.48	22.78
		1	5	22.87	22.30	22.78
		6	0	21.08	20.50	20.89
1.4M	16QAM	1	0	21.89	21.37	21.59
		1	5	21.82	21.27	22.47
		6	0	19.91	19.39	20.13

*ERP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi) - 2.15

7.1.4 Cat-M1 Band 12

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23060	23095	23130
		Frequency (MHz)		704	707.5	711
10M	QPSK	1	0	22.65	22.85	22.84
		1	5	22.42	22.56	22.67
		6	0	21.79	21.78	21.95
10M	16QAM	1	0	22.39	22.45	22.56
		1	5	22.17	22.35	22.50
		6	0	21.53	21.49	21.69
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23035	23095	23155
		Frequency (MHz)		701.5	707.5	713.5
5M	QPSK	1	0	22.60	22.67	22.70
		1	5	22.45	22.74	22.52
		6	0	21.70	21.96	21.81
5M	16QAM	1	0	22.21	22.40	22.53
		1	5	22.15	22.56	22.28
		6	0	21.33	21.64	21.58
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23025	23095	23165
		Frequency (MHz)		700.5	707.5	714.5
3M	QPSK	1	0	22.71	22.80	22.85
		1	5	22.62	22.75	22.66
		6	0	20.73	20.83	20.65
3M	16QAM	1	0	22.34	22.37	22.22
		1	5	21.76	21.91	22.26
		6	0	19.80	19.90	20.05
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23017	23095	23173
		Frequency (MHz)		699.7	707.5	715.3
1.4M	QPSK	1	0	22.57	22.74	22.59
		1	5	22.52	22.60	22.49
		6	0	20.65	20.76	20.61
1.4M	16QAM	1	0	22.12	22.21	22.10
		1	5	22.08	22.19	21.96
		6	0	20.18	20.42	20.25

ERP Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23060	23095	23130
		Frequency (MHz)		704	707.5	711
10M	QPSK	1	0	20.17	20.37	20.36
		1	5	19.94	20.08	20.19
		6	0	19.31	19.30	19.47
10M	16QAM	1	0	19.91	19.97	20.08
		1	5	19.69	19.87	20.02
		6	0	19.05	19.01	19.21
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23035	23095	23155
		Frequency (MHz)		701.5	707.5	713.5
5M	QPSK	1	0	20.12	20.19	20.22
		1	5	19.97	20.26	20.04
		6	0	19.22	19.48	19.33
5M	16QAM	1	0	19.73	19.92	20.05
		1	5	19.67	20.08	19.80
		6	0	18.85	19.16	19.10
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23025	23095	23165
		Frequency (MHz)		700.5	707.5	714.5
3M	QPSK	1	0	20.23	20.32	20.37
		1	5	20.14	20.27	20.18
		6	0	18.25	18.35	18.17
3M	16QAM	1	0	19.86	19.89	19.74
		1	5	19.28	19.43	19.78
		6	0	17.32	17.42	17.57
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23017	23095	23173
		Frequency (MHz)		699.7	707.5	715.3
1.4M	QPSK	1	0	20.09	20.26	20.11
		1	5	20.04	20.12	20.01
		6	0	18.17	18.28	18.13
1.4M	16QAM	1	0	19.64	19.73	19.62
		1	5	19.60	19.71	19.48
		6	0	17.70	17.94	17.77

*ERP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi) - 2.15

7.1.5 Cat-M1 Band 13

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Mid		
		Channel		23230		
		Frequency (MHz)		782		
10M	QPSK	1	0	23.06		
		1	5	22.95		
		6	0	22.17		
10M	16QAM	1	0	22.98		
		1	5	22.89		
		6	0	22.05		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23205	23230	23255
		Frequency (MHz)		779.5	782	784.5
5M	QPSK	1	0	22.89	22.91	22.95
		1	5	22.93	22.87	22.79
		6	0	22.08	22.16	22.22
5M	16QAM	1	0	22.88	22.88	22.91
		1	5	22.93	22.87	22.70
		6	0	22.02	22.05	22.02

ERP Power (dBm)

BW	MCS Index	RB Size	RB Offset	Mid		
		Channel		23230		
		Frequency (MHz)		782		
10M	QPSK	1	0	21.60		
		1	5	21.49		
		6	0	20.71		
10M	16QAM	1	0	21.52		
		1	5	21.43		
		6	0	20.59		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23205	23230	23255
		Frequency (MHz)		779.5	782	784.5
5M	QPSK	1	0	21.43	21.45	21.49
		1	5	21.47	21.41	21.33
		6	0	20.62	20.70	20.76
5M	16QAM	1	0	21.42	21.42	21.45
		1	5	21.47	21.41	21.24
		6	0	20.56	20.59	20.56

*ERP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi) - 2.15

7.1.6 Cat-M1 Band 25

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26140	26365	26590
		Frequency (MHz)		1860	1882.5	1905
20M	QPSK	1	0	22.27	22.44	22.66
		1	5	21.93	22.03	22.09
		6	0	22.41	22.58	22.50
20M	16QAM	1	0	21.91	22.08	22.09
		1	5	21.69	21.90	22.05
		6	0	22.28	22.30	22.43
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26115	26365	26615
		Frequency (MHz)		1857.5	1882.5	1907.5
15M	QPSK	1	0	22.16	22.41	22.43
		1	5	22.04	22.36	22.07
		6	0	21.35	21.65	21.52
15M	16QAM	1	0	21.81	21.96	21.99
		1	5	21.61	21.91	21.81
		6	0	20.95	21.09	21.18
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26090	26365	26640
		Frequency (MHz)		1855	1882.5	1910
10M	QPSK	1	0	22.34	22.53	22.42
		1	5	22.02	22.37	22.27
		6	0	21.35	21.57	21.56
10M	16QAM	1	0	21.83	22.09	22.13
		1	5	21.58	21.83	21.88
		6	0	21.02	20.98	20.94
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26065	26365	26665
		Frequency (MHz)		1852.5	1882.5	1912.5
5M	QPSK	1	0	22.17	22.31	22.35
		1	5	22.00	22.09	22.08
		6	0	21.32	21.58	21.56
5M	16QAM	1	0	21.75	21.87	21.87
		1	5	21.68	21.92	21.92
		6	0	20.82	21.11	21.31

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26055	26365	26675
		Frequency (MHz)		1851.5	1882.5	1913.5
3M	QPSK	1	0	22.48	22.54	22.44
		1	5	22.37	22.50	22.53
		6	0	20.34	20.60	20.69
3M	16QAM	1	0	21.47	21.71	21.72
		1	5	21.36	21.58	21.66
		6	0	19.35	19.70	19.67
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26047	26365	26683
		Frequency (MHz)		1850.7	1882.5	1914.3
1.4M	QPSK	1	0	22.44	22.50	22.45
		1	5	22.26	22.44	22.40
		6	0	20.26	20.50	20.60
1.4M	16QAM	1	0	21.29	21.56	22.06
		1	5	21.11	21.41	21.52
		6	0	19.28	19.35	19.58

EIRP Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26140	26365	26590
		Frequency (MHz)		1860	1882.5	1905
20M	QPSK	1	0	25.78	25.95	26.17
		1	5	25.44	25.54	25.60
		6	0	25.92	26.09	26.01
20M	16QAM	1	0	25.42	25.59	25.60
		1	5	25.20	25.41	25.56
		6	0	25.79	25.81	25.94
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26115	26365	26615
		Frequency (MHz)		1857.5	1882.5	1907.5
15M	QPSK	1	0	25.67	25.92	25.94
		1	5	25.55	25.87	25.58
		6	0	24.86	25.16	25.03
15M	16QAM	1	0	25.32	25.47	25.50
		1	5	25.12	25.42	25.32
		6	0	24.46	24.60	24.69
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26090	26365	26640
		Frequency (MHz)		1855	1882.5	1910
10M	QPSK	1	0	25.85	26.04	25.93
		1	5	25.53	25.88	25.78
		6	0	24.86	25.08	25.07
10M	16QAM	1	0	25.34	25.60	25.64
		1	5	25.09	25.34	25.39
		6	0	24.53	24.49	24.45
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26065	26365	26665
		Frequency (MHz)		1852.5	1882.5	1912.5
5M	QPSK	1	0	25.68	25.82	25.86
		1	5	25.51	25.60	25.59
		6	0	24.83	25.09	25.07
5M	16QAM	1	0	25.26	25.38	25.38
		1	5	25.19	25.43	25.43
		6	0	24.33	24.62	24.82

*EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26055	26365	26675
		Frequency (MHz)		1851.5	1882.5	1913.5
3M	QPSK	1	0	25.99	26.05	25.95
		1	5	25.88	26.01	26.04
		6	0	23.85	24.11	24.20
3M	16QAM	1	0	24.98	25.22	25.23
		1	5	24.87	25.09	25.17
		6	0	22.86	23.21	23.18
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26047	26365	26683
		Frequency (MHz)		1850.7	1882.5	1914.3
1.4M	QPSK	1	0	25.95	26.01	25.96
		1	5	25.77	25.95	25.91
		6	0	23.77	24.01	24.11
1.4M	16QAM	1	0	24.80	25.07	25.57
		1	5	24.62	24.92	25.03
		6	0	22.79	22.86	23.09

*EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

7.1.7 Cat-M1 Band 26 (Part 22)

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26865	26915	26965
		Frequency (MHz)		831.5	836.5	841.5
15M	QPSK	1	0	22.73	22.93	22.80
		1	5	22.51	22.55	22.62
		6	0	22.73	22.89	22.85
15M	16QAM	1	0	22.32	22.59	22.64
		1	5	22.45	22.46	22.57
		6	0	22.73	22.70	22.46
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26840	26915	26990
		Frequency (MHz)		829	836.5	844
10M	QPSK	1	0	22.72	22.65	22.83
		1	5	22.41	22.41	22.66
		6	0	21.82	21.79	21.87
10M	16QAM	1	0	22.46	22.50	22.71
		1	5	22.40	22.34	22.56
		6	0	21.80	21.69	21.67
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26815	26915	27015
		Frequency (MHz)		826.5	836.5	846.5
5M	QPSK	1	0	22.51	22.68	22.80
		1	5	22.41	22.59	22.64
		6	0	21.72	21.92	21.95
5M	16QAM	1	0	22.45	22.45	22.64
		1	5	22.37	22.58	22.63
		6	0	21.44	21.83	21.93
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26805	26915	27025
		Frequency (MHz)		825.5	836.5	847.5
3M	QPSK	1	0	22.77	22.92	22.84
		1	5	22.70	22.73	22.80
		6	0	20.65	20.81	20.87
3M	16QAM	1	0	21.79	21.90	21.97
		1	5	21.81	21.74	21.97
		6	0	19.71	19.80	19.81
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26797	26915	27033
		Frequency (MHz)		824.7	836.5	848.3
1.4M	QPSK	1	0	22.68	22.78	22.84
		1	5	22.59	22.72	22.79
		6	0	20.86	20.82	20.89
1.4M	16QAM	1	0	21.63	21.52	21.81
		1	5	21.53	21.71	21.60
		6	0	19.66	19.56	19.76

ERP Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26865	26915	26965
		Frequency (MHz)		831.5	836.5	841.5
15M	QPSK	1	0	22.52	22.72	22.59
		1	5	22.30	22.34	22.41
		6	0	22.52	22.68	22.64
15M	16QAM	1	0	22.11	22.38	22.43
		1	5	22.24	22.25	22.36
		6	0	22.52	22.49	22.25
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26840	26915	26990
		Frequency (MHz)		829	836.5	844
10M	QPSK	1	0	22.51	22.44	22.62
		1	5	22.20	22.20	22.45
		6	0	21.61	21.58	21.66
10M	16QAM	1	0	22.25	22.29	22.50
		1	5	22.19	22.13	22.35
		6	0	21.59	21.48	21.46
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26815	26915	27015
		Frequency (MHz)		826.5	836.5	846.5
5M	QPSK	1	0	22.30	22.47	22.59
		1	5	22.20	22.38	22.43
		6	0	21.51	21.71	21.74
5M	16QAM	1	0	22.24	22.24	22.43
		1	5	22.16	22.37	22.42
		6	0	21.23	21.62	21.72
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26805	26915	27025
		Frequency (MHz)		825.5	836.5	847.5
3M	QPSK	1	0	22.56	22.71	22.63
		1	5	22.49	22.52	22.59
		6	0	20.44	20.60	20.66
3M	16QAM	1	0	21.58	21.69	21.76
		1	5	21.60	21.53	21.76
		6	0	19.50	19.59	19.60
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26797	26915	27033
		Frequency (MHz)		824.7	836.5	848.3
1.4M	QPSK	1	0	22.47	22.57	22.63
		1	5	22.38	22.51	22.58
		6	0	20.65	20.61	20.68
1.4M	16QAM	1	0	21.42	21.31	21.60
		1	5	21.32	21.50	21.39
		6	0	19.45	19.35	19.55

*ERP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi) - 2.15

7.1.8 Cat-M1 Band 26 (Part 90)

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Mid		
		Channel		26740		
		Frequency (MHz)		819		
10M	QPSK	1	0	22.81		
		1	5	22.16		
		6	0	21.60		
10M	16QAM	1	0	22.34		
		1	5	22.23		
		6	0	21.53		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26715	26740	26765
		Frequency (MHz)		816.5	819	821.5
5M	QPSK	1	0	22.30	22.29	22.41
		1	5	22.32	22.34	22.32
		6	0	21.61	21.68	21.75
5M	16QAM	1	0	22.31	22.16	22.24
		1	5	22.29	22.21	22.36
		6	0	21.73	21.38	21.62
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26705	26740	26775
		Frequency (MHz)		815.5	819	822.5
3M	QPSK	1	0	22.62	22.71	22.70
		1	5	22.53	22.63	22.63
		6	0	20.63	20.68	20.60
3M	16QAM	1	0	21.68	21.77	21.74
		1	5	21.72	21.70	21.65
		6	0	19.69	19.79	19.65
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26697	26740	26783
		Frequency (MHz)		814.7	819	823.3
1.4M	QPSK	1	0	22.15	22.61	22.62
		1	5	22.15	22.36	22.51
		6	0	20.59	20.53	20.75
1.4M	16QAM	1	0	21.48	21.66	21.66
		1	5	21.08	21.56	21.52
		6	0	19.63	19.73	19.70

ERP Power (dBm)

BW	MCS Index	RB Size	RB Offset	Mid		
		Channel		26740		
		Frequency (MHz)		819		
10M	QPSK	1	0	22.60		
		1	5	21.95		
		6	0	21.39		
10M	16QAM	1	0	22.13		
		1	5	22.02		
		6	0	21.32		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26715	26740	26765
		Frequency (MHz)		816.5	819	821.5
5M	QPSK	1	0	22.09	22.08	22.20
		1	5	22.11	22.13	22.11
		6	0	21.40	21.47	21.54
5M	16QAM	1	0	22.10	21.95	22.03
		1	5	22.08	22.00	22.15
		6	0	21.52	21.17	21.41
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26705	26740	26775
		Frequency (MHz)		815.5	819	822.5
3M	QPSK	1	0	22.41	22.50	22.49
		1	5	22.32	22.42	22.42
		6	0	20.42	20.47	20.39
3M	16QAM	1	0	21.47	21.56	21.53
		1	5	21.51	21.49	21.44
		6	0	19.48	19.58	19.44
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26697	26740	26783
		Frequency (MHz)		814.7	819	823.3
1.4M	QPSK	1	0	21.94	22.40	22.41
		1	5	21.94	22.15	22.30
		6	0	20.38	20.32	20.54
1.4M	16QAM	1	0	21.27	21.45	21.45
		1	5	20.87	21.35	21.31
		6	0	19.42	19.52	19.49

*ERP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi) - 2.15

7.1.9 Cat-M1 Band 66

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132072	132322	132572
		Frequency (MHz)		1720	1745	1770
20M	QPSK	1	0	23.33	23.19	22.91
		1	5	22.95	22.74	22.75
		6	0	23.16	23.14	22.91
20M	16QAM	1	0	23.31	23.11	23.26
		1	5	23.08	22.72	23.03
		6	0	23.29	23.28	23.02
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	23.12	23.30	23.32
		1	5	22.96	22.83	23.05
		6	0	23.11	23.32	23.14
15M	16QAM	1	0	23.14	23.03	22.98
		1	5	22.99	22.83	22.76
		6	0	23.20	23.16	22.88
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132022	132322	132622
		Frequency (MHz)		1715	1745	1775
10M	QPSK	1	0	23.13	23.00	22.95
		1	5	23.01	22.78	22.69
		6	0	22.31	22.13	21.87
10M	16QAM	1	0	23.04	23.00	22.96
		1	5	23.00	22.76	22.79
		6	0	22.43	22.18	21.97
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	23.12	23.07	22.80
		1	5	23.00	22.88	22.70
		6	0	22.31	22.11	21.95
5M	16QAM	1	0	22.80	22.76	23.07
		1	5	22.82	22.80	22.61
		6	0	22.16	22.02	21.85

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	23.29	23.17	22.97
		1	5	23.19	23.02	22.79
		6	0	21.45	21.20	20.95
3M	16QAM	1	0	22.71	22.52	21.99
		1	5	22.52	22.32	21.79
		6	0	20.59	20.29	19.77
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	23.27	23.21	22.95
		1	5	22.91	22.88	22.72
		6	0	21.34	21.08	21.06
1.4M	16QAM	1	0	22.64	22.45	21.96
		1	5	22.44	22.21	21.66
		6	0	20.63	20.25	20.03

EIRP Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132072	132322	132572
		Frequency (MHz)		1720	1745	1770
20M	QPSK	1	0	27.17	27.03	26.75
		1	5	26.79	26.58	26.59
		6	0	27.00	26.98	26.75
20M	16QAM	1	0	27.15	26.95	27.10
		1	5	26.92	26.56	26.87
		6	0	27.13	27.12	26.86
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	26.96	27.14	27.16
		1	5	26.80	26.67	26.89
		6	0	26.95	27.16	26.98
15M	16QAM	1	0	26.98	26.87	26.82
		1	5	26.83	26.67	26.60
		6	0	27.04	27.00	26.72
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132022	132322	132622
		Frequency (MHz)		1715	1745	1775
10M	QPSK	1	0	26.97	26.84	26.79
		1	5	26.85	26.62	26.53
		6	0	26.15	25.97	25.71
10M	16QAM	1	0	26.88	26.84	26.80
		1	5	26.84	26.60	26.63
		6	0	26.27	26.02	25.81
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	26.96	26.91	26.64
		1	5	26.84	26.72	26.54
		6	0	26.15	25.95	25.79
5M	16QAM	1	0	26.64	26.60	26.91
		1	5	26.66	26.64	26.45
		6	0	26.00	25.86	25.69

*EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

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	27.13	27.01	26.81
		1	5	27.03	26.86	26.63
		6	0	25.29	25.04	24.79
3M	16QAM	1	0	26.55	26.36	25.83
		1	5	26.36	26.16	25.63
		6	0	24.43	24.13	23.61
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	27.11	27.05	26.79
		1	5	26.75	26.72	26.56
		6	0	25.18	24.92	24.90
1.4M	16QAM	1	0	26.48	26.29	25.80
		1	5	26.28	26.05	25.50
		6	0	24.47	24.09	23.87

*EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

7.1.10 Cat-M1 Band 85

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		134052	134092	134132
		Frequency (MHz)		703	707	711
10M	QPSK	1	0	23.12	23.12	23.25
		1	5	22.90	22.95	23.05
		6	0	22.15	22.24	22.25
10M	16QAM	1	0	22.78	22.92	23.04
		1	5	22.61	22.69	22.91
		6	0	21.84	22.04	22.05
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		134027	134092	134157
		Frequency (MHz)		700.5	707	713.5
5M	QPSK	1	0	22.92	23.14	23.03
		1	5	22.76	23.08	22.89
		6	0	22.10	22.25	22.09
5M	16QAM	1	0	22.59	22.90	22.85
		1	5	22.74	22.94	22.84
		6	0	22.06	22.15	22.03

ERP Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		134052	134092	134132
		Frequency (MHz)		703	707	711
10M	QPSK	1	0	20.64	20.64	20.77
		1	5	20.42	20.47	20.57
		6	0	19.67	19.76	19.77
10M	16QAM	1	0	20.30	20.44	20.56
		1	5	20.13	20.21	20.43
		6	0	19.36	19.56	19.57
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		134027	134092	134157
		Frequency (MHz)		700.5	707	713.5
5M	QPSK	1	0	20.44	20.66	20.55
		1	5	20.28	20.60	20.41
		6	0	19.62	19.77	19.61
5M	16QAM	1	0	20.11	20.42	20.37
		1	5	20.26	20.46	20.36
		6	0	19.58	19.67	19.55

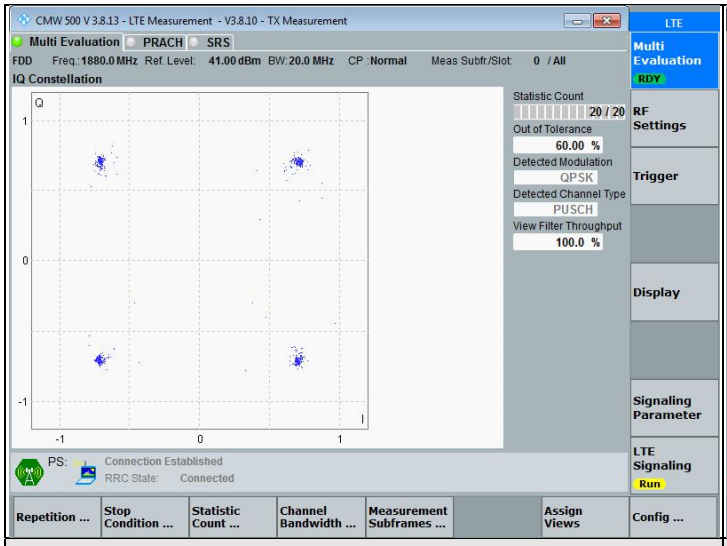
*ERP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi) - 2.15

7.2 Modulation Characteristics

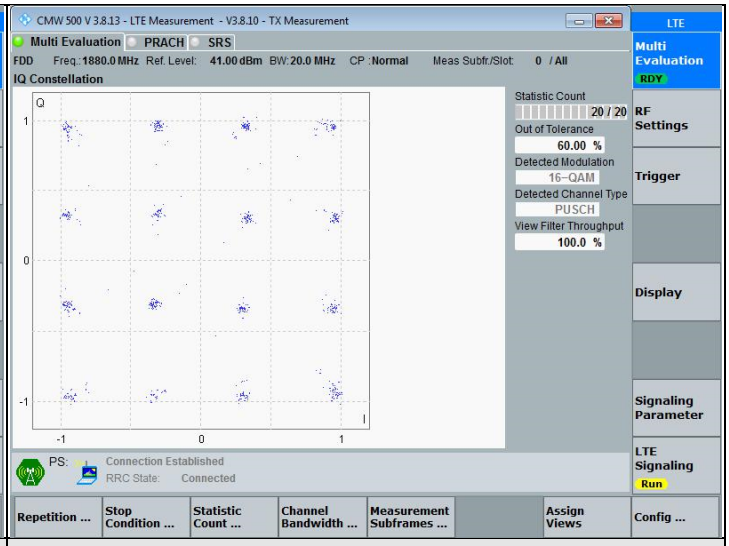
Input Power:	7.2 Vdc	Environmental Conditions:	22°C, 75% RH	Tested By:	Willy Cheng

7.2.1 Cat-M1 Band 2

Cat-M1 Band 2, Channel Bandwidth: 20 MHz



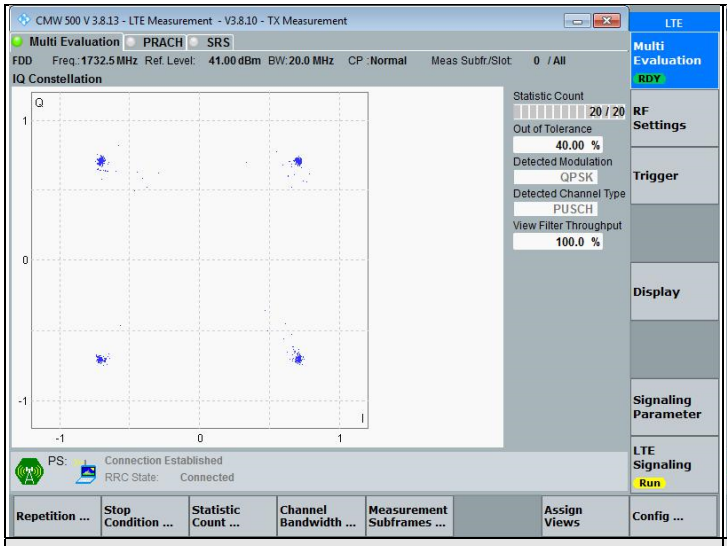
QPSK CH 18900 (1880 MHz)



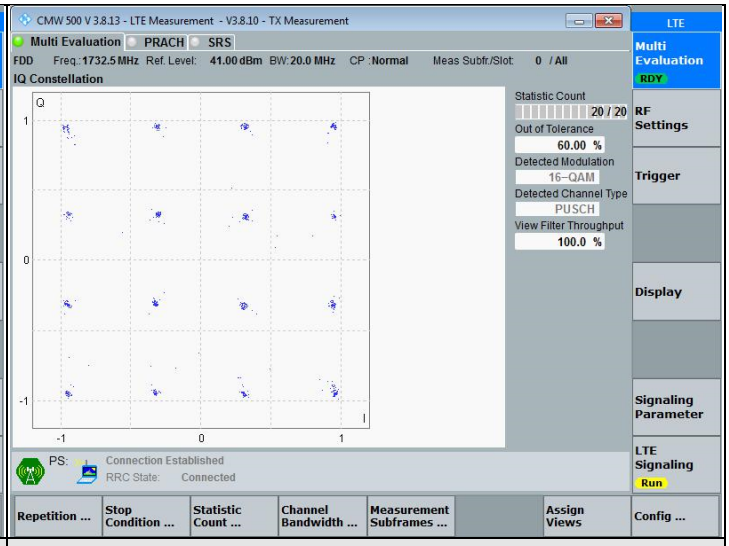
16QAM CH 18900 (1880 MHz)

7.2.2 Cat-M1 Band 4

Cat-M1 Band 4, Channel Bandwidth: 20 MHz



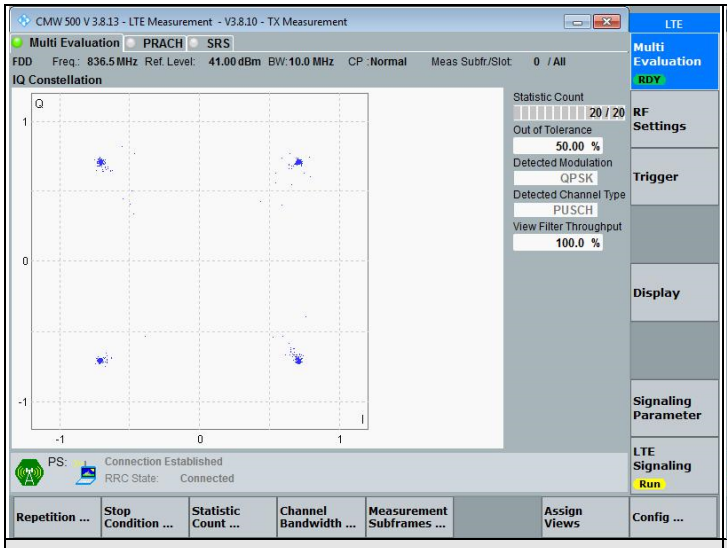
QPSK CH 20175 (1732.5 MHz)



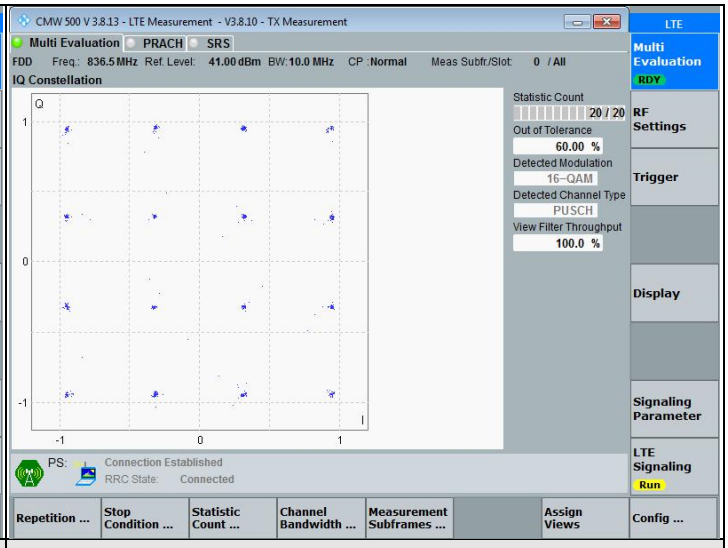
16QAM CH 20175 (1732.5 MHz)

7.2.3 Cat-M1 Band 5

Cat-M1 Band 5, Channel Bandwidth: 10 MHz



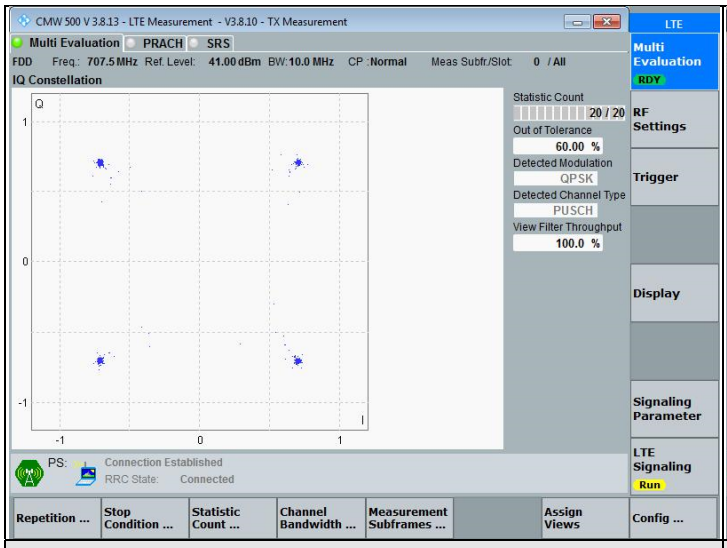
QPSK CH 20525 (836.5 MHz)



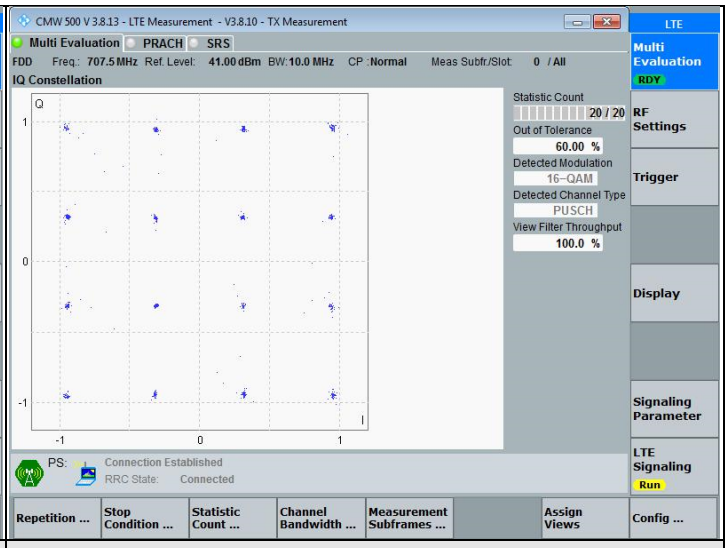
16QAM CH 20525 (836.5 MHz)

7.2.4 Cat-M1 Band 12

Cat-M1 Band 12, Channel Bandwidth: 10 MHz



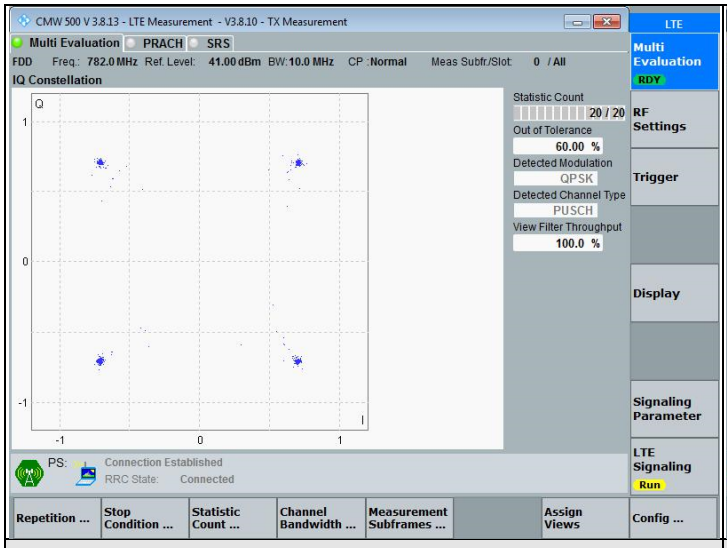
QPSK CH 23095 (707.5 MHz)



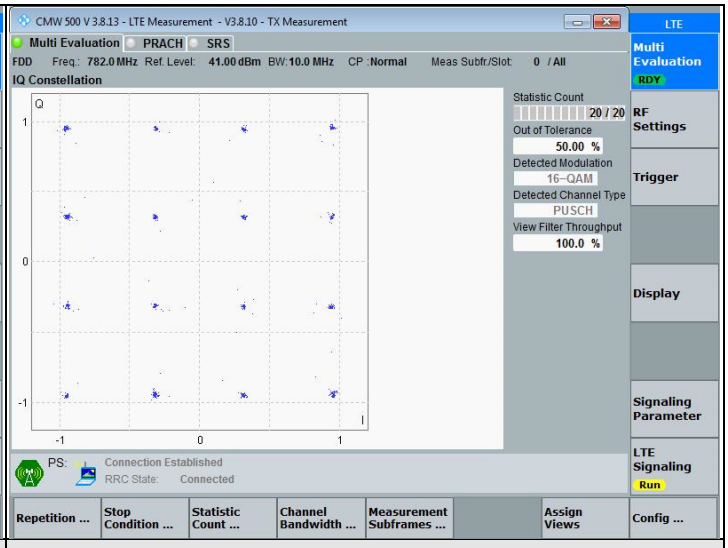
16QAM CH 23095 (707.5 MHz)

7.2.5 Cat-M1 Band 13

Cat-M1 Band 13, Channel Bandwidth: 10 MHz



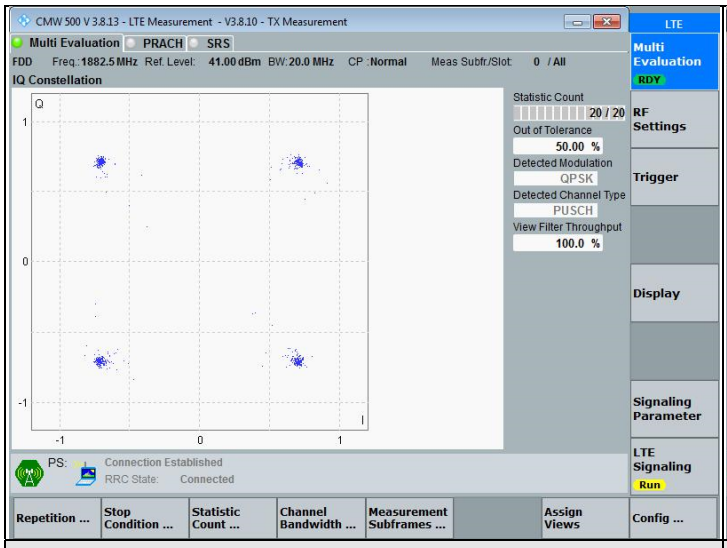
QPSK CH 23230 (782 MHz)



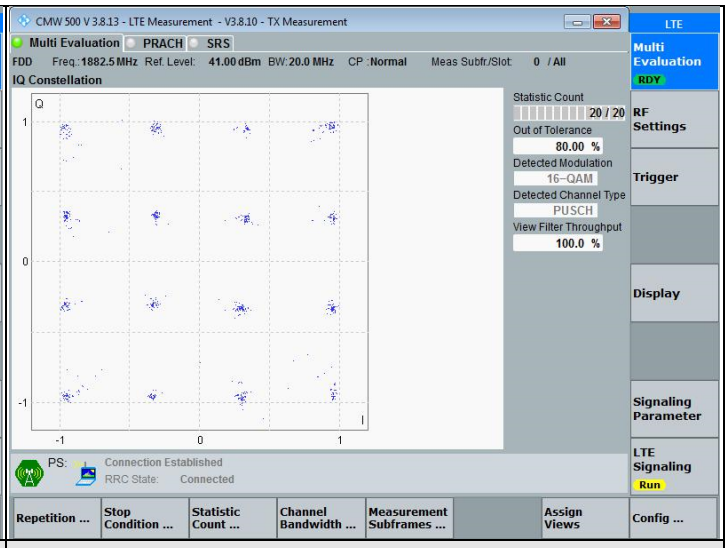
16QAM CH 23230 (782 MHz)

7.2.6 Cat-M1 Band 25

Cat-M1 Band 25, Channel Bandwidth: 20 MHz



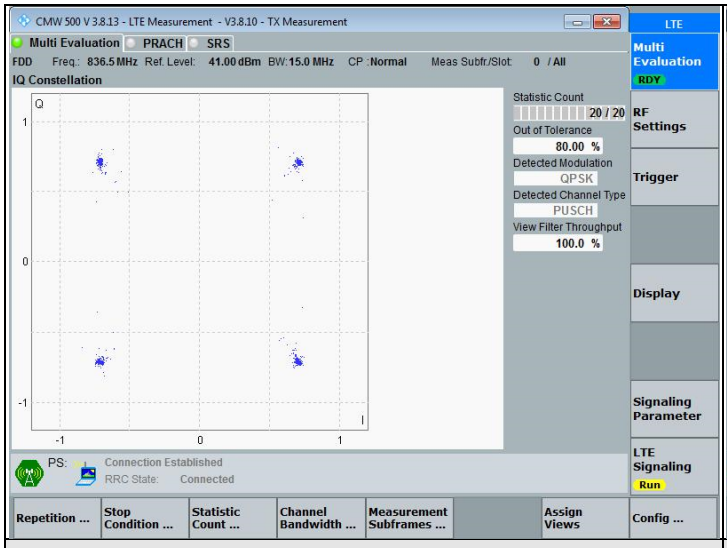
QPSK CH 26365 (1882.5 MHz)



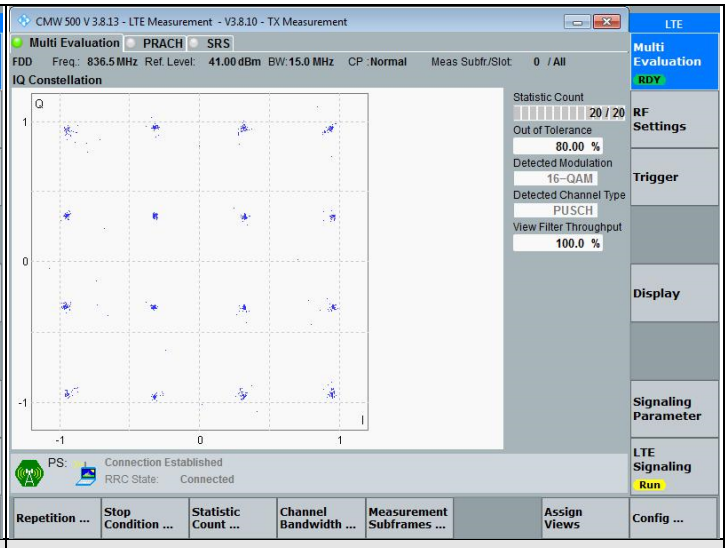
16QAM CH 26365 (1882.5 MHz)

7.2.7 Cat-M1 Band 26 (Part 22)

Cat-M1 Band 26, Channel Bandwidth: 15 MHz



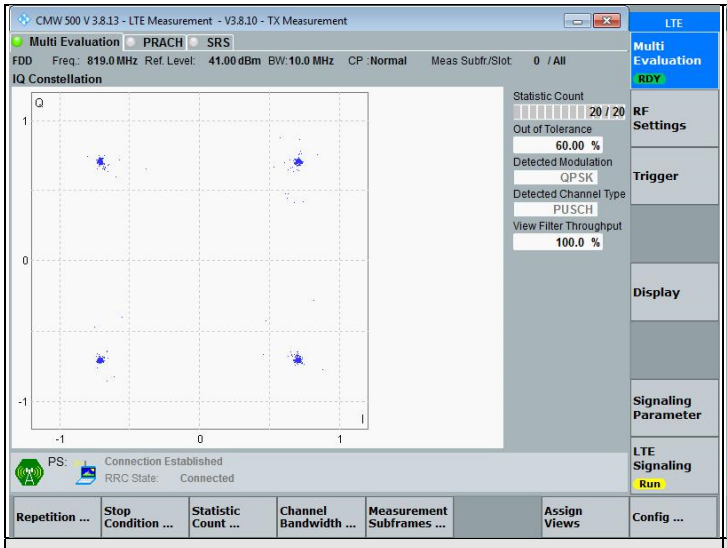
QPSK CH 26915 (836.5 MHz)



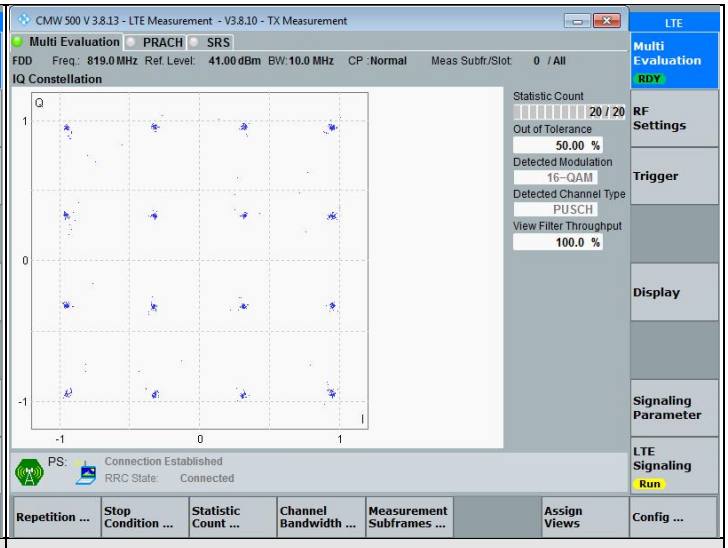
16QAM CH 26915 (836.5 MHz)

7.2.8 Cat-M1 Band 26 (Part 90)

Cat-M1 Band 26, Channel Bandwidth: 10 MHz



QPSK CH 26740 (819 MHz)



16QAM CH 26740 (819 MHz)