FCC TEST REPORT

Name of Sample:	**Mobile Cellular Phone**
Model of Sample:	**XT2407-2**
Applicant:	**Motorola Mobility LLC**
Issue Date:	**2024-06-04**

ADR TEST AND CERTIFICATION CENTER

Motorola Mobility LLC, a Lenovo Company

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Name of Client	Motorola Mobility LLC		
Address of Client	222 W, Merchandise Mart Plaza, Chicago IL 60654 USA		
Trademark	Motorola	**Type Name or ID**	FCC ID: IHDT56AS3
Applicant No.	RF177181	**Sample No.**	1#: NWRL280128 2#: NWRL280122
Delivering Date	2024-04-15	**Test Date**	2024-04-15 to 2024-06-04
Sample Illustration	None		
Standard	47 CFR Part 2; 47 CFR Part 22; 47 CFR Part 24; 47 CFR Part 27;		
Conclusion	Pass		
Remarks	N/A		

Editor: Wangzhenyu **Auditor:** Hexiaolin **Approver:** HuangshengLin

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Revision History

Report No.	Version	Description	Issued Date
TR-24ADRTCC7011	Rev.01	Initial issue of report	2024-05-21
TR-24ADRTCC7011	Rev.02	Add n2 another PA test data. Update n66 other PA test data	2024-06-04

Catalogue

1. Test Summary

1.1. 5G NR Band n5

Test Item	Rule No.	Requirements	Test Result	Verdict
Conducted Power	§2.1046	Report Only	Section 1 of Appendix B	Pass
Effective Radiated Power	§22.913(a)(5)	ERP < 7W		
Peak-Average Ratio	§22.913(d)	<13 dB	Section 2 of Appendix B	Pass
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B	Pass
Occupied Bandwidth	§2.1049	No limit	Section 4 of Appendix B	Pass
26dB Emission Bandwidth		No limit		
Conducted Band Edges	§2.1051 §22.917(a)	< -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	Section 5 of Appendix B	Pass
Conducted Spurious Emission	§2.1051 §22.917(a)	< -13 dBm/100 kHz, from 9 kHz to 10th harmonics but outside authorized operating frequency ranges	Section 6 of Appendix B	Pass
Frequency Stability	§2.1055 §22.355	< ±2.5ppm	Section 7 of Appendix B	Pass

1.2. 5G NR Band n2

Test Item	Rule No.	Requirements	Test Result	Verdict
Conducted Power	§2.1046	Report Only	Section 1 of Appendix B	Pass
Effective Isotropic Radiated Power	§24.232(c)	EIRP < 2W		
Peak-Average Ratio	§24.232(d)	<13 dB	Section 2 of Appendix B	Pass
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B	Pass
Occupied Bandwidth	§2.1049	No limit	Section 4 of Appendix B	Pass
26dB Emission Bandwidth		No limit		
Conducted Band Edges	§2.1051 §24.238(a)	< -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	Section 5 of Appendix B	Pass
Conducted Spurious Emission	§2.1051 §24.238(a)	< -13 dBm/MHz, from 9 kHz to 10th harmonics but outside authorized operating frequency ranges.	Section 6 of Appendix B	Pass
Frequency Stability	§24.235	< ±2.5 ppm	Section 7 of Appendix B	Pass

1.3. 5G NR Band n66

Test Item	Rule No.	Requirements	Test Result	Verdict
Conducted Power	§2.1046	Report Only	Section 1 of Appendix B	Pass
Effective Isotropic Radiated Power	§27.50(d)	EIRP < 1W		
Peak-Average Ratio	---	<13 dB	Section 2 of Appendix B	Pass
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B	Pass
Occupied Bandwidth	§2.1049	No limit	Section 4 of Appendix B	Pass
26dB Emission Bandwidth		No limit		
Conducted Band Edges	§2.1051 §27.53(h)	< -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	Section 5 of Appendix B	Pass
Conducted Spurious Emission	§2.1051 §27.53(h)	< -13 dBm/MHz, from 9 kHz to 10th harmonics but outside authorized operating frequency ranges	Section 6 of Appendix B	Pass
Frequency Stability	§27.54	Within authorized bands	Section 7 of Appendix B	Pass

1.4. 5G NR Band n7/n38/n41

Test Item	Rule No.	Requirements	Test Result	Verdict
Conducted Power	§2.1046	Report Only	Section 1 of Appendix B	Pass
Effective Isotropic Radiated Power	§27.50(h) (2)	EIRP < 2W		
Peak-Average Ratio	§27.50(a)	<13 dB	Section 2 of Appendix B	Pass
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B	Pass
Occupied Bandwidth	§2.1049	No limit	Section 4 of Appendix B	Pass
26dB Emission Bandwidth		No limit		
Conducted Band Edges	§2.1051 §27.53(m) (4)	For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5MHz.	Section 5 of Appendix B	Pass
Conducted Spurious Emission	§2.1051 §27.53(m) (4)	< -25 dBm/MHz for outside Band Edge Range	Section 6 of Appendix B	Pass
Frequency Stability	§27.54	Within authorized bands	Section 7 of Appendix B	Pass

1.5. 5G NR Band n78 (3450-3550)

Test Item	Rule No.	Requirements	Test Result	Verdict
Conducted Power	§2.1046	Report Only	Section 1 of Appendix B	Pass
Effective Isotropic Radiated Power	§27.50(k) (3)	EIRP < 1W		
Peak-Average Ratio	§27.50(k) (4)	<13 dB	Section 2 of Appendix B	Pass
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B	Pass
Occupied Bandwidth	§2.1049	No limit	Section 4 of Appendix B	Pass
26dB Emission Bandwidth		No limit		
Conducted Band Edges	§2.1051 §27.53(n) (2)	< -13 dBm/MHz	Section 5 of Appendix B	Pass
Conducted Spurious Emission	§2.1051 §27.53(n) (2)	< -13 dBm/MHz	Section 6 of Appendix B	Pass
Frequency Stability	§27.54	Within authorized bands	Section 7 of Appendix B	Pass

Remark:

1, Only 5G NR Bands conducted test performed and the data displayed in this report, the radiated spurious emission refer to the report (FG441212G).

2, The maximum E(I)RP is calculated from max output power and max antenna gain, only the max E(I)RP data displayed in this report, n5 for Antenna 0; n2/n7/n38/n41/n66 for Antenna 1; n78 for antenna 4.

3, 5G NR Bands support SA mode for n5/n7/n38/n66/n78 and NSA mode for n2/n7/n38/n41/n66/n78.

4, The test has been assessed on SA and NSA mode, but only the worst mode performed the whole conducted test items by referring to the max conducted power.

5, The ENDC combination could be referred to the product specification.

2. Maximum Effective Radiated (Isotropic) Power and Emission Designator

2.1. NR System

2.1.1. NR Band n2 (1850-1910)

5G NR SA (n2A)		Pi/2 BPSK / QPSK		16QAM/64QAM/256QAM	
Bandwidth	Frequency Range (MHz)	Maximum EIRP (W)	Emission Designator (99% OBW)	Maximum EIRP (W)	Emission Designator (99% OBW)
5MHz	1852.5-1907.5	0.170216	4M48G7D	0.158855	4M51W7D
10MHz	1855.0-1905.0	0.167880	9M29G7D	0.156675	9M29W7D
15MHz	1857.5-1902.5	0.171396	14M1G7D	0.159221	14M2W7D
20MHz	1860.0-1900.0	0.172584	18M9G7D	0.158855	19M0W7D

5G NR NSA (DC_5A_n2A)		Pi/2 BPSK / QPSK		16QAM/64QAM/256QAM	
Bandwidth	Frequency Range (MHz)	Maximum EIRP (W)	Emission Designator (99% OBW)	Maximum EIRP (W)	Emission Designator (99% OBW)
5MHz	1852.5-1907.5	0.182390	4M50G7D	0.158855	4M49W7D
10MHz	1855.0-1905.0	0.180302	9M29G7D	0.161065	9M31W7D
15MHz	1857.5-1902.5	0.185353	14M1G7D	0.165196	14M2W7D
20MHz	1860.0-1900.0	0.185780	18M9G7D	0.165577	19M0W7D

2.1.2. NR Band n5 (824-849)

5G NR SA (n5A)		Pi/2 BPSK / QPSK		16QAM/64QAM/256QAM	
Bandwidth	Frequency Range (MHz)	Maximum ERP (W)	Emission Designator (99% OBW)	Maximum ERP (W)	Emission Designator (99% OBW)
5MHz	826.5-846.5	0.031696	4M49G7D	0.031405	4M50W7D
10MHz	829.0-844.0	0.031333	9M27G7D	0.031405	9M29W7D
15MHz	831.5-841.5	0.032961	14M1G7D	0.031769	14M1W7D
20MHz	834.0-839.0	0.031989	18M9G7D	0.031696	18M9W7D

2.1.3. NR Band n7 (2500-2570)

5G NR SA (n7A)		Pi/2 BPSK / QPSK		16QAM/64QAM/256QAM	
Bandwidth	Frequency Range (MHz)	Maximum EIRP (W)	Emission Designator (99% OBW)	Maximum EIRP (W)	Emission Designator (99% OBW)
5MHz	2502.5-2567.5	0.123027	4M49G7D	0.104713	4M51W7D
10MHz	2505.0-2565.0	0.125603	9M29G7D	0.102329	9M31W7D
15MHz	2507.5-2562.5	0.127644	14M1G7D	0.107399	14M2W7D
20MHz	2510.0-2560.0	0.129122	18M9G7D	0.106414	19M0W7D
25MHz	2512.5-2557.5	0.128529	23M8G7D	0.106905	23M8W7D
30MHz	2515.0-2555.0	0.127938	28M5G7D	0.105196	28M7W7D
40MHz	2520.0-2550.0	0.128529	38M7G7D	0.106414	38M6W7D

5G NR NSA (DC_2A_n7A)		Pi/2 BPSK / QPSK		16QAM/64QAM/256QAM	
Bandwidth	Frequency Range (MHz)	Maximum EIRP (W)	Emission Designator (99% OBW)	Maximum EIRP (W)	Emission Designator (99% OBW)
5MHz	2502.5-2567.5	0.119950	4M50G7D	0.118304	4M49W7D
10MHz	2505.0-2565.0	0.120226	9M27G7D	0.119399	9M31W7D
15MHz	2507.5-2562.5	0.125026	14M2G7D	0.123880	14M2W7D
20MHz	2510.0-2560.0	0.124451	18M9G7D	0.124451	19M0W7D
25MHz	2512.5-2557.5	0.125314	23M7G7D	0.124738	23M8W7D
30MHz	2515.0-2555.0	0.125893	28M6G7D	0.122462	28M6W7D
40MHz	2520.0-2550.0	0.120226	38M7G7D	0.118577	38M7W7D

2.1.4. NR Band n38 (2570-2620)

5G NR NSA (DC_66A_n38A)		Pi/2 BPSK / QPSK		16QAM/64QAM/256QAM	
Bandwidth	Frequency Range (MHz)	Maximum EIRP (W)	Emission Designator (99% OBW)	Maximum EIRP (W)	Emission Designator (99% OBW)
10MHz	2575.0-2615.0	0.126765	8M61G7D	0.116681	8M59W7D
15MHz	2577.5-2612.5	0.132739	13M6G7D	0.118304	13M7W7D
20MHz	2580.0-2610.0	0.130617	18M2G7D	0.119124	18M2W7D
30MHz	2585.0-2605.0	0.135519	27M8G7D	0.121619	27M9W7D
40MHz	2590.0-2600.0	0.137404	37M8G7D	0.123310	37M9W7D

2.1.5. NR Band n41 (2496-2690)

5G NR NSA (DC_66A_n41A)		Pi/2 BPSK / QPSK		16QAM/64QAM/256QAM	
Bandwidth	Frequency Range (MHz)	Maximum EIRP (W)	Emission Designator (99% OBW)	Maximum EIRP (W)	Emission Designator (99% OBW)
20MHz	2506.02-2679.99	0.134276	18M2G7D	0.124451	18M2W7D
30MHz	2511.00-2674.98	0.136458	27M8G7D	0.125026	27M9W7D
40MHz	2516.01-2670.00	0.138995	37M9G7D	0.128825	37M9W7D
50MHz	2521.02-2664.99	0.137088	47M4G7D	0.125893	47M6W7D
60MHz	2526.00-2659.98	0.137404	57M9G7D	0.124165	57M8W7D
70MHz	2531.01-2655.00	0.135519	67M6G7D	0.122744	67M6W7D
80MHz	2536.02-2649.99	0.134896	77M5G7D	0.123880	77M5W7D
90MHz	2541.00-2644.98	0.137721	87M2G7D	0.128529	87M4W7D
100MHz	2546.01-2640.00	0.137404	97M3G7D	0.127938	97M3W7D

2.1.6. NR Band n66 (1710-1780)

5G NR NSA (DC_5A_n66A)		Pi/2 BPSK / QPSK		16QAM/64QAM/256QAM	
Bandwidth	Frequency Range (MHz)	Maximum EIRP (W)	Emission Designator (99% OBW)	Maximum EIRP (W)	Emission Designator (99% OBW)
5MHz	1712.5-1777.5	0.180302	4M51G7D	0.182810	4M50W7D
10MHz	1715.0-1775.0	0.182390	9M29G7D	0.187068	9M31W7D

15MHz	1717.5-1772.5	0.187068	14M2G7D	0.184502	14M2W7D
20MHz	1720.0-1770.0	0.186638	18M9G7D	0.183231	19M0W7D
30MHz	1725.0-1765.0	0.187068	28M6G7D	0.185353	28M6W7D
40MHz	1730.0-1760.0	0.185353	38M7G7D	0.184502	38M6W7D

5G NR NSA (DC_7A_n66A)		Pi/2 BPSK / QPSK		16QAM/64QAM/256QAM	
Bandwidth	Frequency Range (MHz)	Maximum EIRP (W)	Emission Designator (99% OBW)	Maximum EIRP (W)	Emission Designator (99% OBW)
5MHz	1712.5-1777.5	0.182390	4M50G7D	0.183654	4M51W7D
10MHz	1715.0-1775.0	0.184077	9M29G7D	0.188799	9M29W7D
15MHz	1717.5-1772.5	0.186209	14M2G7D	0.183654	14M2W7D
20MHz	1720.0-1770.0	0.186638	18M9G7D	0.184927	19M0W7D
30MHz	1725.0-1765.0	0.187499	28M6G7D	0.184927	28M6W7D
40MHz	1730.0-1760.0	0.185353	38M7G7D	0.184502	38M6W7D

2.1.7. NR Band n78 (3450-3550)

5G NR NSA (DC_2A_n78A)		Pi/2 BPSK / QPSK		16QAM/64QAM/256QAM	
Bandwidth	Frequency Range (MHz)	Maximum EIRP (W)	Emission Designator (99% OBW)	Maximum EIRP (W)	Emission Designator (99% OBW)
10MHz	3455.01-3544.98	0.187932	8M59G7D	0.181134	8M59W7D
15MHz	3457.50-3542.49	0.192309	13M6G7D	0.190985	13M6W7D
20MHz	3460.02-3540.00	0.185780	18M2G7D	0.183654	18M2W7D
30MHz	3465.00-3534.99	0.187499	27M8G7D	0.182810	27M9W7D
40MHz	3470.01-3529.98	0.190108	37M9G7D	0.190108	37M9W7D
50MHz	3475.02-3525.00	0.175792	47M4G7D	0.173780	47M5W7D
60MHz	3480.00-3519.99	0.175792	57M9G7D	0.172982	57M8W7D
70MHz	3485.01-3514.98	0.175388	67M4G7D	0.171002	67M6W7D
80MHz	3490.02-3510.00	0.177828	77M4G7D	0.175792	77M5W7D
90MHz	3495.00-3504.99	0.177828	87M4G7D	0.169044	87M4W7D
100MHz	3500.01	0.169044	97M3G7D	0.162930	97M3W7D

3. General Information

3.1. General Description of EUT

EUT Description:	Mobile Cellular Phone
Brand Name:	Motorola
Model Name:	XT2407-2
FCC ID:	IHDT56AS3
IMEI Code:	1#: 358858730018479/358858730018487 (Conducted); 2#: 358858730018453/358858730018461 (Conducted);
Hardware Version:	DVT2
Software Version:	U3UW34.38
NR Modulation:	DFT-s-OFDM: ☒Pi/2BPSK; ☒ QPSK; ☒ 16QAM; ☒ 64QAM; ☒ 256QAM; CP-OFDM: ☒ QPSK; ☒ 16QAM; ☒ 64QAM; ☒ 256QAM;
Sample Type:	☒ Portable Device, ☐Module
Antenna Type:	☐External, ☒ Integrated
Antenna Gain:	n2: -2.00dBi (Ant0); -1.00dBi (Ant1); -1.23dBi (Ant2); n5: -5.60dBi (Ant0); -6.38dBi (Ant1); n7: -1.36dBi (Ant0); -2.48dBi (Ant1); -0.44dBi (Ant2); n38: -1.36dBi (Ant0); -2.48dBi (Ant1); -0.44dBi (Ant2); -4.10dBi (Ant5); n41: -1.36dBi (Ant0); -2.48dBi (Ant1); -0.44dBi (Ant2); -2.50dBi (Ant5); n66: -2.27dBi (Ant0); -1.21dBi (Ant1); -1.52dBi (Ant2); n78: -3.41dBi (Ant3); -0.87dBi (Ant4); -3.22dBi (Ant6); -3.64dBi (Ant9);

Remark

1, The information above was declared by manufacture. Please refer to the specifications or user manual for more detailed description.

3.2. Test Environment

Relative Humidity:	52.0% - 62.0%	
Atmospheric Pressure:	101.32 KPa	
Temperature:	NT (normal temperature)	25.0 °C – 27.5 °C
Voltage:	LV (Low voltage)	3.40V
	NV (Nominal voltage)	3.91V
	HV (High voltage)	4.50V

3.3. Specification of Accessories

Accessory	Brand Name	Model Name
AC Adapter 1 (US)	Motorola (Chenyang)	MC-681N
AC Adapter 2 (EU)	Motorola (Chenyang)	MC-682N
AC Adapter 3 (UK)	Motorola (Chenyang)	MC-683N
AC Adapter 4 (AU)	Motorola (Chenyang)	MC-685N
AC Adapter 5 (AR)	Motorola (Chenyang)	MC-686N
AC Adapter 6 (CHILE)	Motorola (Chenyang)	MC-689N
AC Adapter 7 (US)	Motorola (Acbel)	MC-681N
AC Adapter 8 (EU)	Motorola (Acbel)	MC-682N
AC Adapter 9 (UK)	Motorola (Acbel)	MC-683N
AC Adapter 10 (AU)	Motorola (Acbel)	MC-685N
AC Adapter 11 (AR)	Motorola (Acbel)	MC-686N

Battery 1	Motorola (SUNWODA)	QR50
Battery 2	Motorola (ATL)	QR50
USB Cable 1	Luxshare	SC18E08104
USB Cable 2	Saibao	SC18D71644
Wireless Earphones	Motorola	XT2443-1

4. Test Configuration of Equipment Under Test

4.1. Test Mode for NR Configuration

Test Case	5G NR	SCS		Bandwidth	Modulation					Channel			RB	
		15KHz	30KHz		Pi/2BPSK	QPSK	16QAM	64QAM	256QAM	LCH	MCH	HCH	1	Full
Effective Isotropic Radiated Power	N2 (1850-1910)	●	○	All Supported BW	●	●	●	●	●	●	●	●	●	●
	N5 (824-849)	●	○	All Supported BW	●	●	●	●	●	●	●	●	●	●
	N7 (2500-2570)	●	○	All Supported BW	●	●	●	●	●	●	●	●	●	●
	N38 (2570-2620)	○	●	All Supported BW	●	●	●	●	●	●	●	●	●	●
	N41 (2496-2690)	○	●	All Supported BW	●	●	●	●	●	●	●	●	●	●
	N66 (1710-1780)	●	○	All Supported BW	●	●	●	●	●	●	●	●	●	●
	N78 (3450-3550)	○	●	All Supported BW	●	●	●	●	●	●	●	●	●	●
Peak-Average Ratio	N2 (1850-1910)	●	○	Highest BW	●	●	○	○	○	●	●	●	○	●
	N5 (824-849)	●	○	Highest BW	●	●	○	○	○	●	●	●	○	●
	N7 (2500-2570)	●	○	Highest BW	●	●	○	○	○	●	●	●	○	●
	N38 (2570-2620)	○	●	Highest BW	●	●	○	○	○	●	●	●	○	●
	N41 (2496-2690)	○	●	Highest BW	●	●	○	○	○	●	●	●	○	●
	N66 (1710-1780)	●	○	Highest BW	●	●	○	○	○	●	●	●	○	●
	N78 (3450-3550)	○	●	Highest BW	●	●	○	○	○	●	●	●	○	●
Modulation Characteristics	N2 (1850-1910)	●	○	Highest BW	●	●	●	●	●	○	●	○	○	●
	N5 (824-849)	●	○	Highest BW	●	●	●	●	●	○	●	○	○	●
	N7 (2500-2570)	●	○	Highest BW	●	●	●	●	●	○	●	○	○	●
	N38 (2570-2620)	○	●	Highest BW	●	●	●	●	●	○	●	○	○	●
	N41 (2496-2690)	○	●	Highest BW	●	●	●	●	●	○	●	○	○	●
	N66 (1710-1780)	●	○	Highest BW	●	●	●	●	●	○	●	○	○	●
	N78 (3450-3550)	○	●	Highest BW	●	●	●	●	●	○	●	○	○	●
Occupied Bandwidth & 26dB Emission Bandwidth	N2 (1850-1910)	●	○	All Supported BW	●	●	●	●	●	○	●	○	○	●
	N5 (824-849)	●	○	All Supported BW	●	●	●	●	●	○	●	○	○	●
	N7 (2500-2570)	●	○	All Supported BW	●	●	●	●	●	○	●	○	○	●
	N38 (2570-2620)	○	●	All Supported BW	●	●	●	●	●	○	●	○	○	●
	N41 (2496-2690)	○	●	All Supported BW	●	●	●	●	●	○	●	○	○	●
	N66 (1710-1780)	●	○	All Supported BW	●	●	●	●	●	○	●	○	○	●
	N78 (3450-3550)	○	●	All Supported BW	●	●	●	●	●	○	●	○	○	●
Conducted Band Edges	N2 (1850-1910)	●	○	All Supported BW	●	●	○	○	○	●	○	●	●	●
	N5 (824-849)	●	○	All Supported BW	●	●	○	○	○	●	○	●	●	●
	N7 (2500-2570)	●	○	All Supported BW	●	●	○	○	○	●	○	●	●	●
	N38 (2570-2620)	○	●	All Supported BW	●	●	○	○	○	●	○	●	●	●
	N41 (2496-2690)	○	●	All Supported BW	●	●	○	○	○	●	○	●	●	●

	N66 (1710-1780)	●	○	All Supported BW	●	●	○	○	○	●	○	●	●	●
	N78 (3450-3550)	○	●	All Supported BW	●	●	○	○	○	●	○	●	●	●
Conducted Spurious Emission	N2 (1850-1910)	●	○	All Supported BW	●	●	○	○	○	●	●	●	●	○
	N5 (824-849)	●	○	All Supported BW	●	●	○	○	○	●	●	●	●	○
	N7 (2500-2570)	●	○	All Supported BW	●	●	○	○	○	●	●	●	●	○
	N38 (2570-2620)	○	●	All Supported BW	●	●	○	○	○	●	●	●	●	○
	N41 (2496-2690)	○	●	All Supported BW	●	●	○	○	○	●	●	●	●	○
	N66 (1710-1780)	●	○	All Supported BW	●	●	○	○	○	●	●	●	●	○
	N78 (3450-3550)	○	●	All Supported BW	●	●	○	○	○	●	●	●	●	○
N71 (663-698)Frequency Stability	N2 (1850-1910)	●	○	Highest BW	○	●	○	○	○	○	●	○	○	●
	N5 (824-849)	●	○	Highest BW	○	●	○	○	○	○	●	○	○	●
	N7 (2500-2570)	●	○	Highest BW	○	●	○	○	○	○	●	○	○	●
	N38 (2570-2620)	○	●	Highest BW	○	●	○	○	○	○	●	○	○	●
	N41 (2496-2690)	○	●	Highest BW	○	●	○	○	○	○	●	○	○	●
	N66 (1710-1780)	●	○	Highest BW	○	●	○	○	○	○	●	○	○	●
	N78 (3450-3550)	○	●	Highest BW	○	●	○	○	○	○	●	○	○	●

Remark:

1, the mark "●" means this configuration was chosen for testing, mark "○" means not selected, and the mark "✘" means not applicable.

2, All Supported BW means all supported bandwidth for selected SCS configuration.

4.2. Test Frequencies

4.2.1. 5G NR System

4.2.1.1. NR Band n2 (1850-1910)

4.2.1.1.1. SCS=15KHz

Bandwidth	LCH		MCH		HCH	
	Arfcn	Freq	Arfcn	Freq	Arfcn	Freq
5MHz	370500	1852.5	376000	1880.0	381500	1907.5
10MHz	371000	1855.0	376000	1880.0	381000	1905.0
15MHZ	371500	1857.5	376000	1880.0	380500	1902.5
20MHz	372000	1860.0	376000	1880.0	380000	1900.0

4.2.1.2. NR Band n5 (824-849)

4.2.1.2.1. SCS=15KHz

Bandwidth	LCH		MCH		HCH	
	Arfcn	Freq	Arfcn	Freq	Arfcn	Freq
5MHz	165300	826.5	167300	836.5	169300	846.5
10MHz	165800	829.0	167300	836.5	168800	844.0
15MHZ	166300	831.5	167300	836.5	168300	841.5
20MHz	166800	834.0	167300	836.5	167800	839.0

4.2.1.3. NR Band n7 (2500-2570)

4.2.1.3.1. SCS=15KHz

Bandwidth	LCH		MCH		HCH	
	Arfcn	Freq	Arfcn	Freq	Arfcn	Freq
5MHz	500500	2502.5	507000	2535.0	513500	2567.5
10MHz	501000	2505.0	507000	2535.0	513000	2565.0
15MHZ	501500	2507.5	507000	2535.0	512500	2562.5
20MHz	502000	2510.0	507000	2535.0	512000	2560.0
25MHz	502500	2512.5	507000	2535.0	511500	2557.5
30MHz	503000	2515.0	507000	2535.0	511000	2555.0
40MHz	504000	2520.0	507000	2535.0	510000	2550.0

4.2.1.4. NR Band n38 (2570-2620)

4.2.1.4.1. SCS=30KHz

Bandwidth	LCH		MCH		HCH	
	Arfcn	Freq	Arfcn	Freq	Arfcn	Freq
10MHz	515000	2575.0	519000	2595.0	523000	2615.0
15MHZ	515500	2577.5	519000	2595.0	522500	2612.5
20MHz	516000	2580.0	519000	2595.0	522000	2610.0
30MHz	517000	2585.0	519000	2595.0	521000	2605.0
40MHz	518000	2590.0	519000	2595.0	520000	2600.0

4.2.1.5. NR Band n41 (2496-2690)

4.2.1.5.1. SCS=30KHz

Bandwidth	LCH		MCH		HCH	
	Arfcn	Freq	Arfcn	Freq	Arfcn	Freq
20MHz	501204	2506.02	518598	2592.99	535998	2679.99
30MHz	502200	2511.00	518598	2592.99	534996	2674.98
40MHz	503202	2516.01	518598	2592.99	534000	2670.00
50MHz	504204	2521.02	518598	2592.99	532998	2664.99
60MHz	505200	2526.00	518598	2592.99	531996	2659.98
70MHz	506202	2531.01	518598	2592.99	531000	2655.00
80MHz	507204	2536.02	518598	2592.99	529998	2649.99
90MHz	508200	2541.00	518598	2592.99	528996	2644.98
100MHz	509202	2546.01	518598	2592.99	528000	2640.00

4.2.1.6. NR Band n66 (1710-1780)

4.2.1.6.1. SCS=15KHz

Bandwidth	LCH		MCH		HCH	
	Arfcn	Freq	Arfcn	Freq	Arfcn	Freq
5MHz	342500	1712.5	349000	1745.0	355500	1777.5
10MHz	343000	1715.0	349000	1745.0	355000	1775.0
15MHz	343500	1717.5	349000	1745.0	354500	1772.5
20MHz	344000	1720.0	349000	1745.0	354000	1770.0
30MHz	345000	1725.0	349000	1745.0	353000	1765.0
40MHz	346000	1730.0	349000	1745.0	352000	1760.0

4.2.1.7. NR Band N78 (3450-3550)

4.2.1.7.1. SCS=30KHz

Bandwidth	LCH		MCH		HCH	
	Arfcn	Freq	Arfcn	Freq	Arfcn	Freq
10MHz	630334	3455.01	633334	3500.01	636332	3544.98
15MHz	630500	3457.50	633334	3500.01	636166	3542.49
20MHz	630668	3460.02	633334	3500.01	636000	3540.00
30MHz	631000	3465.00	633334	3500.01	635666	3534.99
40MHz	631334	3470.01	633334	3500.01	635332	3529.98
50MHz	631668	3475.02	633334	3500.01	635000	3525.00
60MHz	632000	3480.00	633334	3500.01	634666	3519.99
70MHz	632334	3485.01	633334	3500.01	634332	3514.98
80MHz	632668	3490.02	633334	3500.01	634000	3510.00
90MHz	633000	3495.00	633334	3500.01	633666	3504.99
100MHz	633334	3500.01	633334	3500.01	633334	3500.01

5. Description of Tests

5.1. Conducted Output Power Measurement

5.1.1. Description of Conducted Output Power Measurement

A base station simulator was used to establish communication with the EUT, Its parameters were set to transmit the maximum power on the EUT. The measured power in the radio frequency on the transmitter output terminals shall be reported.

5.1.2. Test Procedures

1，The testing follows ANSI C63.26 Section 5.2.
2，The transmitter output port was connected to the system simulator.
3，Set EUT at maximum power through the system simulator.
4，Select lowest, Middle, Highest channels for each band and each modulation.
5，Record the reading power from the system simulator.

5.2. Effective (Isotropic) Radiated Power

Measurement Procedure: ANSI C63.26

Calculate power in dBm by the following formula:

ERP (dBm) = Conducted Power (dBm) + antenna gain (dBd)

EIRP (dBm) = Conducted Power (dBm) + antenna gain (dBi)

EIRP=ERP+2.15dB

5.3. Peak-to-Average Ratio Measurement

5.3.1. Description of PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis, A CCDF curve depicts the probability of peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13dB.

5.3.2. Test Procedures

1，The testing follows ANSI C63.26 Section 5.2.3.4(CCDF)
2，Refer to instrument's analyser instruction manual for details on how to use the power statistics/CCDF function.
3，Centre Frequency = Carrier centre frequency.
4，Set resolution bandwidth ≥ signal's occupied bandwidth.
5，Set the number of counts to a value that stabilizes the measured CCDF curve.
6，Set the measurement interval as follows:
1) for continuous transmissions (>98% duty cycle), set to 1ms.
2) for burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
7，Record the maximum PAR level associated with a probability of 0.1%.

5.3.3. Alternate procedure for PAR

Measurement Procedure: 5.2.6 of ANSI C63.26

Some regulatory requirements specify a PAR limit when the output power limits are specified in terms of average power. If it becomes necessary to provide measurement data to demonstrate compliance to a PAR limit, then the appropriate procedure from those provided in 5.2.3 shall be utilized to determine the peak power (or peak PSD) and the appropriate procedure from those provided in 5.2.4 shall be used to determine the average power (or average PSD). The data from these measurements is then used in Equation (2) to determine the PAR of a narrowband CW-like signal. See 5.2.3.4 for guidance on determining the PAR of a broadband noise-like signal.

PAR (dB) = P_{Pk} (dBm or dBW) − P_{Avg} (dBm or dBW)

where

PAR peak-to-average power ratio, in dB

P_{Pk} measured peak power or peak PSD level, in dBm or dBW

P_{Avg} measured average power or average PSD level, in dBm or dBW

5.4. 99% Occupied Bandwidth & 26dB Emission Bandwidth

5.4.1. Description of 99% Occupied Bandwidth & 26dB Emission Bandwidth Measurement

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 percent of the total mean power radiated by a given emission shall be measured. The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyser, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel, middle channel and high channel). The span of the analyser shall be set to capture all products of the modulation process, including the emission skirts. The resolution bandwidth shall be set to as close to 1 percent of the selected span as is possible without being below 1 percent. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used since a peak or, peak hold, may produce a wider bandwidth than actual. The trace data points are recovered and are directly summed in linear terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 percent of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points. This frequency is recorded. The span between the two recorded frequencies is the occupied bandwidth.

5.4.2. Test Procedures

1, The testing follows ANSI C63.26 Section 5.4
2, The signal analyzer's automatic measurement capability was used to perform the 99% occupied bandwidth and the 26dB emission bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
3, RBW ⩾1% - 5% of the expected OBW.
4, VBW ⩾3 * RBW
5, Detector=Peak
6, Trace Mode= Max Hold.
7, Sweep Time=Auto
8, The trace was allowed to stabilize.
9, If necessary, steps 2-7 were repeated after changing the RBW such that it would be within 1%-5% of the 99% occupied bandwidth observed in step 7.

5.5. Conducted Band Edge Measurement

5.5.1. Description of Conducted Band Edge Measurement

The transmitter output was connected to a calibrated coaxial cable, attenuator and spectrum analyser, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at two frequencies (low channel and high channel).in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of 100kHz or 1% of the emission bandwidth of the fundamental emission of the transmitter may be employed. The EUT emission bandwidth is measured as the width of the signal between two points, outside of which all emissions are attenuated at least 26dB below the transmitter power. The video bandwidth of the spectrum analyser was set at thrice the resolution bandwidth. Detector Mode was set to peak or peak hold power.

5.5.2. Test Procedures

1, The testing follows ANSI C63.26 Section 5.7
2, Start and stop frequency were set such that the band edge would be placed in the centre of the spectrum analyzer screen.
3, Span was set large enough to capture all out of band emissions near the band edge.
4, RBW ⩾1% of the emission bandwidth (2% of the emission bandwidth for n7/n38/n41 except when 1MHz band is 2495-2496MHz);
5, VBW ⩾3 * RBW
6, Detector=RMS
7, Trace Mode=Trace Average for continuous emissions, Max Hold for pulse emissions.
8, Sweep Points ⩾2 x Span/RBW
9, Sweep Time = Auto
10, The trace was allowed to stabilize.

5.6. Conducted Spurious Emission Measurement

5.6.1. Description of Conducted Spurious Emission Measurement

The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyser, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel and high channel). The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyser. The spectrum is scanned from 9KHz up to a

frequency including its 10th harmonic or 40GHz, which is lower.

5.6.2. Test Procedures

1， The testing follows ANSI C63.26 Section 5.7
2， RBW ≥100KHz for emissions below 1GHz,1MHz for emissions above 1GHz.
3， VBW ≥3 * RBW
4， Detector = RMS
5， Trace Mode = Average.
6， Sweep Points ≥2 * Span/RBW
7， Sweep Time = Auto
8， The trace was allowed to stabilize.

5.7. Frequency Stability Measurement

5.7.1. Description of Frequency Stability Measurement

The Frequency Stability should be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emissions stays within the authorized frequency block.

5.7.2. Measurement Procedure for Temperature Variation

1, The testing follows ANSI C63.26 section 5.6.4.
2, The EUT was set up in the thermal chamber and connected with the system simulator.
3, With power off, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4， With power off, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum change in frequency was recorded within one minute.

5.7.3. Measurement Procedure for Voltage Variation

1, The testing follows ANSI C63.26 section 5.6.5.
2, The EUT was placed in a thermal chamber at 20±5°C and connected with the system simulator.
3, The power supply voltage to the EUT was varied from 85% to 115% of the nominal value for other than hand carried battery equipment.
4， For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.
5， The variation in frequency was measured for the worst case.

6. List of Measuring Equipment

Equipment	Model	Manufacture	Device No.	Cal Date	Cal Due
Radio Communication Analyzer	MT8000A	Anritsu	6272478367	2023-12-07	2024-12-06
	MT8821C	Anritsu	6272498303	2023-12-07	2024-12-06
Radio Communication Analyzer	E7515E	Keysight	MY59296045	2023-12-07	2024-12-06
Spectrum Analyzer (50Hz-40GHz)	FSV	R&S	101046	2023-12-07	2024-12-06
Spectrum Analyzer (50Hz-40GHz)	FSV	R&S	101334	2024-01-30	2025-01-29
Power Supply	2036	Keithley	4058748	2023-12-07	2024-12-06
Temperature Chamber	C/64/40/3	Weiss	56246017780020	2024-04-01	2025-03-31
Power Divider	-	WOKEN	0120A04051801O	NCR	
Power Divider	-	WOKEN	0120A02051801M	NCR	

Remark:

1, For equipment listed above that has a calibration date or calibration due date that falls within the test date range, and the equipment was used after calibrate date and before calibrate due date.

2, "NCR" means no calibration required.

7. Measurement Uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26. All the measurement uncertainties value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be directly to specified limit to determine compliance.

7.1. Uncertainty of Conducted Measurement

Contribution	Expanded Uncertainty
Conducted Power	± 0.77
Conducted Emission	± 0.76
Channel Bandwidth	± 0.08%

8. Appendixes

Appendix B.1	NR Band n2A (1850-1910)
Appendix B.2	NR Band n5A (824-849)
Appendix B.3	NR Band n7A (2500-2570)
Appendix B.4	NR Band DC_66A_n38A (2570-2620)
Appendix B.5	NR Band DC_66A_n41A (2496-2690)
Appendix B.6	NR Band DC_7A_n66A (1710-1780)
Appendix B.7	NR Band DC_2A_n78A (3450-3550)
Appendix B.8	NR Band DC_5A_n2A (1850-1910)
Appendix B.9	NR Band DC_2A_n7A (2500-2570)
Appendix B.10	NR Band DC_5A_n66A (1710-1780)

The End