Partial FCC RF Test Report

APPLICANT	**: Motorola Mobility LLC**
EQUIPMENT	**: Mobile Cellular Phone**
BRAND NAME	**: Motorola**
MODEL NAME	**: XT2409-1, XT2409-6**
FCC ID	**: IHDT56AS6**
STANDARD	**: 47 CFR Part 2, 22, 24, 27, 90(S)**
CLASSIFICATION	**: PCS Licensed Transmitter Held to Ear (PCE)**
TEST DATE(S)	**: Jun. 21, 2024 ~ Jul. 03, 2024**

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia

Cert #5145.02

Sporton International Inc. (Kunshan)
No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG452307G	Rev. 01	Initial issue of report	Jul. 03, 2024

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1053 §22.917(a) §24.238(a) §27.53(h) §27.53(l)(2)	Radiated Spurious Emission (5G NR n5, n26) (5G NR n2) (5G NR n66) (5G NR n77, n78)	< $43+10\log_{10}$(P[Watts])	PASS	Under limit 15.97 dB at 7626.00 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (5G NR n7, n38, n41)	< $55+10\log_{10}$(P[Watts])		

Note:

1. This partial report only includes 5G NR RSE test data, 5G NR other test cases are shown separately.
2. The test items of inter band CA were cover by 5G NR single carrier due to the CA power is reduced according to 3GPP MPR.

Conformity Assessment Condition:
1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account. 2. The measurement uncertainty please refer to each test result in the section “Measurement Uncertainty”
Disclaimer:
The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

1 General Description

1.1 Applicant

Motorola Mobility LLC
222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.2 Manufacturer

Motorola Mobility LLC
222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2409-1, XT2409-6
FCC ID	IHDT56AS6
IMEI Code	Radiation : 354637960030873/354637960030881
HW Version	DVT2
SW Version	UUI34.42
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n26 : 814 MHz ~ 824 MHz (Part90S) 5G NR n26 : 824 MHz ~ 849 MHz (Part22H) 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n77: 3700 MHz ~ 3980 MHz 5G NR n78: 3700 MHz ~ 3800 MHz
Rx Frequency	5G NR n2 : 1930 MHz ~ 1990 MHz 5G NR n5 : 869 MHz ~ 894 MHz 5G NR n7 : 2620 MHz ~ 2690 MHz 5G NR n26 : 859 MHz ~ 869 MHz (Part90S) 5G NR n26 : 869 MHz ~ 894 MHz (Part22H) 5G NR n38: 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n66 : 2110 MHz~ 2200 MHz 5G NR n77: 3700 MHz ~ 3980 MHz 5G NR n78: 3700 MHz ~ 3800 MHz
Uplink NR CA Bands	CA_n38A-n78A

Bandwidth	n2 : 5MHz / 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz n5 : 5MHz / 10MHz / 15MHz / 20MHz (25MHz DL only) n7 : 5MHz / 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz / 50MHz n26 : 5MHz / 10MHz / 15MHz / 20MHz (25MHz & 30MHz DL only) n38 : 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 40MHz n41 : 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz 45MHz / 50MHz / 60MHz / 70MHz / 80MHz / 90MHz / 100MHz n66 : 5MHz / 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz / 45MHz n77/n78: 10MHz / 15MHz / 20MHz / 25MHz /. 30MHz / 40MHz / 50MHz / 60MHz / 70MHz / 80MHz / 90MHz / 100MHz
SCS	15kHz for FDD Bands, 30kHz for TDD Bands
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM

Remark:

1. 5G NR bands support SA/NSA mode.
2. All the supported ENDC combinations are verified conducted power, only the ENDC combination with highest power are shown in the report.
3. The EN-DC mode combination could be referred to the product spec.
4. The device supports two PAs for 5G NR n2/n66(main PA and other PA), both the PAs are tested for RSE.
5. 5G NR n77/n78 support HPUE mode and UL MIMO mode.

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Testing Location

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH04-KS	CN1257	314309

1.7 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH04-KS	AUDIX	E3	210616

1.8 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 2, 22, 24, 27, 90(S)
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

All test items were verified and recorded according to the standards and without any deviation during the test.

1.9 Specification of Accessory

Specification of Accessory				
AC Adapter 1(US)	**Brand Name**	Motorola(Chenyang)	**Model Name**	MC-681N
AC Adapter 1(EU)	**Brand Name**	Motorola(Chenyang)	**Model Name**	MC-682N
AC Adapter 1(UK)	**Brand Name**	Motorola(Chenyang)	**Model Name**	MC-683N
AC Adapter 1(AU)	**Brand Name**	Motorola(Chenyang)	**Model Name**	MC-685N
AC Adapter 1(BR)	**Brand Name**	Motorola(Chenyang)	**Model Name**	MC-687N
AC Adapter 2(US)	**Brand Name**	Motorola(Acbel)	**Model Name**	MC-681N
AC Adapter 2(EU)	**Brand Name**	Motorola(Acbel)	**Model Name**	MC-682N
AC Adapter 2(UK)	**Brand Name**	Motorola(Acbel)	**Model Name**	MC-683N
AC Adapter 2(AU)	**Brand Name**	Motorola(Acbel)	**Model Name**	MC-685N
AC Adapter 2(BR)	**Brand Name**	Motorola(Acbel)	**Model Name**	MC-687N
Battery 1	**Brand Name**	Motorola(ATL)	**Model Name**	QV43
Battery 2	**Brand Name**	Motorola(CosMX)	**Model Name**	QV43
USB Cable 1	**Brand Name**	Motorola(Hexin)	**Model Name**	S928E28748
USB Cable 2	**Brand Name**	Motorola(Juwei)	**Model Name**	S928E28749
USB Cable 3	**Brand Name**	Motorola(Saibao)	**Model Name**	S928E38943
Earphone	**Brand Name**	Motorola(Lyand)	**Model Name**	MI181C(SH38D62338)

2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y/Z plane) were recorded in this report.

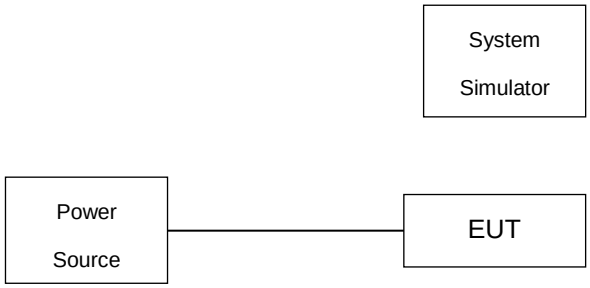
The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.

	X Plane	Y Plane	Z Plane
Orthogonal Planes of EUT			

Test Items	5G NR	Bandwidth (MHz)													Modulation					RB #		Test Channel		
		5	10	15	20	25	30	40	50	60	70	80	90	100	PI/2 BPSK	QPSK	16Q AM	64 QAM	256 QAM	1	Full	L	M	H
Radiated Spurious Emission	n2	Worst Case																					v	
	n5	Worst Case																					v	
	n7	Worst Case																					v	
	n26	Worst Case																					v	
	n41	Worst Case																					v	
	n66	Worst Case																					v	
	n77	Worst Case																					v	
Note	1. The mark "**v** " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported. 4. 5G NR Band n41 overlaps the entire frequency range of Band n38. Therefore, the RSE test results provided in this report covers Band n41 as well as Band n38. 5. 5G NR Band n77 overlaps the entire frequency range of Band n78. Therefore, the RSE test results provided in this report covers Band n77 as well as Band n78																							

Test Items	Band	Bandwidth (MHz)						Modulation					RB #		Test Channel		
		10	15	20	25	30-90	100	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	1	Full	L	M	H
Radiated Spurious Emission	CA_n38A-n78A	Worst Case														v	
Note	1. The mark "**v** " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.																

2.2 Connection Diagram of Test System



This example is connection diagram of EUT test configurations.

. For detail, please refer to test mode configuration and setup photographs for each test item.

The EUT has been configuration operated in a manner tended to maximize its emission characteristics in a typical application.

2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	DC Power Supply	GW	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
2.	LTE Base Station	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m
3.	NR Base Station	Anritsu	MT8000A	N/A	N/A	Unshielded, 1.8 m

2.4 Frequency List of Low/Middle/High Channels

5G NR n2 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
40	Channel	374000	376000	378000
	Frequency	1870	1880	1890
35	Channel	373500	376000	378500
	Frequency	1867.5	1880	1892.5
30	Channel	373000	376000	379000
	Frequency	1865	1880	1895
25	Channel	372500	376000	379500
	Frequency	1862.5	1880	1897.5
20	Channel	372000	376000	380000
	Frequency	1860	1880	1900
15	Channel	371500	376000	380500
	Frequency	1857.5	1880	1902.5
10	Channel	371000	376000	381000
	Frequency	1855	1880	1905
5	Channel	370500	376000	381500
	Frequency	1852.5	1880	1907.5

5G NR n5 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	166800	167300	167800
	Frequency	834	836.5	839
15	Channel	166300	167300	168300
	Frequency	831.5	836.5	841.5
10	Channel	165800	167300	168800
	Frequency	829	836.5	844
5	Channel	165300	167300	169300
	Frequency	826.5	836.5	846.5

5G NR n7 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
50	Channel	505000	507000	509000
	Frequency	2525	2535	2545
40	Channel	504000	507000	510000
	Frequency	2520	2535	2550
35	Channel	503500	507000	510500
	Frequency	2517.5	2535	2552.5
30	Channel	503000	507000	511000
	Frequency	2515	2535	2555
25	Channel	502500	507000	511500
	Frequency	2512.5	2535	2557.5
20	Channel	502000	507000	512000
	Frequency	2510	2535	2560
15	Channel	501500	507000	512500
	Frequency	2507.5	2535	2562.5
10	Channel	501000	507000	513000
	Frequency	2505	2535	2565
5	Channel	500500	507000	513500
	Frequency	2502.5	2535	2567.5

5G NR n26 Channel and Frequency List for Part 22H				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	166800	167300	167800
	Frequency	834	836.5	839
15	Channel	166300	167300	168300
	Frequency	831.5	836.5	841.5
10	Channel	165800	167300	168800
	Frequency	829	836.5	844
5	Channel	165300	167300	169300
	Frequency	826.5	836.5	846.5

5G NR n26 Channel and Frequency List for Part 90S				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
10	Channel	-	163800	-
	Frequency	-	819	-
5	Channel	163300	163800	164300
	Frequency	816.5	819	821.5

5G NR n26 Cross-rule Channel and Frequency List for Part 90S				
BW [MHz]	**Channel/Frequency(MHz)**	**-**	**Middle**	**-**
20	Channel	-	164800	-
	Frequency	-	824	-
15	Channel	-	164300	-
	Frequency	-	821.5	-

5G NR n38 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
40	Channel	518000	519000	520000
	Frequency	2590	2595	2600
30	Channel	517000	519000	521000
	Frequency	2585	2595	2605
25	Channel	516500	519000	521500
	Frequency	2582.5	2595	2607.5
20	Channel	516000	519000	522000
	Frequency	2580	2595	2610
15	Channel	515500	519000	522500
	Frequency	2577.5	2595	2612.5
10	Channel	515000	519000	523000
	Frequency	2575	2595	2615

5G NR n41 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
100	Channel	509202	518598	528000
	Frequency	2546.01	2592.99	2640
90	Channel	508200	518598	528996
	Frequency	2541	2592.99	2644.98
80	Channel	507204	518598	529998
	Frequency	2536.02	2592.99	2649.99
70	Channel	506202	518598	531000
	Frequency	2531.01	2592.99	2655
60	Channel	505200	518598	531996
	Frequency	2526	2592.99	2659.98
50	Channel	504204	518598	532998
	Frequency	2521.02	2592.99	2664.99
45	Channel	503704	518598	533498
	Frequency	2518.52	2592.99	2667.49
40	Channel	503202	518598	534000
	Frequency	2516.01	2592.99	2670
35	Channel	502704	518598	534498
	Frequency	2513.52	2592.99	2672.49
30	Channel	502200	518598	534996
	Frequency	2511	2592.99	2674.98
25	Channel	501704	518598	535498
	Frequency	2508.52	2592.99	2677.49
20	Channel	501204	518598	535998
	Frequency	2506.02	2592.99	2679.99
15	Channel	500700	518598	536496
	Frequency	2503.5	2592.99	2682.48
10	Channel	500202	518598	537000
	Frequency	2501.01	2592.99	2685

5G NR n66 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
45	Channel	346500	349000	351500
	Frequency	1732.5	1745	1757.5
40	Channel	346000	349000	352000
	Frequency	1730	1745	1760
35	Channel	344500	349000	352500
	Frequency	1722.5	1745	1762.5
30	Channel	345000	349000	353000
	Frequency	1725	1745	1765
25	Channel	344500	349000	353500
	Frequency	1722.5	1745	1767.5
20	Channel	344000	349000	354000
	Frequency	1720	1745	1770
15	Channel	343500	349000	354500
	Frequency	1717.5	1745	1772.5
10	Channel	343000	349000	355000
	Frequency	1715	1745	1775
5	Channel	342500	349000	355500
	Frequency	1712.5	1745	1777.5

5G n77 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
100	Channel	650000	656000	662000
	Frequency	3750	3840	3930
90	Channel	649668	656000	662332
	Frequency	3745.02	3840	3934.98
80	Channel	649334	656000	662666
	Frequency	3740.01	3840	3939.99
70	Channel	649000	656000	663000
	Frequency	3735	3840	3945
60	Channel	648668	656000	663332
	Frequency	3730.02	3840	3949.98
50	Channel	648334	656000	663666
	Frequency	3725.01	3840	3954.99
40	Channel	648000	656000	664000
	Frequency	3720	3840	3960
30	Channel	647668	656000	664332
	Frequency	3715.02	3840	3964.98
25	Channel	647500	656000	664500
	Frequency	3712.5	3840	3967.5
20	Channel	647334	656000	664666
	Frequency	3710.01	3840	3969.99
15	Channel	647168	656000	664832
	Frequency	3707.52	3840	3972.48
10	Channel	647000	656000	665000
	Frequency	3705	3840	3975

5G n78 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
100	Channel		650000	
	Frequency		3750	
90	Channel	649668	650000	650332
	Frequency	3745.02	3750	3754.98
80	Channel	649334	650000	650666
	Frequency	3740.01	3750	3759.99
70	Channel	649000	650000	651000
	Frequency	3735	3750	3765
60	Channel	648668	650000	651332
	Frequency	3730.02	3750	3769.98
50	Channel	648334	650000	651666
	Frequency	3725.01	3750	3774.99
40	Channel	648000	650000	652000
	Frequency	3720	3750	3780
30	Channel	647668	650000	652332
	Frequency	3715.02	3750	3784.98
25	Channel	647500	650000	652500
	Frequency	3712.5	3750	3787.5
20	Channel	647334	650000	652666
	Frequency	3710.01	3750	3789.99
15	Channel	647168	650000	652832
	Frequency	3707.52	3750	3792.48
10	Channel	647000	650000	653000
	Frequency	3705	3750	3795

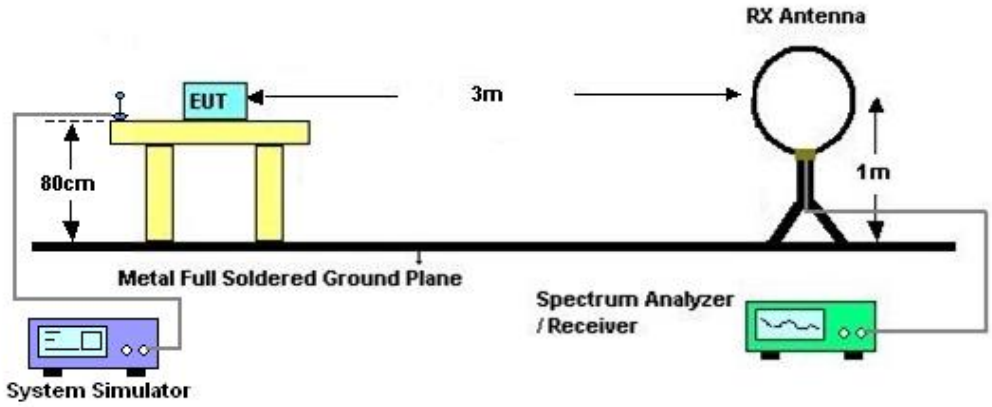
3 Radiated Test Items

3.1 Measuring Instruments

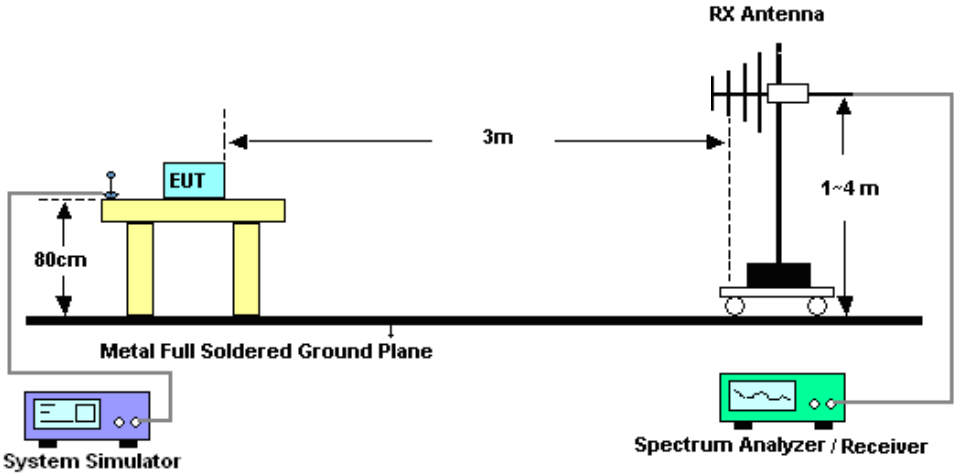
See list of measuring instruments of this test report.

3.2 Test Setup

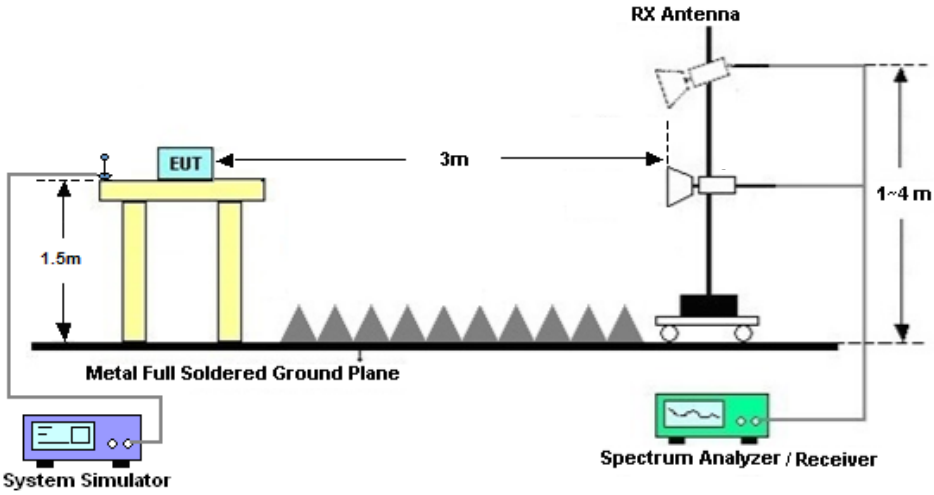
3.2.1 For radiated test below 30MHz



3.2.2 For radiated test from 30MHz to 1GHz



3.2.3 For radiated test above 1GHz



3.3 Test Result of Radiated Test

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

Please refer to Appendix A.

3.4 Radiated Spurious Emission

3.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI C63.26. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

For 5G NR n7/n38/n41

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 55 + 10 log (P) dB.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

3.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
10. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (dBm) = EIRP - 2.15
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
    The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.
13. For 5G NR n7/n38/n41:
    The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 10, 2023	Jun. 21, 2024~ Jul. 03, 2024	Oct. 09, 2024	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2E	101125	9kHz~30MHz	Sep. 11. 2023	Jun. 21, 2024~ Jul. 03, 2024	Sep. 10, 2024	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	59913	30MHz-1GHz	Aug. 19, 2023	Jun. 21, 2024~ Jul. 03, 2024	Aug. 18, 2024	Radiation (03CH04-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00251694	1GHz~18GHz	Jul. 12, 2023	Jun. 21, 2024~ Jul. 03, 2024	Jul. 11, 2024	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2024	Jun. 21, 2024~ Jul. 03, 2024	Jan. 04, 2025	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	380827	9KHz-1GHz	Jul. 06, 2023	Jun. 21, 2024~ Jul. 03, 2024	Jul. 05, 2024	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40G GA	060728	18~40GHz	Jan. 05, 2024	Jun. 21, 2024~ Jul. 03, 2024	Jan. 04, 2025	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18G A	060840	1Ghz-18Ghz	Oct. 10, 2023	Jun. 21, 2024~ Jul. 03, 2024	Oct. 09, 2024	Radiation (03CH04-KS)
Amplifier	Agilent	8449B	3008A02370	1Ghz-18Ghz	Oct. 10, 2023	Jun. 21, 2024~ Jul. 03, 2024	Oct. 09, 2024	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jun. 21, 2024~ Jul. 03, 2024	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jun. 21, 2024~ Jul. 03, 2024	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jun. 21, 2024~ Jul. 03, 2024	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

5 Measurement Uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty 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 compared directly to specified limit to determine compliance.

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.83 dB**

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.83 dB**

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.82 dB**

---------- THE END ----------

Appendix A. Test Results of Radiated Test

Radiated Spurious Emission

Test Engineer :	Bruce	Temperature :	23~25℃
		Relative Humidity :	41~42%

Note: Pre-scanned harmonic for the different antenna combinations, we choose the worst antenna mode to perform final test and record in the report.

n2 SA / NR 40MHz / QPSK(ANT1)								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3720	-55.82	-13	-42.82	-68.08	2.64	14.90	H
	5580	-55.67	-13	-42.67	-67.53	2.94	14.80	H
	7455	-54.43	-13	-41.43	-64.20	3.39	13.16	H
	3720	-55.90	-13	-42.90	-68.16	2.64	14.90	V
	5580	-55.72	-13	-42.72	-67.58	2.94	14.80	V
	7455	-54.85	-13	-41.85	-64.62	3.39	13.16	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EN-DC_5A_n2A / LTE 10MHz + NR 40MHz / QPSK (ANT0+1) – other PA								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3720	-55.85	-13	-42.85	-68.11	2.64	14.90	H
	5580	-56.16	-13	-43.16	-68.02	2.94	14.80	H
	7455	-54.71	-13	-41.71	-64.48	3.39	13.16	H
	3720	-56.29	-13	-43.29	-68.55	2.64	14.90	V
	5580	-56.07	-13	-43.07	-67.93	2.94	14.80	V
	7455	-54.91	-13	-41.91	-64.68	3.39	13.16	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

n5 SA / NR 20MHz / QPSK(ANT0)								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1648	-61.67	-13	-48.67	-68.64	1.58	10.70	H
	2472	-46.31	-13	-33.31	-54.56	2.102	12.50	H
	3304	-58.97	-13	-45.97	-67.86	2.856	13.90	H
	1648	-56.73	-13	-43.73	-63.70	1.58	10.70	V
	2472	-40.60	-13	-27.60	-48.85	2.10	12.50	V
	3304	-58.62	-13	-45.62	-67.51	2.86	13.90	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EN-DC_7A_n5A / LTE 10MHz + NR 20MHz / QPSK (ANT1+0)								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1648	-64.19	-13	-51.19	-71.16	1.58	10.70	H
	2480	-59.59	-13	-46.59	-67.84	2.102	12.50	H
	3304	-59.07	-13	-46.07	-67.96	2.856	13.90	H
	1648	-62.99	-13	-49.99	-69.96	1.58	10.70	V
	2480	-57.55	-13	-44.55	-65.80	2.10	12.50	V
	3304	-58.95	-13	-45.95	-67.84	2.86	13.90	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

n26(22H) SA / NR 20MHz / QPSK(ANT0)								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1632	-60.73	-13	-47.73	-67.70	1.58	10.70	H
	2456	-49.97	-13	-36.97	-58.22	2.102	12.50	H
	3272	-58.18	-13	-45.18	-67.07	2.856	13.90	H
	1632	-58.18	-13	-45.18	-65.15	1.58	10.70	V
	2456	-42.35	-13	-29.35	-50.60	2.10	12.50	V
	3272	-57.92	-13	-44.92	-66.81	2.86	13.90	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EN-DC_7A_n26A(22H) / LTE 10MHz + NR 20MHz / QPSK (ANT1+0)								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1640	-64.53	-13	-51.53	-71.50	1.58	10.70	H
	2456	-55.45	-13	-42.45	-63.70	2.102	12.50	H
	3272	-60.15	-13	-47.15	-69.04	2.856	13.90	H
	1640	-62.47	-13	-49.47	-69.44	1.58	10.70	V
	2456	-53.38	-13	-40.38	-61.63	2.10	12.50	V
	3272	-59.81	-13	-46.81	-68.70	2.86	13.90	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

n7 SA / NR 50MHz / QPSK(ANT1)								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5022	-55.84	-25	-30.84	-66.05	3.03	13.24	H
	7528	-41.33	-25	-16.33	-50.78	3.56	13.01	H
	10048	-60.79	-25	-35.79	-70.31	3.92	13.44	H
	5022	-56.64	-25	-31.64	-66.85	3.03	13.24	V
	7528	-43.79	-25	-18.79	-53.24	3.56	13.01	V
	10048	-61.32	-25	-36.32	-70.84	3.92	13.44	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EN-DC_5A_n7A / LTE 10MHz + NR 50MHz / QPSK (ANT0+1)								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5022	-61.13	-25	-36.13	-71.34	3.03	13.24	H
	7542	-63.31	-25	-38.31	-72.76	3.56	13.01	H
	10048	-62.31	-25	-37.31	-71.83	3.92	13.44	H
	5022	-62.89	-25	-37.89	-73.10	3.03	13.24	V
	7542	-62.84	-25	-37.84	-72.29	3.56	13.01	V
	10048	-62.15	-25	-37.15	-71.67	3.92	13.44	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

n41 SA / NR 100MHz / QPSK(ANT1)								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5092	-53.92	-25	-28.92	-64.13	3.03	13.24	H
	7626	-40.97	-25	-15.97	-50.42	3.56	13.01	H
	10188	-62.02	-25	-37.02	-71.54	3.92	13.44	H
	5092	-55.57	-25	-30.57	-65.78	3.03	13.24	V
	7626	-44.41	-25	-19.41	-53.86	3.56	13.01	V
	10188	-61.67	-25	-36.67	-71.19	3.92	13.44	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EN-DC_5A_n41A / LTE 10MHz + NR 100MHz / QPSK (ANT0+1)								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5092	-52.76	-25	-27.76	-62.97	3.03	13.24	H
	7626	-41.90	-25	-16.90	-51.35	3.56	13.01	H
	10188	-62.26	-25	-37.26	-71.78	3.92	13.44	H
	5092	-59.74	-25	-34.74	-69.95	3.03	13.24	V
	7626	-47.42	-25	-22.42	-56.87	3.56	13.01	V
	10188	-62.11	-25	-37.11	-71.63	3.92	13.44	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

n66 SA / NR 45MHz / QPSK(ANT1)								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3450	-57.77	-13	-44.77	-68.51	2.604	13.34	H
	5175	-55.03	-13	-42.03	-65.54	3.011	13.52	H
	6900	-56.01	-13	-43.01	-66.21	3.271	13.47	H
	3450	-58.11	-13	-45.11	-68.85	2.604	13.34	V
	5175	-55.21	-13	-42.21	-65.72	3.011	13.52	V
	6900	-55.90	-13	-42.90	-66.10	3.271	13.47	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EN-DC_7A_n66A / LTE 10MHz + NR 45MHz / QPSK (ANT4+1)								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3450	-58.19	-13	-45.19	-68.93	2.604	13.34	H
	5175	-54.93	-13	-41.93	-65.44	3.011	13.52	H
	6900	-55.82	-13	-42.82	-66.02	3.271	13.47	H
	3450	-57.61	-13	-44.61	-68.35	2.604	13.34	V
	5175	-55.21	-13	-42.21	-65.72	3.011	13.52	V
	6900	-56.12	-13	-43.12	-66.32	3.271	13.47	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EN-DC_5A_n66A / LTE 10MHz + NR 45MHz / QPSK (ANT0+1) – other PA								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3450	-58.08	-13	-45.08	-68.82	2.604	13.34	H
	5175	-55.38	-13	-42.38	-65.89	3.011	13.52	H
	6900	-55.80	-13	-42.80	-66.00	3.271	13.47	H
	3450	-58.00	-13	-45.00	-68.74	2.604	13.34	V
	5175	-55.39	-13	-42.39	-65.90	3.011	13.52	V
	6900	-56.07	-13	-43.07	-66.27	3.271	13.47	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

n77 SA / NR 100MHz / QPSK(ANT3)								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	7594	-63.13	-13	-50.13	-73.34	3.03	13.24	H
	11378	-60.18	-13	-47.18	-69.63	3.56	13.01	H
	15184	-59.21	-13	-46.21	-68.73	3.92	13.44	H
	7594	-62.58	-13	-49.58	-72.79	3.03	13.24	V
	11378	-60.39	-13	-47.39	-69.84	3.56	13.01	V
	15184	-59.84	-13	-46.84	-69.36	3.92	13.44	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

n77 UL MIMO SA / NR 100MHz / QPSK(ANT3+5)								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	7594	-62.80	-13	-49.80	-73.01	3.03	13.24	H
	11389	-61.41	-13	-48.41	-70.86	3.56	13.01	H
	15184	-59.45	-13	-46.45	-68.97	3.92	13.44	H
	7594	-62.89	-13	-49.89	-73.10	3.03	13.24	V
	11389	-61.21	-13	-48.21	-70.66	3.56	13.01	V
	15184	-58.87	-13	-45.87	-68.39	3.92	13.44	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EN-DC_41A_n77A / LTE 10MHz + NR 100MHz / QPSK (ANT1+3)								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	7583	-62.67	-13	-49.67	-72.88	3.03	13.24	H
	11378	-60.89	-13	-47.89	-70.34	3.56	13.01	H
	15184	-59.42	-13	-46.42	-68.94	3.92	13.44	H
	7583	-61.47	-13	-48.47	-71.68	3.03	13.24	V
	11378	-57.48	-13	-44.48	-66.93	3.56	13.01	V
	15184	-59.00	-13	-46.00	-68.52	3.92	13.44	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

NR CA_n38A-n78A /NR 10MHz + NR 100MHz / QPSK (ANT2+3)								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
n38 Middle	5148	-66.28	-25	-41.28	-76.49	3.03	13.24	H
	7724	-55.40	-25	-30.40	-64.85	3.56	13.01	H
	10300	-56.39	-25	-31.39	-65.91	3.92	13.44	H
	5148	-65.49	-25	-40.49	-75.70	3.03	13.24	V
	7724	-49.21	-25	-24.21	-58.66	3.56	13.01	V
	10300	-60.12	-25	-35.12	-69.64	3.92	13.44	V
n78 Middle	7416	-63.33	-13	-50.33	-73.54	3.03	13.24	H
	11112	-61.17	-13	-48.17	-70.62	3.56	13.01	H
	14822	-60.11	-13	-47.11	-69.63	3.92	13.44	H
	7416	-63.42	-13	-50.42	-73.63	3.03	13.24	V
	11112	-60.53	-13	-47.53	-69.98	3.56	13.01	V
	14822	-60.34	-13	-47.34	-69.86	3.92	13.44	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

n26(90S) SA / NR 20MHz / QPSK(ANT0)								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1632	-65.31	-13	-52.31	-72.28	1.58	10.70	H
	2440	-48.19	-13	-35.19	-56.44	2.102	12.50	H
	3264	-60.09	-13	-47.09	-68.98	2.856	13.90	H
	1632	-63.62	-13	-50.62	-70.59	1.58	10.70	V
	2440	-43.78	-13	-30.78	-52.03	2.10	12.50	V
	3264	-60.49	-13	-47.49	-69.38	2.86	13.90	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EN-DC_7A_n26A(90S) / LTE 10MHz + NR 20MHz / QPSK (ANT1+0)								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1632	-66.12	-13	-53.12	-73.09	1.58	10.70	H
	2440	-59.29	-13	-46.29	-67.54	2.102	12.50	H
	3264	-60.23	-13	-47.23	-69.12	2.856	13.90	H
	1632	-63.19	-13	-50.19	-70.16	1.58	10.70	V
	2440	-58.02	-13	-45.02	-66.27	2.10	12.50	V
	3264	-60.23	-13	-47.23	-69.12	2.86	13.90	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.