



FCC RF Test Report

APPLICANT : Xiaomi Communications Co., Ltd.
EQUIPMENT : Mobile Phone
BRAND NAME : XIAOMI
MODEL NAME : 22071212AG
FCC ID : 2AFZZ12AG
STANDARD : 47 CFR Part 2, 22, 27
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)
TEST DATE(S) : Jun. 13, 2022

We, Sporton International Inc. (ShenZhen), 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. (ShenZhen), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia



Sporton International Inc. (ShenZhen)

1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055

People's Republic of China



TABLE OF CONTENTS

REVISION HISTORY	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Applicant	5
1.2 Manufacturer	5
1.3 Product Feature of Equipment Under Test	5
1.4 Product Specification of Equipment Under Test	5
1.5 Modification of EUT	5
1.6 Testing Location	6
1.7 Test Software	6
1.8 Applicable Standards	6
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	7
2.1 Test Mode	7
2.2 Connection Diagram of Test System	8
2.3 Support Unit used in test configuration and system	8
2.4 Frequency List of Low/Middle/High Channels	9
3 RADIATED TEST ITEMS	20
3.1 Measuring Instruments	20
3.2 Test Setup	20
3.3 Test Result of Radiated Test	21
3.4 Radiated Spurious Emission	22
4 LIST OF MEASURING EQUIPMENT	24
5 UNCERTAINTY OF EVALUATION	25
APPENDIX A. TEST RESULTS OF RADIATED TEST	
APPENDIX B. TEST SETUP PHOTOGRAPHS	



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG250504I	Rev. 01	Initial issue of report	Jun. 20, 2022



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
-	§2.1046	Conducted Output Power	Reporting Only	PASS	1
	§22.913(a)(5)	Effective Radiated Power (5G NR n5)	ERP < 7 Watt		
	§27.50(h)(2)	Equivalent Isotropic Radiated Power (5G NR n7, n38, n41)	EIRP < 2Watt		
	§27.50(j)(3)	Equivalent Isotropic Radiated Power (5G NR n77, n78)	EIRP < 1Watt		
-	§27.50(j)(4)	Peak-to-Average Ratio	<13 dB	PASS	1
-	§2.1049 §96.41	Occupied Bandwidth	Reporting Only	PASS	1
-	§2.1051 §22.917(a) §27.53(l)(2)	Conducted Band Edge Measurement (5G NR n5) (5G NR n77, n78)	< 43+10log ₁₀ (P[Watts])	PASS	1
	§27.53(m)(4)	Conducted Band Edge Measurement (5G NR n7, n38, n41)	§27.53(m)(4)		
-	§2.1051 §22.917(a) §27.53(l)(2)	Conducted Spurious Emission (5G NR n5) (5G NR n77, n78)	< 43+10log ₁₀ (P[Watts])	PASS	1
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (5G NR n7, n38, n41)	< 55+10log ₁₀ (P[Watts])		
-	§2.1055 §22.355	Frequency Stability Temperature & Voltage	< 2.5 ppm for Part 22	PASS	1
	§27.54		Within Authorized Band		
3.4	§2.1053 §22.917(a) §27.53(l)(2)	Radiated Spurious Emission (5G NR n5) (5G NR n77, n78)	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 17.69 dB at 7402.50 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (5G NR n7, n38, n41)	< 55+10log ₁₀ (P[Watts])		

Remark 1 :

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.

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.



1 General Description

1.1 Applicant

Xiaomi Communications Co., Ltd.

#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

1.2 Manufacturer

Xiaomi Communications Co., Ltd.

#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	XIAOMI
Model Name	22071212AG
FCC ID	2AFZZ12AG
IMEI Code	Radiation : 860232060096565/860232060096573
HW Version	P2
SW Version	MIUI 13
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n77: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3980 MHz 5G NR n78: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3800 MHz
Rx Frequency	5G NR n5 : 869 MHz ~ 894 MHz 5G NR n7 : 2620 MHz ~ 2690 MHz 5G NR n38: 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n77: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3980 MHz 5G NR n78: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3800 MHz
Uplink CA Bands	n41A-n77A, n77A-n41A, n5A-n78A, n78A-n5A, n7A-n78A, n78A-n7A, n38A-n78A, n78A-n38A, n41A-n78A, n78A-n41A
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM

1.5 Modification of EUT

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



1.6 Testing Location

Sporton International Inc. (Shenzhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Test Firm	Sporton International Inc. (Shenzhen)		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City Guangdong Province China 518103 TEL: +86-755-33202398		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH03-SZ	CN1256	421272

1.7 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH03-SZ	AUDIX	E3	6.2009-8-24

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, 27
- ♦ 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.

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.

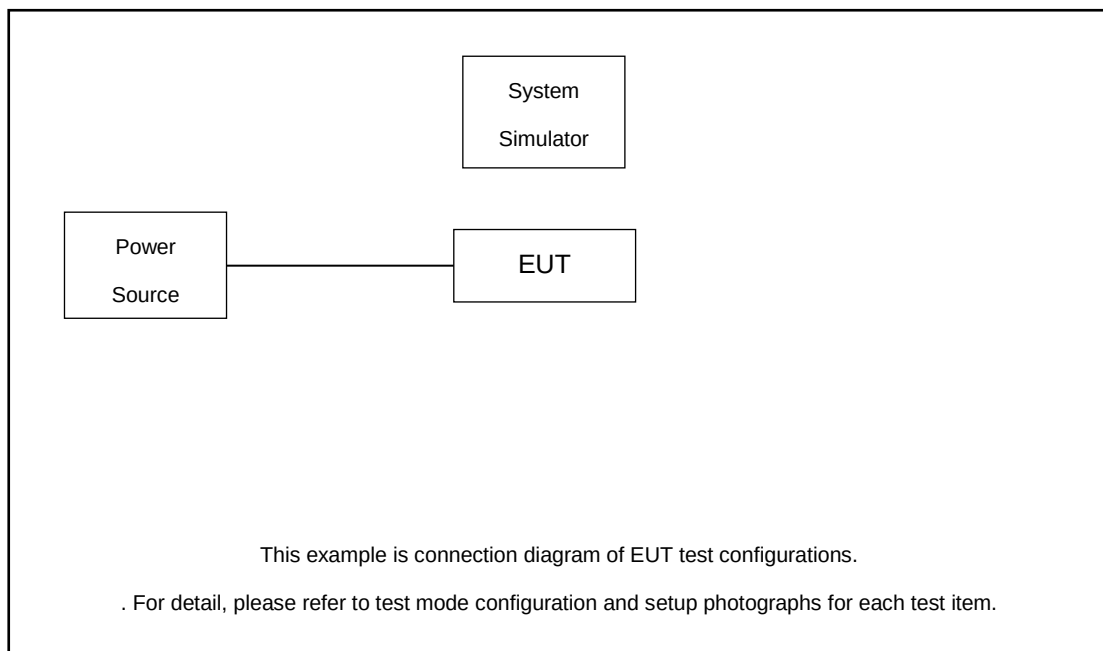
For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases were recorded in this report.

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.

Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			

Test Items	Band	Bandwidth (MHz)						Modulation					RB #		Test Channel		
		5	10	15	20	25-90	100	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	1	Full	L	M	H
Radiated Spurious Emission	CA_n41A-n77A	Worst Case														v	
	CA_n77A-n41A	Worst Case														v	
	CA_n5A-n78A	Worst Case														v	
	CA_n78A-n5A	Worst Case														v	
	CA_n7A-n78A	Worst Case														v	
	CA_n78A-n7A	Worst Case														v	
	CA_n38A-n78A	Worst Case														v	
	CA_n78A-n38A	Worst Case														v	
	CA_n41A-n78A	Worst Case														v	
	CA_n78A-n41A	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



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 n5 (15kHz) Channel and Frequency List for				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
25	Channel	-	176300	-
	Frequency	-	836.5	-
20	Channel	175800	176300	176800
	Frequency	834	836.5	839
15	Channel	175300	176300	177300
	Frequency	831.5	836.5	841.5
10	Channel	174800	176300	177800
	Frequency	829	836.5	844
5	Channel	174300	176300	178300
	Frequency	826.5	836.5	846.5

5G NR n5 (30kHz) Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
25	Channel	-	176300	-
	Frequency	-	836.5	-
20	Channel	175800	176300	176800
	Frequency	834	836.5	839
15	Channel	175300	176300	177300
	Frequency	831.5	836.5	841.5
10	Channel	174800	176300	177800
	Frequency	829	836.5	844



5G NR n7 (15kHz) Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
50	Channel	529000	531000	533000
	Frequency	2525	2535	2545
40	Channel	528000	531000	534000
	Frequency	2520	2535	2550
30	Channel	527000	531000	535000
	Frequency	2515	2535	2555
25	Channel	526500	531000	535500
	Frequency	2512.5	2535	2557.5
20	Channel	526000	531000	536000
	Frequency	2510	2535	2560
15	Channel	525500	531000	536500
	Frequency	2507.5	2535	2562.5
10	Channel	525000	531000	537000
	Frequency	2505	2535	2565
5	Channel	524500	531000	537500
	Frequency	2502.5	2535	2567.5

5G NR n7 (30kHz) Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
50	Channel	529000	531000	533000
	Frequency	2525	2535	2545
40	Channel	528000	531000	534000
	Frequency	2520	2535	2550
30	Channel	527000	531000	535000
	Frequency	2515	2535	2555
25	Channel	526500	531000	535500
	Frequency	2512.5	2535	2557.5
20	Channel	526000	531000	536000
	Frequency	2510	2535	2560
15	Channel	525500	531000	536500
	Frequency	2507.5	2535	2562.5
10	Channel	525000	531000	537000
	Frequency	2505	2535	2565



5G NR n38 (15kHz) 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
5	Channel	514500	519000	523500
	Frequency	2572.5	2595	2617.5

5G NR n38 (30kHz) 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 (15kHz) Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
50	Channel	504201	518601	532998
	Frequency	2521.005	2593.005	2664.99
40	Channel	503202	518601	534000
	Frequency	2516.01	2593.005	2670
30	Channel	502200	518601	534999
	Frequency	2511	2593.005	2674.995
20	Channel	501201	518601	535998
	Frequency	2506.005	2593.005	2679.99
15	Channel	500700	518601	536499
	Frequency	2503.5	2593.005	2682.495
10	Channel	500202	518601	537000
	Frequency	2501.01	2593.005	2685



5G NR n41 (30kHz) 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
40	Channel	503202	518598	534000
	Frequency	2516.01	2592.99	2670
30	Channel	502200	518601	534999
	Frequency	2511	2593.005	2674.995
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 n77 (15kHz) Channel and Frequency List for Part 27O				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
50	Channel	648334	656000	663666
	Frequency	3725.01	3840	3954.99
40	Channel	648000	656000	664000
	Frequency	3720	3840	3960
30	Channel	647667	656000	664332
	Frequency	3715.005	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	647167	656000	664833
	Frequency	3707.505	3840	3972.495
10	Channel	647000	656000	665000
	Frequency	3705	3840	3975



5G n77 (30kHz) Channel and Frequency List for Part 270				
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 (15kHz) Channel and Frequency List for Part 27O				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
50	Channel	648334	650000	651666
	Frequency	3725.01	3750	3774.99
40	Channel	648000	650000	652000
	Frequency	3720	3750	3780
30	Channel	647667	650000	652333
	Frequency	3715.005	3750	3784.995
25	Channel	647500	650000	652500
	Frequency	3712.5	3750	3787.5
20	Channel	647334	650000	652666
	Frequency	3710.01	3750	3789.99
15	Channel	647167	650000	652833
	Frequency	3707.505	3750	3792.495
10	Channel	647000	650000	653000
	Frequency	3705	3750	3795



5G n78 (30kHz) Channel and Frequency List for Part 270				
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



5G n77/n78 (15kHz) Channel and Frequency List for Part 27Q				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
50	Channel	631667	633334	635000
	Frequency	3475.005	3500.01	3525.00
40	Channel	631334	633334	635333
	Frequency	3470.01	3500.01	3529.995
30	Channel	631000	633334	635666
	Frequency	3465	3500.01	3534.99
25	Channel	630834	633334	635833
	Frequency	3462.51	3500.01	3537.495
20	Channel	630667	633334	636000
	Frequency	3460.005	3500.01	3540.00
15	Channel	630500	633334	636166
	Frequency	3457.50	3500.01	3542.49
10	Channel	630334	633334	636333
	Frequency	3455.01	3500.01	3544.995



5G n77/n78 (30kHz) Channel and Frequency List for Part 27Q				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
100	Channel	-	633334	-
	Frequency	-	3500.01	-
90	Channel	633000	633334	633666
	Frequency	3495.00	3500.01	3504.99
80	Channel	632668	633334	634000
	Frequency	3490.02	3500.01	3510.00
70	Channel	632334	633334	634332
	Frequency	3485.01	3500.01	3514.98
60	Channel	632000	633334	634666
	Frequency	3480.00	3500.01	3519.99
50	Channel	631668	633334	635000
	Frequency	3475.02	3500.01	3525.00
40	Channel	631334	633334	635332
	Frequency	3470.01	3500.01	3529.98
30	Channel	631000	633334	635666
	Frequency	3465	3500.01	3534.99
25	Channel	630834	633334	635832
	Frequency	3462.51	3500.01	3537.48
20	Channel	630668	633334	636000
	Frequency	3460.02	3500.01	3540.00
15	Channel	630500	633334	636166
	Frequency	3457.50	3500.01	3542.49
10	Channel	630334	633334	636332
	Frequency	3455.01	3500.01	3544.98

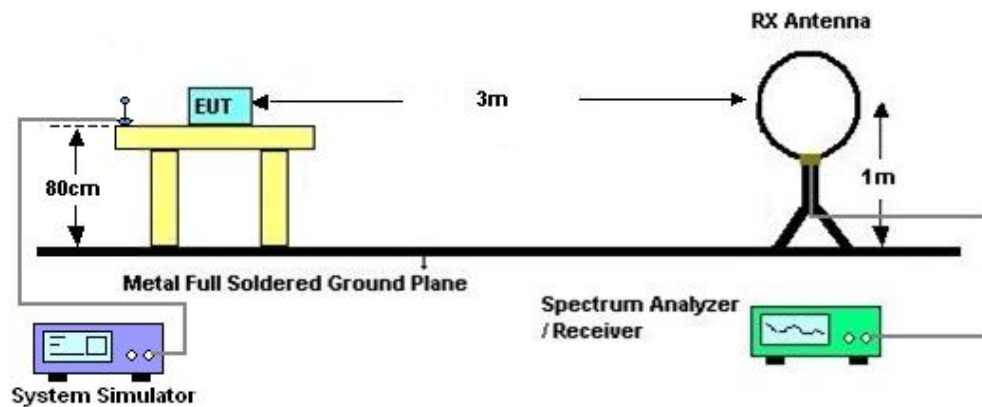
3 Radiated Test Items

3.1 Measuring Instruments

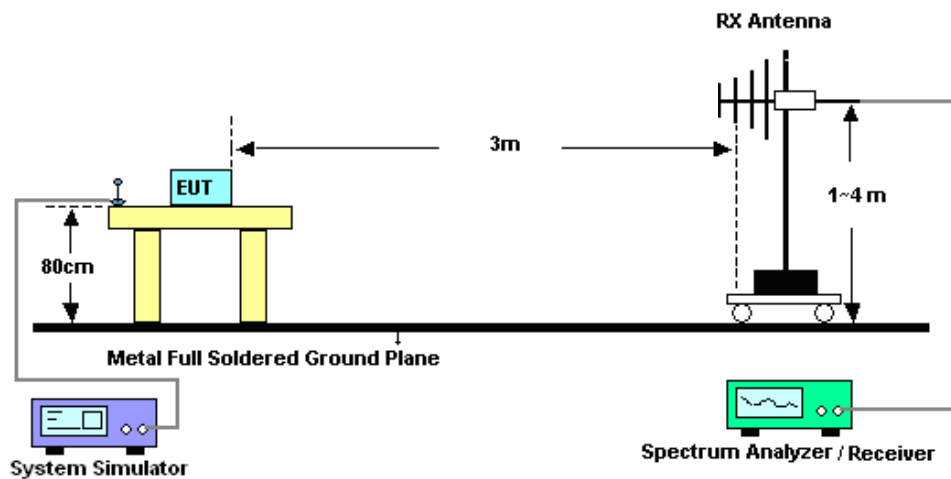
See list of measuring instruments of this test report.

3.2 Test Setup

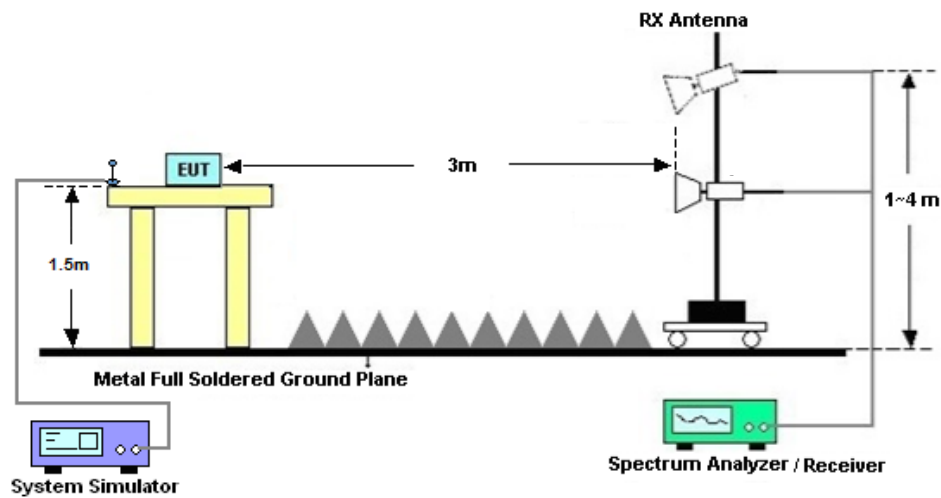
3.2.1 For radiated test below 30MHz



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 B.



3.4 Radiated Spurious Emission

3.4.1 Description of Radiated Spurious Emission

For 5G NR n5, n77, n78

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 $43 + 10\log(P)dB$ below the transmitter power $P(Watts)$
 $= P(W) - [43 + 10\log(P)]\ (dB)$
 $= [30 + 10\log(P)]\ (dBm) - [43 + 10\log(P)]\ (dB)$
 $= -13dBm.$
13. For 5G NR n7, n38, n41:
The limit line is derived from $55 + 10\log(P)dB$ below the transmitter power $P(Watts)$
The limit line is derived from $55 + 10\log(P)dB$ 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
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	Apr. 06, 2022	Jun. 13, 2022	Apr. 05, 2023	Radiation (03CH03-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jun. 22, 2020	Jun. 13, 2022	Jun. 21, 2022	Radiation (03CH03-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz;	Apr. 06, 2022	Jun. 13, 2022	Apr. 05, 2023	Radiation (03CH03-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz~2GHz	Jun. 22, 2020	Jun. 13, 2022	Jun. 21, 2022	Radiation (03CH03-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1355	1GHz~18GHz	Apr. 08, 2022	Jun. 13, 2022	Apr. 07, 2023	Radiation (03CH03-SZ)
Amplifier	Burgeon	BPA-530	102211	0.01Hz ~3000MHz	Oct. 22, 2021	Jun. 13, 2022	Oct. 21, 2022	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Oct. 22, 2021	Jun. 13, 2022	Oct. 21, 2022	Radiation (03CH03-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz~40GHz	Apr. 10, 2022	Jun. 13, 2022	Apr. 09, 2023	Radiation (03CH03-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5GHz	Dec. 29, 2021	Jun. 13, 2022	Dec. 28, 2022	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	Jun. 13, 2022	NCR	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Jun. 13, 2022	NCR	Radiation (03CH03-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Jun. 13, 2022	NCR	Radiation (03CH03-SZ)

NCR: No Calibration Required



5 Uncertainty of Evaluation

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% ($U = 2Uc(y)$)	3.0dB
---	-------

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.6dB
---	-------

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.8dB
---	-------

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



Appendix A. Test Results of Radiated Test

Radiated Spurious Emission

Test Engineer :	Zhang Xu	Temperature :	22~25°C
		Relative Humidity :	48~52%

Note: Pre-scanned harmonic for the different antenna, we choose the worst antenna combination to test.

CA_n41A_n77A / NR 100MHz + NR 100MHz / QPSK / ANT0+4									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
NR n41 Middle	5089.00	-60.86	-25	-35.86	-78.25	-66.42	7.14	12.70	H
	7633.50	-59.21	-25	-34.21	-81.42	-62.51	8.30	11.60	H
	10178.00	-57.37	-25	-32.37	-64.66	-58.89	10.48	12.00	H
	5089.00	-61.45	-25	-36.45	-78.77	-67.01	7.14	12.70	V
	7633.50	-59.39	-25	-34.39	-81.41	-62.69	8.30	11.60	V
	10178.00	-57.66	-25	-32.66	-64.54	-59.18	10.48	12.00	V
NR n77 Middle	7582.90	-59.29	-25	-34.29	-81.44	-62.59	8.30	11.60	H
	11374.35	-56.26	-25	-31.26	-66.04	-57.78	10.48	12.00	H
	15165.80	-54.87	-25	-29.87	-64.71	-56.57	11.80	13.50	H
	7582.90	-59.53	-25	-34.53	-81.47	-62.83	8.30	11.60	V
	11374.35	-56.62	-25	-31.62	-66.2	-58.14	10.48	12.00	V
	15165.80	-54.27	-25	-29.27	-64.42	-55.97	11.80	13.50	V

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

CA_n77A_n41A / NR 100MHz + NR 100MHz / QPSK / ANT4+0									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
NR n77 Middle	7582.90	-59.37	-25	-34.37	-81.52	-62.67	8.30	11.60	H
	11374.35	-57.13	-25	-32.13	-66.91	-58.65	10.48	12.00	H
	15165.80	-54.76	-25	-29.76	-64.60	-56.46	11.80	13.50	H
	7582.90	-59.64	-25	-34.64	-81.58	-62.94	8.30	11.60	V
	11374.35	-57.34	-25	-32.34	-66.92	-58.86	10.48	12.00	V
	15165.80	-54.30	-25	-29.30	-64.45	-56.00	11.80	13.50	V
NR n41 Middle	5089.00	-61.10	-25	-36.10	-78.49	-66.66	7.14	12.70	H
	7633.50	-59.41	-25	-34.41	-81.62	-62.71	8.30	11.60	H
	10178.00	-57.37	-25	-32.37	-64.66	-58.89	10.48	12.00	H
	5089.00	-61.36	-25	-36.36	-78.68	-66.92	7.14	12.70	V
	7633.50	-59.63	-25	-34.63	-81.65	-62.93	8.30	11.60	V
	10178.00	-57.29	-25	-32.29	-64.17	-58.81	10.48	12.00	V

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



CA_n5A_n78A / NR 25MHz + NR 100MHz / QPSK / ANT0+6									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
NR n5 Middle	1654.5	-66.15	-13	-53.15	-72.25	-69.40	4.00	9.40	H
	2481.75	-63.55	-13	-50.55	-73.76	-67.12	4.88	10.60	H
	3309	-61.78	-13	-48.78	-73.90	-66.71	5.52	12.60	H
	1654.5	-66.38	-13	-53.38	-72.33	-69.63	4.00	9.40	V
	2481.75	-63.34	-13	-50.34	-73.91	-66.91	4.88	10.60	V
	3309	-61.88	-13	-48.88	-74.44	-66.81	5.52	12.60	V
NR n78 Middle	7402.50	-42.04	-13	-29.04	-44.39	-45.34	8.30	11.60	H
	11103.75	-56.35	-13	-43.35	-65.02	-57.87	10.48	12.00	H
	14805.00	-54.42	-13	-41.42	-65.94	-56.12	11.80	13.50	H
	7402.50	-48.19	-13	-35.19	-50.59	-51.49	8.30	11.60	V
	11103.75	-57.27	-13	-44.27	-65.64	-58.79	10.48	12.00	V
	14805.00	-54.41	-13	-41.41	-66.12	-56.11	11.80	13.50	V

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

CA_n78A_n5A / NR 100MHz + NR 25MHz / QPSK / ANT6+0									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
NR n78 Middle	7402.50	-41.44	-13	-28.44	-43.79	-44.74	8.30	11.60	H
	11103.75	-56.05	-13	-43.05	-64.72	-57.57	10.48	12.00	H
	14805.00	-52.99	-13	-39.99	-64.51	-54.69	11.80	13.50	H
	7402.50	-46.68	-13	-33.68	-49.08	-49.98	8.30	11.60	V
	11103.75	-56.27	-13	-43.27	-64.64	-57.79	10.48	12.00	V
	14805.00	-53.61	-13	-40.61	-65.32	-55.31	11.80	13.50	V
NR n5 Middle	1654.5	-68.56	-13	-55.56	-74.66	-71.81	4.00	9.40	H
	2481.75	-65.77	-13	-52.77	-75.98	-69.34	4.88	10.60	H
	3309	-64.46	-13	-51.46	-76.58	-69.39	5.52	12.60	H
	1654.5	-68.64	-13	-55.64	-74.59	-71.89	4.00	9.40	V
	2481.75	-65.54	-13	-52.54	-76.11	-69.11	4.88	10.60	V
	3309	-63.70	-13	-50.70	-76.26	-68.63	5.52	12.60	V

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



CA_n7A_n78A / NR 50MHz + NR 100MHz / QPSK / ANT1+6									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
NR n7 Middle	5051.50	-63.43	-25	-38.43	-60.84	-68.99	7.14	12.70	H
	7577.25	-59.70	-25	-34.70	-61.66	-63.00	8.30	11.60	H
	10103.00	-56.65	-25	-31.65	-64.09	-58.17	10.48	12.00	H
	5051.50	-63.19	-25	-38.19	-60.53	-68.75	7.14	12.70	V
	7577.25	-60.06	-25	-35.06	-61.83	-63.36	8.30	11.60	V
	10103.00	-57.08	-25	-32.08	-64.03	-58.60	10.48	12.00	V
NR n78 Middle	7402.50	-59.98	-25	-34.98	-62.33	-63.28	8.30	11.60	H
	11103.75	-55.95	-25	-30.95	-64.62	-57.47	10.48	12.00	H
	14805.00	-53.47	-25	-28.47	-64.99	-55.17	11.80	13.50	H
	7402.50	-60.07	-25	-35.07	-62.47	-63.37	8.30	11.60	V
	11103.75	-56.83	-25	-31.83	-65.2	-58.35	10.48	12.00	V
	14805.00	-52.62	-25	-27.62	-64.33	-54.32	11.80	13.50	V

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

CA_n78A_n7A / NR 100MHz + NR 50MHz / QPSK / ANT6+1									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
NR n78 Middle	7402.50	-60.19	-25	-35.19	-82.84	-63.49	8.30	11.60	H
	11103.75	-56.52	-25	-31.52	-65.19	-58.04	10.48	12.00	H
	14805.00	-53.61	-25	-28.61	-65.13	-55.31	11.80	13.50	H
	7402.25	-60.04	-25	-35.04	-82.74	-63.34	8.30	11.60	V
	11103.75	-56.48	-25	-31.48	-64.85	-58.00	10.48	12.00	V
	14805.00	-53.61	-25	-28.61	-65.32	-55.31	11.80	13.50	V
NR n7 Middle	5051.50	-61.65	-25	-36.65	-79.07	-67.21	7.14	12.70	H
	7577.25	-59.83	-25	-34.83	-81.99	-63.13	8.30	11.60	H
	10103.00	-56.44	-25	-31.44	-63.88	-57.96	10.48	12.00	H
	5051.50	-61.74	-25	-36.74	-79.09	-67.30	7.14	12.70	V
	7577.25	-59.95	-25	-34.95	-81.92	-63.25	8.30	11.60	V
	10103.00	-56.90	-25	-31.90	-63.85	-58.42	10.48	12.00	V

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



CA_n38A_n78A / NR 40MHz + NR 100MHz / QPSK / ANT2+6									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
NR n38 Middle	5185.98	-64.60	-25	-39.60	-62.09	-70.16	7.14	12.70	H
	7778.97	-60.63	-25	-35.63	-63.08	-63.93	8.30	11.60	H
	10371.96	-58.01	-25	-33.01	-64.95	-59.53	10.48	12.00	H
	5185.98	-64.54	-25	-39.54	-61.98	-70.10	7.14	12.70	V
	7778.97	-60.71	-25	-35.71	-63.16	-64.01	8.30	11.60	V
	10371.96	-58.17	-25	-33.17	-64.93	-59.69	10.48	12.00	V
NR n78 Middle	7402.50	-43.09	-25	-18.09	-45.44	-46.39	8.30	11.60	H
	11103.75	-57.05	-25	-32.05	-65.72	-58.57	10.48	12.00	H
	14805.00	-54.59	-25	-29.59	-66.11	-56.29	11.80	13.50	H
	7402.50	-47.73	-25	-22.73	-50.13	-51.03	8.30	11.60	V
	11103.75	-57.04	-25	-32.04	-65.41	-58.56	10.48	12.00	V
	14814.00	-54.15	-25	-29.15	-65.83	-55.85	11.80	13.50	V

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

CA_n78A_n38A / NR 100MHz + NR 40MHz / QPSK / ANT6+2									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
NR n78 Middle	7402.50	-42.69	-25	-17.69	-45.04	-45.99	8.30	11.60	H
	11103.75	-57.19	-25	-32.19	-65.86	-58.71	10.48	12.00	H
	14805.00	-54.21	-25	-29.21	-65.73	-55.91	11.80	13.50	H
	7402.50	-48.64	-25	-23.64	-51.04	-51.94	8.30	11.60	V
	11103.75	-57.32	-25	-32.32	-65.69	-58.84	10.48	12.00	V
	14805.00	-54.99	-25	-29.99	-66.70	-56.69	11.80	13.50	V
NR n38 Middle	5185.98	-65.09	-25	-40.09	-62.58	-70.65	7.14	12.70	H
	7778.97	-60.12	-25	-35.12	-62.57	-63.42	8.30	11.60	H
	10371.96	-58.39	-25	-33.39	-65.33	-59.91	10.48	12.00	H
	5185.98	-65.11	-25	-40.11	-62.55	-70.67	7.14	12.70	V
	7778.96	-59.91	-25	-34.91	-62.36	-63.21	8.30	11.60	V
	10371.96	-58.36	-25	-33.36	-65.12	-59.88	10.48	12.00	V

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



CA_n41A_n78A / NR 100MHz + NR 100MHz / QPSK / ANT0+4									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
NR n41 Middle	5089.00	-60.88	-25	-35.88	-78.27	-66.44	7.14	12.70	H
	7633.50	-59.37	-25	-34.37	-81.58	-62.67	8.30	11.60	H
	10178.00	-57.73	-25	-32.73	-65.02	-59.25	10.48	12.00	H
	5089.00	-60.83	-25	-35.83	-78.15	-66.39	7.14	12.70	V
	7633.50	-59.35	-25	-34.35	-81.37	-62.65	8.30	11.60	V
	10178.00	-58.10	-25	-33.10	-64.98	-59.62	10.48	12.00	V
NR n78 Middle	7402.50	-60.09	-25	-35.09	-82.74	-63.39	8.30	11.60	H
	11103.75	-56.69	-25	-31.69	-65.36	-58.21	10.48	12.00	H
	14805.00	-53.96	-25	-28.96	-65.48	-55.66	11.80	13.50	H
	7402.50	-60.00	-25	-35.00	-82.7	-63.30	8.30	11.60	V
	11103.75	-57.05	-25	-32.05	-65.42	-58.57	10.48	12.00	V
	14805.00	-53.83	-25	-28.83	-65.54	-55.53	11.80	13.50	V

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

CA_n78A_n41A / NR 100MHz + NR 100MHz / QPSK / ANT4+0									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
NR n78 Middle	7402.50	-59.12	-25	-34.12	-81.77	-62.42	8.30	11.60	H
	11103.75	-56.20	-25	-31.20	-64.87	-57.72	10.48	12.00	H
	14805.00	-52.94	-25	-27.94	-64.46	-54.64	11.80	13.50	H
	7402.50	-59.16	-25	-34.16	-81.86	-62.46	8.30	11.60	V
	11103.75	-56.67	-25	-31.67	-65.04	-58.19	10.48	12.00	V
	14805.00	-52.77	-25	-27.77	-64.48	-54.47	11.80	13.50	V
NR n41 Middle	5089.00	-60.57	-25	-35.57	-77.96	-66.13	7.14	12.70	H
	7633.50	-59.50	-25	-34.50	-81.71	-62.80	8.30	11.60	H
	10178.00	-57.06	-25	-32.06	-64.35	-58.58	10.48	12.00	H
	5089.00	-61.07	-25	-36.07	-78.39	-66.63	7.14	12.70	V
	7633.50	-59.80	-25	-34.80	-81.82	-63.10	8.30	11.60	V
	10178.00	-57.23	-25	-32.23	-64.11	-58.75	10.48	12.00	V

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