



FCC RF Test Report

APPLICANT : Veea Inc.
EQUIPMENT : Wireless Edge Server
BRAND NAME : VeeaHub
MODEL NAME : VHC25-5G
FCC ID : 2ARXK-VHC25-5G
STANDARD : 47 CFR Part 27 Subpart O (3700-3980MHz)
CLASSIFICATION : PCS Licensed Transmitter (PCB)
TEST DATE(S) : Jul. 23, 2024 ~ Sep. 11, 2024

This product installed a RF module (Brand Name: Quectel, Model Name: RM520N-GL, FCC ID: XMR2022RM520NGL) during the test, only Conducted Power, EIRP and RSE test items are tested in this report, all the other test results are leveraged from module RF report.

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



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG4522310	Rev. 01	Initial issue of report	Sep. 18, 2024



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
	§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	Occupied Bandwidth	Reporting Only	PASS	1
-	§2.1051 §27.53(l)(2)	Conducted Band Edge Measurement (5G NR n77, n78)	< 43+10log ₁₀ (P[Watts])	PASS	1
-	§2.1051 §27.53(l)(2)	Conducted Spurious Emission (5G NR n77, n78)	< 43+10log ₁₀ (P[Watts])	PASS	1
-	§27.54	Frequency Stability Temperature & Voltage	Within Authorized Band	PASS	1
4.4	§2.1053 §27.53(l)(2)	Radiated Spurious Emission (5G NR n77, n78)	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 17.03 dB at 9222.000 MHz

Remark 1: All test results were leveraged from module RF report which can refer to Report No “SEWA2204000008RG02”.

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/manufacture 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

Veea Inc.

164 E 83rd Street, NEW YORK, United States 10028

1.2 Manufacturer

Veea Inc.

164 E 83rd Street, NEW YORK, United States 10028

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Wireless Edge Server
Brand Name	VeeaHub
Model Name	VHC25-5G
FCC ID	2ARXK-VHC25-5G
SN Code	Radiation: C25DCW00000000006145
HW Version	1.0
SW Version	2.33.1-0.mfg.alpha.4.0.7
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency	5G NR n77: 3700 MHz ~ 3980 MHz 5G NR n78: 3700 MHz ~ 3800 MHz
SCS	30kHz
Bandwidth	n77/n78: 10 / 15 / 20 / 30 / 40 / 50 / 60 / 70 / 80 / 90 / 100MHz
Antenna Gain	<Ant. 0> 5G NR n77: 3.46 dBi 5G NR n78: 3.43 dBi <Ant. 2> 5G NR n77: 3.90 dBi 5G NR n78: 3.90 dBi
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM

Remark:

1. The maximum EIRP is calculated from max output power and max antenna gain, only the maximum EIRP is shown in the report, 5G NR n77/n78 for Antenna 2.
2. 5G NR n77/n78 support UL MIMO mode for Ant(2+0).
3. 5G NR n77/n78 support Power class 2.
4. 5G NR n77/n78 UL_MIMO mode supports CP-OFDM Modulation only, the MIMO mode is completely uncorrelated, so the directional gain is selected the maximum gain among all antennas.

5. 5G NR n77/n78 support SA and NSA mode.
6. 5G NR Band n77 overlaps the entire frequency range of Band n78, and n77 power > n78 power, therefore the all test results of n77 provided in this report cover n78.
7. All the supported EN-DC combinations are verified conducted power, only the EN-DC combination with highest power are shown in the report.
8. The EN-DC mode combination could be referred to the product spec.

1.5 Modification of EUT

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

1.6 Maximum EIRP and Emission Designator

5G NR n77 SA		PI/2 BPSK / QPSK	16QAM / 64QAM / 256QAM
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Maximum EIRP(W)
10	3705.00 ~ 3975.00	0.5559	0.4395
15	3705.52 ~ 3972.48	0.5623	0.4603
20	3710.01 ~ 3969.99	0.5636	0.4603
30	3715.02 ~ 3964.98	0.5702	0.4699
40	3720.00 ~ 3960.00	0.5821	0.4667
50	3725.01 ~ 3954.99	0.5623	0.4560
60	3730.02 ~ 3949.98	0.5248	0.4285
70	3735.00 ~ 3945.00	0.5309	0.4276
80	3740.01 ~ 3939.99	0.5395	0.4345
90	3745.02 ~ 3934.98	0.5370	0.4385
100	3750.00 ~ 3930.00	0.6138	0.4943



5G NR n78 SA		PI/2 BPSK / QPSK	16QAM / 64QAM / 256QAM
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Maximum EIRP(W)
10	3705.00 ~ 3795.00	0.5521	0.4385
15	3707.52 ~ 3792.48	0.5662	0.4539
20	3710.01 ~ 3789.99	0.5559	0.4571
30	3715.02 ~ 3784.98	0.5754	0.4677
40	3720.00 ~ 3780.00	0.5984	0.4732
50	3725.01 ~ 3774.99	0.5358	0.4345
60	3730.02 ~ 3769.98	0.5284	0.4256
70	3735.00 ~ 3765.00	0.5248	0.4227
80	3740.01 ~ 3759.99	0.5370	0.4159
90	3745.02 ~ 3754.98	0.5236	0.4207
100	3750.00 ~ 3750.00	0.5998	0.4710

5G NR n77 UL MIMO		QPSK	16QAM / 64QAM / 256QAM
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Maximum EIRP(W)
10	3705.00 ~ 3975.00	0.6180	0.5082
15	3705.52 ~ 3972.48	0.6561	0.5284
20	3710.01 ~ 3969.99	0.6486	0.5236
30	3715.02 ~ 3964.98	0.6714	0.5370
40	3720.00 ~ 3960.00	0.6622	0.5408
50	3725.01 ~ 3954.99	0.6194	0.5082
60	3730.02 ~ 3949.98	0.6223	0.4864
70	3735.00 ~ 3945.00	0.5929	0.4875
80	3740.01 ~ 3939.99	0.5998	0.4808
90	3745.02 ~ 3934.98	0.6152	0.4943
100	3750.00 ~ 3930.00	0.6855	0.5534



5G NR n78 UL MIMO		QPSK	16QAM / 64QAM / 256QAM
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Maximum EIRP(W)
10	3705.00 ~ 3795.00	0.6138	0.4898
15	3707.52 ~ 3792.48	0.6397	0.5093
20	3710.01 ~ 3789.99	0.6383	0.5248
30	3715.02 ~ 3784.98	0.6486	0.5297
40	3720.00 ~ 3780.00	0.6699	0.5420
50	3725.01 ~ 3774.99	0.6252	0.4898
60	3730.02 ~ 3769.98	0.5970	0.4864
70	3735.00 ~ 3765.00	0.6152	0.4920
80	3740.01 ~ 3759.99	0.6053	0.4898
90	3745.02 ~ 3754.98	0.6166	0.4875
100	3750.00 ~ 3750.00	0.6839	0.5333

Note:

1. 5G NR Band n77 overlaps the entire frequency range of Band n78, and n77 power > n78 power, therefore the all test results of n77 provided in this report cover n78.
2. All modulations have been tested, and only the worst test results of PSK & QAM are shown in the report.

1.7 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	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	TH01-SZ	CN1256	421272

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 518103 People's Republic of China TEL: +86-755-86066985		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH03-SZ	CN1256	421272

1.8 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH03-SZ	AUDIX	E3	6.2009-8-24a1

1.9 Applicable Standards

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

- ♦ 47 CFR Part 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.

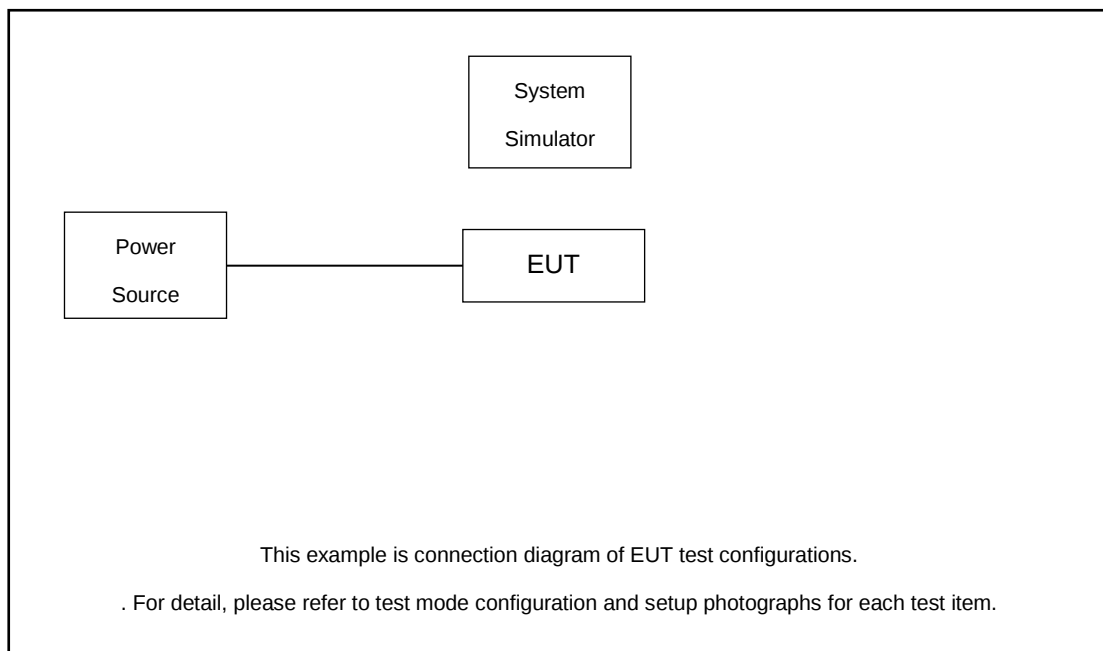
For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane) were recorded in this report.

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.

Test Cases	Band	Bandwidth (MHz)	Modulation	RB #	Test Channel
		eg. 5M, 10M, 15M, 20M	eg. PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	1RB, Partial RB, Full RB	L/M/H
Max. Output Power	5G n77	10M, 15M, 20M, 30M, 40M, 50M, 60M, 70M, 80M, 90M, 100M	All Modulations	1RB, Full RB	L, M, H
	5G n78	10M, 15M, 20M, 30M, 40M, 50M, 60M, 70M, 80M, 90M, 100M	All Modulations	1RB, Full RB	L, M, H
E.I.R.P	5G n77	10M, 15M, 20M, 30M, 40M, 50M, 60M, 70M, 80M, 90M, 100M	All Modulations	1RB, Full RB	L, M, H
	5G n78	10M, 15M, 20M, 30M, 40M, 50M, 60M, 70M, 80M, 90M, 100M	All Modulations	1RB, Full RB	L, M, H
Radiated Spurious Emission	5G n77	Worst case from maximum power			M

Note: 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 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
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
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

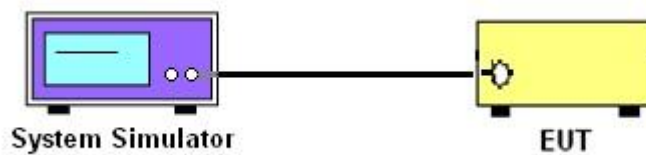
3 Conducted Test Items

3.1 Measuring Instruments

See list of measuring instruments of this test report.

3.2 Test Setup

3.2.1 Conducted Output Power



3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power and EIRP

3.4.1 Description of the Conducted Output Power Measurement and EIRP Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The EIRP of mobile transmitters must not exceed 1 Watts for 5G NR n77, n78.

According to KDB 412172 D01 Power Approach,

$EIRP = P_T + G_T - L_C$, $ERP = EIRP - 2.15$, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.4.2 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, and highest channels for each band and different modulation.
5. Measure and record the power level from the system simulator.

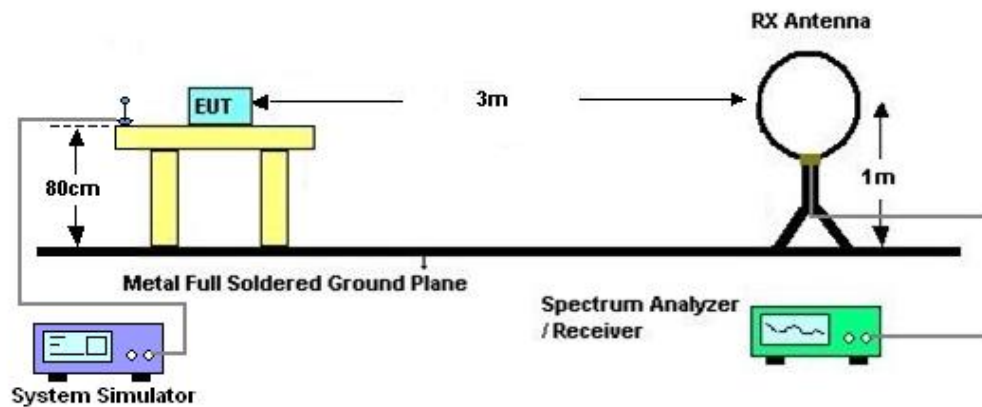
4 Radiated Test Items

4.1 Measuring Instruments

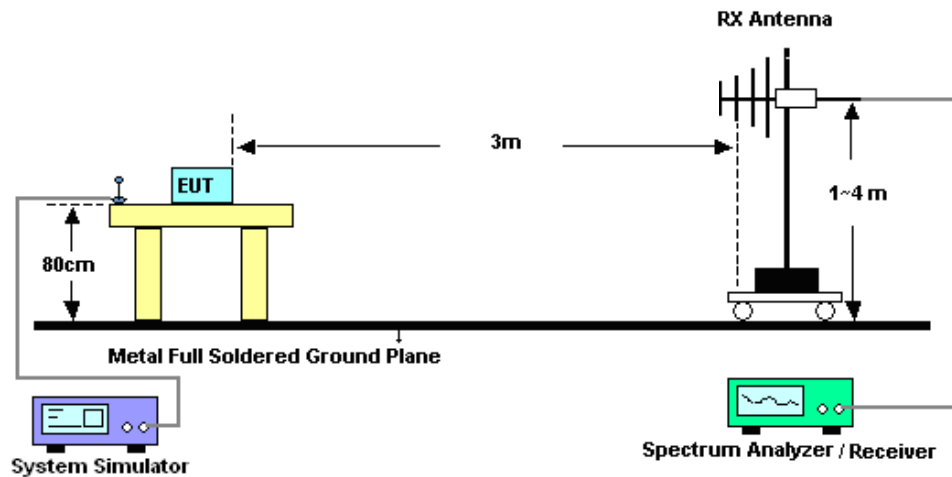
See list of measuring instruments of this test report.

4.2 Test Setup

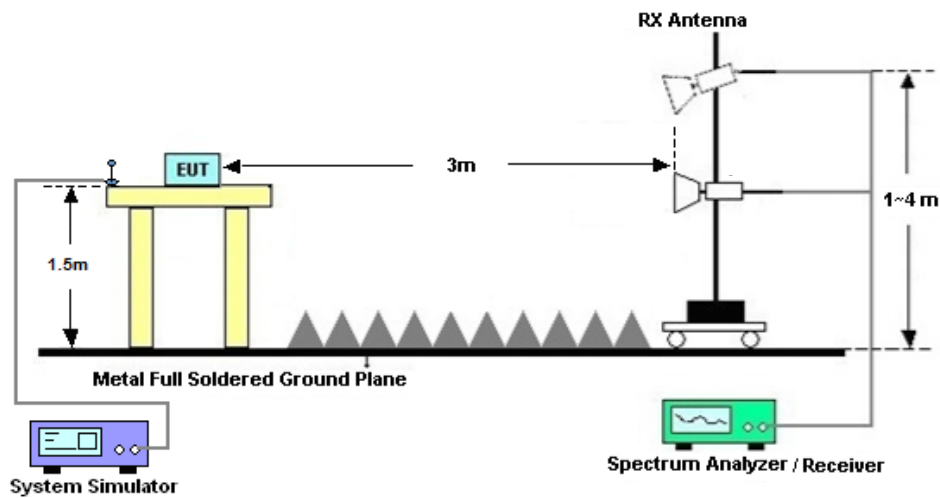
4.2.1 For radiated test below 30MHz



4.2.2 For radiated test from 30MHz to 1GHz



4.2.3 For radiated test above 1GHz



4.3 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.

4.4 Radiated Spurious Emission

4.4.1 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.

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

4.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
1. 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.
2. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
5. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
9. $EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$
10. $ERP \text{ (dBm)} = EIRP - 2.15$
11. 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)
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
 $= -13\text{dBm}.$



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 09, 2024	Sep. 11, 2024	Apr. 08, 2025	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04 265	60.06.020.007 7	0.4GHz~26.5GHz	Dec. 25, 2023	Sep. 11, 2024	Dec. 24, 2024	Conducted (TH01-SZ)
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	Apr. 09, 2024	Jul. 23, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
Loop Antenna	R&S	HFH2-Z2E	101141	9kHz~30MHz	Dec. 29, 2023	Jul. 23, 2024	Dec. 28, 2024	Radiation (03CH03-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz;	Apr. 09, 2024	Jul. 23, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz-2GHz	Aug. 20, 2023	Jul. 23, 2024	Aug. 19, 2025	Radiation (03CH03-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1355	1GHz~18GHz	Apr. 09, 2024	Jul. 23, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
Amplifier	Burgeon	BPA-530	102211	0.01Hz ~3000MHz	Oct. 18, 2023	Jul. 23, 2024	Oct. 17, 2024	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	TTA1840-35 -HG	1871923	18GHz~40GHz	Jul. 03, 2024	Jul. 23, 2024	Jul. 02, 2025	Radiation (03CH03-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 09, 2024	Jul. 23, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5GHz	Dec. 27, 2023	Jul. 23, 2024	Dec. 26, 2024	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	616010002729	N/A	Oct. 18, 2023	Jul. 23, 2024	Oct. 17, 2024	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Jul. 23, 2024	NCR	Radiation (03CH03-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Jul. 23, 2024	NCR	Radiation (03CH03-SZ)

NCR: No Calibration Required

6 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 Conducted Measurement

Test Item	Uncertainty
Conducted Power	±1.34 dB

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	±3.0 dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	±3.6 dB
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

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



Appendix A. Test Results of Conducted Test

Test Engineer :	Khan Zhen	Temperature :	22~23°C
		Relative Humidity :	40~42%

5G NR N77

Transmitter Conducted Output Power And EIRP, (GT - LC)=3.90db

NR Band	SCS	BandWidth	Arfcn	Freq(MHz)	Modulation	RB	Conducted Power(dBm)	EIRP(dBm)	EIRP(W)
77	30	10	647000	3705	DFT-s-OFDM QPSK	1@1	23.34	27.24	0.5297
77	30	10	647000	3705	DFT-s-OFDM 16 QAM	1@1	22.38	26.28	0.4246
77	30	10	656000	3840	DFT-s-OFDM QPSK	1@1	23.55	27.45	0.5559
77	30	10	656000	3840	DFT-s-OFDM 16 QAM	1@1	22.53	26.43	0.4395
77	30	10	665000	3975	DFT-s-OFDM QPSK	1@1	23.39	27.29	0.5358
77	30	10	665000	3975	DFT-s-OFDM 16 QAM	1@1	22.47	26.37	0.4335
77	30	15	647168	3707.52	DFT-s-OFDM QPSK	1@1	23.53	27.43	0.5534
77	30	15	647168	3707.52	DFT-s-OFDM 16 QAM	1@1	22.61	26.51	0.4477
77	30	15	656000	3840	DFT-s-OFDM QPSK	1@1	23.6	27.5	0.5623
77	30	15	656000	3840	DFT-s-OFDM 16 QAM	1@1	22.66	26.56	0.4529
77	30	15	664832	3972.48	DFT-s-OFDM QPSK	1@1	23.53	27.43	0.5534
77	30	15	664832	3972.48	DFT-s-OFDM 16 QAM	1@1	22.73	26.63	0.4603
77	30	20	647334	3710.01	DFT-s-OFDM QPSK	1@1	23.55	27.45	0.5559
77	30	20	647334	3710.01	DFT-s-OFDM 16 QAM	1@1	22.54	26.44	0.4406
77	30	20	656000	3840	DFT-s-OFDM QPSK	1@1	23.6	27.5	0.5623
77	30	20	656000	3840	DFT-s-OFDM 16 QAM	1@1	22.66	26.56	0.4529
77	30	20	664666	3969.99	DFT-s-OFDM QPSK	1@1	23.61	27.51	0.5636
77	30	20	664666	3969.99	DFT-s-OFDM 16 QAM	1@1	22.73	26.63	0.4603
77	30	30	647668	3715.02	DFT-s-OFDM QPSK	1@1	23.47	27.37	0.5458
77	30	30	647668	3715.02	DFT-s-OFDM 16 QAM	1@1	22.57	26.47	0.4436
77	30	30	656000	3840	DFT-s-OFDM QPSK	1@1	23.64	27.54	0.5675
77	30	30	656000	3840	DFT-s-OFDM 16 QAM	1@1	22.78	26.68	0.4656
77	30	30	664332	3964.98	DFT-s-OFDM QPSK	1@1	23.66	27.56	0.5702
77	30	30	664332	3964.98	DFT-s-OFDM 16 QAM	1@1	22.82	26.72	0.4699
77	30	40	648000	3720	DFT-s-OFDM QPSK	1@1	23.75	27.65	0.5821
77	30	40	648000	3720	DFT-s-OFDM 16 QAM	1@1	22.79	26.69	0.4667
77	30	40	656000	3840	DFT-s-OFDM QPSK	1@1	23.68	27.58	0.5728
77	30	40	656000	3840	DFT-s-OFDM 16 QAM	1@1	22.78	26.68	0.4656
77	30	40	664000	3960	DFT-s-OFDM QPSK	1@1	23.74	27.64	0.5808
77	30	40	664000	3960	DFT-s-OFDM 16 QAM	1@1	22.79	26.69	0.4667
77	30	50	648334	3725.01	DFT-s-OFDM QPSK	1@1	23.24	27.14	0.5176
77	30	50	648334	3725.01	DFT-s-OFDM 16 QAM	1@1	22.32	26.22	0.4188
77	30	50	656000	3840	DFT-s-OFDM QPSK	1@1	23.3	27.2	0.5248
77	30	50	656000	3840	DFT-s-OFDM 16 QAM	1@1	22.43	26.33	0.4295
77	30	50	663666	3954.99	DFT-s-OFDM QPSK	1@1	23.6	27.5	0.5623
77	30	50	663666	3954.99	DFT-s-OFDM 16 QAM	1@1	22.69	26.59	0.4560
77	30	60	648668	3730.02	DFT-s-OFDM QPSK	1@1	23.25	27.15	0.5188
77	30	60	648668	3730.02	DFT-s-OFDM 16 QAM	1@1	22.37	26.27	0.4236



77	30	60	656000	3840	DFT-s-OFDM QPSK	1@1	23.29	27.19	0.5236
77	30	60	656000	3840	DFT-s-OFDM 16 QAM	1@1	22.42	26.32	0.4285
77	30	60	663332	3949.98	DFT-s-OFDM QPSK	1@1	23.3	27.2	0.5248
77	30	60	663332	3949.98	DFT-s-OFDM 16 QAM	1@1	22.41	26.31	0.4276
77	30	70	649000	3735	DFT-s-OFDM QPSK	1@1	23.22	27.12	0.5152
77	30	70	649000	3735	DFT-s-OFDM 16 QAM	1@1	22.25	26.15	0.4121
77	30	70	656000	3840	DFT-s-OFDM QPSK	1@1	23.24	27.14	0.5176
77	30	70	656000	3840	DFT-s-OFDM 16 QAM	1@1	22.31	26.21	0.4178
77	30	70	663000	3945	DFT-s-OFDM QPSK	1@1	23.35	27.25	0.5309
77	30	70	663000	3945	DFT-s-OFDM 16 QAM	1@1	22.41	26.31	0.4276
77	30	80	649334	3740.01	DFT-s-OFDM QPSK	1@1	23.17	27.07	0.5093
77	30	80	649334	3740.01	DFT-s-OFDM 16 QAM	1@1	22.28	26.18	0.4150
77	30	80	656000	3840	DFT-s-OFDM QPSK	1@1	23.23	27.13	0.5164
77	30	80	656000	3840	DFT-s-OFDM 16 QAM	1@1	22.26	26.16	0.4130
77	30	80	662666	3939.99	DFT-s-OFDM QPSK	1@1	23.42	27.32	0.5395
77	30	80	662666	3939.99	DFT-s-OFDM 16 QAM	1@1	22.48	26.38	0.4345
77	30	90	649668	3745.02	DFT-s-OFDM QPSK	1@1	23.14	27.04	0.5058
77	30	90	649668	3745.02	DFT-s-OFDM 16 QAM	1@1	22.18	26.08	0.4055
77	30	90	656000	3840	DFT-s-OFDM QPSK	1@1	23.28	27.18	0.5224
77	30	90	656000	3840	DFT-s-OFDM 16 QAM	1@1	22.29	26.19	0.4159
77	30	90	662332	3934.98	DFT-s-OFDM QPSK	1@1	23.4	27.3	0.5370
77	30	90	662332	3934.98	DFT-s-OFDM 16 QAM	1@1	22.52	26.42	0.4385
77	30	100	650000	3750	DFT-s-OFDM PI/2 BPSK	135@67	23.74	27.64	0.5808
77	30	100	650000	3750	DFT-s-OFDM PI/2 BPSK	1@1	23.68	27.58	0.5728
77	30	100	650000	3750	DFT-s-OFDM PI/2 BPSK	1@271	23.68	27.58	0.5728
77	30	100	650000	3750	DFT-s-OFDM QPSK	135@67	23.74	27.64	0.5808
77	30	100	650000	3750	DFT-s-OFDM QPSK	1@1	23.58	27.48	0.5598
77	30	100	650000	3750	DFT-s-OFDM QPSK	1@271	23.65	27.55	0.5689
77	30	100	650000	3750	DFT-s-OFDM 16 QAM	135@67	22.74	26.64	0.4613
77	30	100	650000	3750	DFT-s-OFDM 16 QAM	1@1	22.78	26.68	0.4656
77	30	100	650000	3750	DFT-s-OFDM 16 QAM	1@271	22.82	26.72	0.4699
77	30	100	650000	3750	DFT-s-OFDM 64 QAM	135@67	21.25	25.15	0.3273
77	30	100	650000	3750	DFT-s-OFDM 64 QAM	1@1	21.25	25.15	0.3273
77	30	100	650000	3750	DFT-s-OFDM 64 QAM	1@271	21.18	25.08	0.3221
77	30	100	650000	3750	DFT-s-OFDM 256 QAM	135@67	19.31	23.21	0.2094
77	30	100	650000	3750	DFT-s-OFDM 256 QAM	1@1	19.13	23.03	0.2009
77	30	100	650000	3750	DFT-s-OFDM 256 QAM	1@271	19.18	23.08	0.2032
77	30	100	650000	3750	CP-OFDM QPSK	137@68	22.23	26.13	0.4102
77	30	100	650000	3750	CP-OFDM QPSK	1@1	22.16	26.06	0.4036
77	30	100	650000	3750	CP-OFDM QPSK	1@271	22.23	26.13	0.4102
77	30	100	656000	3840	DFT-s-OFDM PI/2 BPSK	135@67	23.88	27.78	0.5998
77	30	100	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	23.78	27.68	0.5861
77	30	100	656000	3840	DFT-s-OFDM PI/2 BPSK	1@271	23.98	27.88	0.6138
77	30	100	656000	3840	DFT-s-OFDM QPSK	135@67	23.86	27.76	0.5970
77	30	100	656000	3840	DFT-s-OFDM QPSK	1@1	23.75	27.65	0.5821
77	30	100	656000	3840	DFT-s-OFDM QPSK	1@271	23.96	27.86	0.6109
77	30	100	656000	3840	DFT-s-OFDM 16 QAM	135@67	22.87	26.77	0.4753



77	30	100	656000	3840	DFT-s-OFDM 16 QAM	1@1	22.88	26.78	0.4764
77	30	100	656000	3840	DFT-s-OFDM 16 QAM	1@271	23.04	26.94	0.4943
77	30	100	656000	3840	DFT-s-OFDM 64 QAM	135@67	21.37	25.27	0.3365
77	30	100	656000	3840	DFT-s-OFDM 64 QAM	1@1	21.29	25.19	0.3304
77	30	100	656000	3840	DFT-s-OFDM 64 QAM	1@271	21.56	25.46	0.3516
77	30	100	656000	3840	DFT-s-OFDM 256 QAM	135@67	19.39	23.29	0.2133
77	30	100	656000	3840	DFT-s-OFDM 256 QAM	1@1	19.17	23.07	0.2028
77	30	100	656000	3840	DFT-s-OFDM 256 QAM	1@271	19.35	23.25	0.2113
77	30	100	656000	3840	CP-OFDM QPSK	137@68	22.32	26.22	0.4188
77	30	100	656000	3840	CP-OFDM QPSK	1@1	22.26	26.16	0.4130
77	30	100	656000	3840	CP-OFDM QPSK	1@271	22.45	26.35	0.4315
77	30	100	662000	3930	DFT-s-OFDM PI/2 BPSK	135@67	23.75	27.65	0.5821
77	30	100	662000	3930	DFT-s-OFDM PI/2 BPSK	1@1	23.97	27.87	0.6124
77	30	100	662000	3930	DFT-s-OFDM PI/2 BPSK	1@271	23.57	27.47	0.5585
77	30	100	662000	3930	DFT-s-OFDM QPSK	135@67	23.74	27.64	0.5808
77	30	100	662000	3930	DFT-s-OFDM QPSK	1@1	23.93	27.83	0.6067
77	30	100	662000	3930	DFT-s-OFDM QPSK	1@271	23.57	27.47	0.5585
77	30	100	662000	3930	DFT-s-OFDM 16 QAM	135@67	22.74	26.64	0.4613
77	30	100	662000	3930	DFT-s-OFDM 16 QAM	1@1	23.04	26.94	0.4943
77	30	100	662000	3930	DFT-s-OFDM 16 QAM	1@271	22.68	26.58	0.4550
77	30	100	662000	3930	DFT-s-OFDM 64 QAM	135@67	21.26	25.16	0.3281
77	30	100	662000	3930	DFT-s-OFDM 64 QAM	1@1	21.56	25.46	0.3516
77	30	100	662000	3930	DFT-s-OFDM 64 QAM	1@271	21.16	25.06	0.3206
77	30	100	662000	3930	DFT-s-OFDM 256 QAM	135@67	19.29	23.19	0.2084
77	30	100	662000	3930	DFT-s-OFDM 256 QAM	1@1	19.36	23.26	0.2118
77	30	100	662000	3930	DFT-s-OFDM 256 QAM	1@271	18.98	22.88	0.1941
77	30	100	662000	3930	CP-OFDM QPSK	137@68	22.24	26.14	0.4111
77	30	100	662000	3930	CP-OFDM QPSK	1@1	22.39	26.29	0.4256
77	30	100	662000	3930	CP-OFDM QPSK	1@271	22.02	25.92	0.3908



5GNR N77 UL MIMO

Transmitter Conducted Output Power And EIRP, (GT - LC)=3.90db

NR Band	SCS	BandWidth	Arfcn	Freq(MHz)	Modulation	RB	ANT2 Power(dBm)	ANT0 Power(dBm)	Conducted Power(dBm)	EIRP(dBm)	EIRP(W)
77	30	10	647000	3705	CP-OFDM QPSK	1@1	20.75	21.06	23.92	27.82	0.6053
77	30	10	647000	3705	CP-OFDM 16 QAM	1@1	19.89	20.11	23.01	26.91	0.4909
77	30	10	656000	3840	CP-OFDM QPSK	1@1	20.97	21.02	24.01	27.91	0.6180
77	30	10	656000	3840	CP-OFDM 16 QAM	1@1	20.01	20.28	23.16	27.06	0.5082
77	30	10	665000	3975	CP-OFDM QPSK	1@1	20.9	20.88	23.90	27.8	0.6026
77	30	10	665000	3975	CP-OFDM 16 QAM	1@1	20.07	19.76	22.93	26.83	0.4819
77	30	15	647168	3707.52	CP-OFDM QPSK	1@1	21	21.15	24.09	27.99	0.6295
77	30	15	647168	3707.52	CP-OFDM 16 QAM	1@1	20.13	20.18	23.17	27.07	0.5093
77	30	15	656000	3840	CP-OFDM QPSK	1@1	21.17	21.34	24.27	28.17	0.6561
77	30	15	656000	3840	CP-OFDM 16 QAM	1@1	20.24	20.38	23.32	27.22	0.5272
77	30	15	664832	3972.48	CP-OFDM QPSK	1@1	21.26	21.19	24.24	28.14	0.6516
77	30	15	664832	3972.48	CP-OFDM 16 QAM	1@1	20.41	20.22	23.33	27.23	0.5284
77	30	20	647334	3710.01	CP-OFDM QPSK	1@1	21.09	21.17	24.14	28.04	0.6368
77	30	20	647334	3710.01	CP-OFDM 16 QAM	1@1	20.2	20.26	23.24	27.14	0.5176
77	30	20	656000	3840	CP-OFDM QPSK	1@1	21.13	21.28	24.22	28.12	0.6486
77	30	20	656000	3840	CP-OFDM 16 QAM	1@1	20.05	20.39	23.23	27.13	0.5164
77	30	20	664666	3969.99	CP-OFDM QPSK	1@1	21.21	21.04	24.14	28.04	0.6368
77	30	20	664666	3969.99	CP-OFDM 16 QAM	1@1	20.27	20.28	23.29	27.19	0.5236
77	30	30	647668	3715.02	CP-OFDM QPSK	1@1	21.02	21.07	24.06	27.96	0.6252
77	30	30	647668	3715.02	CP-OFDM 16 QAM	1@1	20.09	20.27	23.19	27.09	0.5117
77	30	30	656000	3840	CP-OFDM QPSK	1@1	20.98	21.14	24.07	27.97	0.6266
77	30	30	656000	3840	CP-OFDM 16 QAM	1@1	20.31	20.31	23.32	27.22	0.5272
77	30	30	664332	3964.98	CP-OFDM QPSK	1@1	21.44	21.28	24.37	28.27	0.6714
77	30	30	664332	3964.98	CP-OFDM 16 QAM	1@1	20.45	20.32	23.40	27.3	0.5370
77	30	40	648000	3720	CP-OFDM QPSK	1@1	21.24	21.36	24.31	28.21	0.6622
77	30	40	648000	3720	CP-OFDM 16 QAM	1@1	20.41	20.43	23.43	27.33	0.5408
77	30	40	656000	3840	CP-OFDM QPSK	1@1	21.15	21.31	24.24	28.14	0.6516
77	30	40	656000	3840	CP-OFDM 16 QAM	1@1	20.37	20.41	23.40	27.3	0.5370
77	30	40	664000	3960	CP-OFDM QPSK	1@1	21.4	21.04	24.23	28.13	0.6501
77	30	40	664000	3960	CP-OFDM 16 QAM	1@1	20.49	20.05	23.29	27.19	0.5236
77	30	50	648334	3725.01	CP-OFDM QPSK	1@1	20.8	21.1	23.96	27.86	0.6109
77	30	50	648334	3725.01	CP-OFDM 16 QAM	1@1	19.82	20.04	22.94	26.84	0.4831
77	30	50	656000	3840	CP-OFDM QPSK	1@1	20.91	21.06	24.00	27.9	0.6166
77	30	50	656000	3840	CP-OFDM 16 QAM	1@1	20.01	20.28	23.16	27.06	0.5082
77	30	50	663666	3954.99	CP-OFDM QPSK	1@1	21.28	20.73	24.02	27.92	0.6194
77	30	50	663666	3954.99	CP-OFDM 16 QAM	1@1	20.29	19.83	23.08	26.98	0.4989
77	30	60	648668	3730.02	CP-OFDM QPSK	1@1	20.96	21.09	24.04	27.94	0.6223
77	30	60	648668	3730.02	CP-OFDM 16 QAM	1@1	19.89	19.89	22.90	26.8	0.4786
77	30	60	656000	3840	CP-OFDM QPSK	1@1	20.91	20.98	23.96	27.86	0.6109
77	30	60	656000	3840	CP-OFDM 16 QAM	1@1	19.89	20.02	22.97	26.87	0.4864
77	30	60	663332	3949.98	CP-OFDM QPSK	1@1	21.04	20.55	23.81	27.71	0.5902



77	30	60	663332	3949.98	CP-OFDM 16 QAM	1@1	19.95	19.52	22.75	26.65	0.4624
77	30	70	649000	3735	CP-OFDM QPSK	1@1	20.74	20.87	23.82	27.72	0.5916
77	30	70	649000	3735	CP-OFDM 16 QAM	1@1	19.79	19.98	22.90	26.8	0.4786
77	30	70	656000	3840	CP-OFDM QPSK	1@1	20.74	20.89	23.83	27.73	0.5929
77	30	70	656000	3840	CP-OFDM 16 QAM	1@1	19.86	20.07	22.98	26.88	0.4875
77	30	70	663000	3945	CP-OFDM QPSK	1@1	21.04	20.55	23.81	27.71	0.5902
77	30	70	663000	3945	CP-OFDM 16 QAM	1@1	20.01	19.49	22.77	26.67	0.4645
77	30	80	649334	3740.01	CP-OFDM QPSK	1@1	20.82	20.79	23.82	27.72	0.5916
77	30	80	649334	3740.01	CP-OFDM 16 QAM	1@1	19.66	19.94	22.81	26.71	0.4688
77	30	80	656000	3840	CP-OFDM QPSK	1@1	20.75	20.99	23.88	27.78	0.5998
77	30	80	656000	3840	CP-OFDM 16 QAM	1@1	19.93	19.89	22.92	26.82	0.4808
77	30	80	662666	3939.99	CP-OFDM QPSK	1@1	21.02	20.7	23.87	27.77	0.5984
77	30	80	662666	3939.99	CP-OFDM 16 QAM	1@1	20.09	19.72	22.92	26.82	0.4808
77	30	90	649668	3745.02	CP-OFDM QPSK	1@1	20.8	20.78	23.80	27.7	0.5888
77	30	90	649668	3745.02	CP-OFDM 16 QAM	1@1	19.85	19.92	22.90	26.8	0.4786
77	30	90	656000	3840	CP-OFDM QPSK	1@1	20.79	20.92	23.87	27.77	0.5984
77	30	90	656000	3840	CP-OFDM 16 QAM	1@1	19.9	19.87	22.90	26.8	0.4786
77	30	90	662332	3934.98	CP-OFDM QPSK	1@1	21.02	20.94	23.99	27.89	0.6152
77	30	90	662332	3934.98	CP-OFDM 16 QAM	1@1	20.21	19.85	23.04	26.94	0.4943
77	30	100	650000	3750	CP-OFDM QPSK	137@68	21.19	21.26	24.24	28.14	0.6516
77	30	100	650000	3750	CP-OFDM QPSK	1@1	21.22	21.33	24.29	28.19	0.6592
77	30	100	650000	3750	CP-OFDM QPSK	1@271	21.11	21.42	24.28	28.18	0.6577
77	30	100	650000	3750	CP-OFDM 16 QAM	137@68	20.26	20.29	23.29	27.19	0.5236
77	30	100	650000	3750	CP-OFDM 16 QAM	1@1	20.14	20.3	23.23	27.13	0.5164
77	30	100	650000	3750	CP-OFDM 16 QAM	1@271	20.08	20.57	23.34	27.24	0.5297
77	30	100	650000	3750	CP-OFDM 64 QAM	137@68	18.69	18.77	21.74	25.64	0.3664
77	30	100	650000	3750	CP-OFDM 64 QAM	1@1	18.73	18.87	21.81	25.71	0.3724
77	30	100	650000	3750	CP-OFDM 64 QAM	1@271	18.58	19	21.81	25.71	0.3724
77	30	100	650000	3750	CP-OFDM 256 QAM	137@68	16.8	16.91	19.87	23.77	0.2382
77	30	100	650000	3750	CP-OFDM 256 QAM	1@1	16.51	16.78	19.66	23.56	0.2270
77	30	100	650000	3750	CP-OFDM 256 QAM	1@271	16.5	16.94	19.74	23.64	0.2312
77	30	100	656000	3840	CP-OFDM QPSK	137@68	21.46	21.44	24.46	28.36	0.6855
77	30	100	656000	3840	CP-OFDM QPSK	1@1	21.08	21.27	24.19	28.09	0.6442
77	30	100	656000	3840	CP-OFDM QPSK	1@271	21.38	21.2	24.30	28.2	0.6607
77	30	100	656000	3840	CP-OFDM 16 QAM	137@68	20.29	20.73	23.53	27.43	0.5534
77	30	100	656000	3840	CP-OFDM 16 QAM	1@1	20.08	20.39	23.25	27.15	0.5188
77	30	100	656000	3840	CP-OFDM 16 QAM	1@271	20.51	20.41	23.47	27.37	0.5458
77	30	100	656000	3840	CP-OFDM 64 QAM	137@68	18.7	19.1	21.91	25.81	0.3811
77	30	100	656000	3840	CP-OFDM 64 QAM	1@1	18.76	18.86	21.82	25.72	0.3733
77	30	100	656000	3840	CP-OFDM 64 QAM	1@271	19.07	18.88	21.99	25.89	0.3882
77	30	100	656000	3840	CP-OFDM 256 QAM	137@68	16.69	17.16	19.94	23.84	0.2421
77	30	100	656000	3840	CP-OFDM 256 QAM	1@1	16.53	16.67	19.61	23.51	0.2244
77	30	100	656000	3840	CP-OFDM 256 QAM	1@271	16.79	16.69	19.75	23.65	0.2317
77	30	100	662000	3930	CP-OFDM PI/2 BPSK	137@68	21.32	20.96	24.15	28.05	0.6383
77	30	100	662000	3930	CP-OFDM PI/2 BPSK	1@1	21.29	21.33	24.32	28.22	0.6637



77	30	100	662000	3930	CP-OFDM PI/2 BPSK	1@271	20.92	21.32	24.13	28.03	0.6353
77	30	100	662000	3930	CP-OFDM QPSK	137@68	21.15	21.22	24.20	28.1	0.6457
77	30	100	662000	3930	CP-OFDM QPSK	1@1	21.3	21.28	24.30	28.2	0.6607
77	30	100	662000	3930	CP-OFDM QPSK	1@271	20.91	21.25	24.09	27.99	0.6295
77	30	100	662000	3930	CP-OFDM 16 QAM	137@68	20.29	20.18	23.25	27.15	0.5188
77	30	100	662000	3930	CP-OFDM 16 QAM	1@1	20.47	20.49	23.49	27.39	0.5483
77	30	100	662000	3930	CP-OFDM 16 QAM	1@271	20.1	20.58	23.36	27.26	0.5321
77	30	100	662000	3930	CP-OFDM 64 QAM	137@68	18.79	18.55	21.68	25.58	0.3614
77	30	100	662000	3930	CP-OFDM 64 QAM	1@1	18.96	18.92	21.95	25.85	0.3846
77	30	100	662000	3930	CP-OFDM 64 QAM	1@271	18.66	19.08	21.89	25.79	0.3793
77	30	100	662000	3930	CP-OFDM 256 QAM	137@68	16.91	16.59	19.76	23.66	0.2323
77	30	100	662000	3930	CP-OFDM 256 QAM	1@1	16.72	16.76	19.75	23.65	0.2317
77	30	100	662000	3930	CP-OFDM 256 QAM	1@271	16.25	16.85	19.57	23.47	0.2223



5GNR N78

Transmitter Conducted Output Power And EIRP, (GT - LC)=3.90db

NR Band	SCS	BandWidth	Arfcn	Freq(MHz)	Modulation	RB	Conducted Power(dBm)	EIRP(dBm)	EIRP(W)
78	30	10	647000	3705	DFT-s-OFDM QPSK	1@1	23.38	27.28	0.5346
78	30	10	647000	3705	DFT-s-OFDM 16 QAM	1@1	22.42	26.32	0.4285
78	30	10	650000	3750	DFT-s-OFDM QPSK	1@1	23.52	27.42	0.5521
78	30	10	650000	3750	DFT-s-OFDM 16 QAM	1@1	22.52	26.42	0.4385
78	30	10	653000	3795	DFT-s-OFDM QPSK	1@1	23.3	27.2	0.5248
78	30	10	653000	3795	DFT-s-OFDM 16 QAM	1@1	22.29	26.19	0.4159
78	30	15	647168	3707.52	DFT-s-OFDM QPSK	1@1	23.52	27.42	0.5521
78	30	15	647168	3707.52	DFT-s-OFDM 16 QAM	1@1	22.6	26.5	0.4467
78	30	15	650000	3750	DFT-s-OFDM QPSK	1@1	23.63	27.53	0.5662
78	30	15	650000	3750	DFT-s-OFDM 16 QAM	1@1	22.67	26.57	0.4539
78	30	15	652832	3792.48	DFT-s-OFDM QPSK	1@1	23.51	27.41	0.5508
78	30	15	652832	3792.48	DFT-s-OFDM 16 QAM	1@1	22.57	26.47	0.4436
78	30	20	647334	3710.01	DFT-s-OFDM QPSK	1@1	23.53	27.43	0.5534
78	30	20	647334	3710.01	DFT-s-OFDM 16 QAM	1@1	22.6	26.5	0.4467
78	30	20	650000	3750	DFT-s-OFDM QPSK	1@1	23.55	27.45	0.5559
78	30	20	650000	3750	DFT-s-OFDM 16 QAM	1@1	22.7	26.6	0.4571
78	30	20	652666	3789.99	DFT-s-OFDM QPSK	1@1	23.47	27.37	0.5458
78	30	20	652666	3789.99	DFT-s-OFDM 16 QAM	1@1	22.57	26.47	0.4436
78	30	30	647668	3715.02	DFT-s-OFDM QPSK	1@1	23.53	27.43	0.5534
78	30	30	647668	3715.02	DFT-s-OFDM 16 QAM	1@1	22.65	26.55	0.4519
78	30	30	650000	3750	DFT-s-OFDM QPSK	1@1	23.7	27.6	0.5754
78	30	30	650000	3750	DFT-s-OFDM 16 QAM	1@1	22.8	26.7	0.4677
78	30	30	652332	3784.98	DFT-s-OFDM QPSK	1@1	23.57	27.47	0.5585
78	30	30	652332	3784.98	DFT-s-OFDM 16 QAM	1@1	22.67	26.57	0.4539
78	30	40	648000	3720	DFT-s-OFDM QPSK	1@1	23.78	27.68	0.5861
78	30	40	648000	3720	DFT-s-OFDM 16 QAM	1@1	22.85	26.75	0.4732
78	30	40	650000	3750	DFT-s-OFDM QPSK	1@1	23.87	27.77	0.5984
78	30	40	650000	3750	DFT-s-OFDM 16 QAM	1@1	22.85	26.75	0.4732
78	30	40	652000	3780	DFT-s-OFDM QPSK	1@1	23.7	27.6	0.5754
78	30	40	652000	3780	DFT-s-OFDM 16 QAM	1@1	22.76	26.66	0.4634
78	30	50	648334	3725.01	DFT-s-OFDM QPSK	1@1	23.26	27.16	0.5200
78	30	50	648334	3725.01	DFT-s-OFDM 16 QAM	1@1	22.33	26.23	0.4198



78	30	50	650000	3750	DFT-s-OFDM QPSK	1@1	23.39	27.29	0.5358
78	30	50	650000	3750	DFT-s-OFDM 16 QAM	1@1	22.48	26.38	0.4345
78	30	50	651666	3774.99	DFT-s-OFDM QPSK	1@1	23.36	27.26	0.5321
78	30	50	651666	3774.99	DFT-s-OFDM 16 QAM	1@1	22.46	26.36	0.4325
78	30	60	648668	3730.02	DFT-s-OFDM QPSK	1@1	23.26	27.16	0.5200
78	30	60	648668	3730.02	DFT-s-OFDM 16 QAM	1@1	22.3	26.2	0.4169
78	30	60	650000	3750	DFT-s-OFDM QPSK	1@1	23.33	27.23	0.5284
78	30	60	650000	3750	DFT-s-OFDM 16 QAM	1@1	22.35	26.25	0.4217
78	30	60	651332	3769.98	DFT-s-OFDM QPSK	1@1	23.31	27.21	0.5260
78	30	60	651332	3769.98	DFT-s-OFDM 16 QAM	1@1	22.39	26.29	0.4256
78	30	70	649000	3735	DFT-s-OFDM QPSK	1@1	23.21	27.11	0.5140
78	30	70	649000	3735	DFT-s-OFDM 16 QAM	1@1	22.22	26.12	0.4093
78	30	70	650000	3750	DFT-s-OFDM QPSK	1@1	23.28	27.18	0.5224
78	30	70	650000	3750	DFT-s-OFDM 16 QAM	1@1	22.36	26.26	0.4227
78	30	70	651000	3765	DFT-s-OFDM QPSK	1@1	23.3	27.2	0.5248
78	30	70	651000	3765	DFT-s-OFDM 16 QAM	1@1	22.34	26.24	0.4207
78	30	80	649334	3740.01	DFT-s-OFDM QPSK	1@1	23.27	27.17	0.5212
78	30	80	649334	3740.01	DFT-s-OFDM 16 QAM	1@1	22.26	26.16	0.4130
78	30	80	650000	3750	DFT-s-OFDM QPSK	1@1	23.4	27.3	0.5370
78	30	80	650000	3750	DFT-s-OFDM 16 QAM	1@1	22.29	26.19	0.4159
78	30	80	650666	3759.99	DFT-s-OFDM QPSK	1@1	23.23	27.13	0.5164
78	30	80	650666	3759.99	DFT-s-OFDM 16 QAM	1@1	22.28	26.18	0.4150
78	30	90	649668	3745.02	DFT-s-OFDM QPSK	1@1	23.22	27.12	0.5152
78	30	90	649668	3745.02	DFT-s-OFDM 16 QAM	1@1	22.26	26.16	0.4130
78	30	90	650000	3750	DFT-s-OFDM QPSK	1@1	23.25	27.15	0.5188
78	30	90	650000	3750	DFT-s-OFDM 16 QAM	1@1	22.29	26.19	0.4159
78	30	90	650332	3754.98	DFT-s-OFDM QPSK	1@1	23.29	27.19	0.5236
78	30	90	650332	3754.98	DFT-s-OFDM 16 QAM	1@1	22.34	26.24	0.4207
78	30	100	650000	3750	DFT-s-OFDM PI/2 BPSK	135@67	23.85	27.75	0.5957
78	30	100	650000	3750	DFT-s-OFDM PI/2 BPSK	1@1	23.75	27.65	0.5821
78	30	100	650000	3750	DFT-s-OFDM PI/2 BPSK	1@271	23.72	27.62	0.5781
78	30	100	650000	3750	DFT-s-OFDM QPSK	135@67	23.81	27.71	0.5902
78	30	100	650000	3750	DFT-s-OFDM QPSK	1@1	23.88	27.78	0.5998
78	30	100	650000	3750	DFT-s-OFDM QPSK	1@271	23.69	27.59	0.5741
78	30	100	650000	3750	DFT-s-OFDM 16 QAM	135@67	22.79	26.69	0.4667
78	30	100	650000	3750	DFT-s-OFDM 16 QAM	1@1	22.83	26.73	0.4710



78	30	100	650000	3750	DFT-s-OFDM 16 QAM	1@271	22.78	26.68	0.4656
78	30	100	650000	3750	DFT-s-OFDM 64 QAM	135@67	21.32	25.22	0.3327
78	30	100	650000	3750	DFT-s-OFDM 64 QAM	1@1	21.31	25.21	0.3319
78	30	100	650000	3750	DFT-s-OFDM 64 QAM	1@271	21.21	25.11	0.3243
78	30	100	650000	3750	DFT-s-OFDM 256 QAM	135@67	19.36	23.26	0.2118
78	30	100	650000	3750	DFT-s-OFDM 256 QAM	1@1	19.14	23.04	0.2014
78	30	100	650000	3750	DFT-s-OFDM 256 QAM	1@271	19.1	23	0.1995
78	30	100	650000	3750	CP-OFDM QPSK	137@68	22.24	26.14	0.4111
78	30	100	650000	3750	CP-OFDM QPSK	1@1	22.16	26.06	0.4036
78	30	100	650000	3750	CP-OFDM QPSK	1@271	22.12	26.02	0.3999



5GNR N78 UL MIMO

Transmitter Conducted Output Power And EIRP, (GT - LC)=3.90db

NR Band	SCS	BandWidth	Arfcn	Freq(MHz)	Modulation	RB	ANT2 Power(dBm)	ANT0 Power(dBm)	Conducted Power(dBm)	EIRP(dBm)	EIRP(W)
78	30	10	647000	3705	CP-OFDM QPSK	1@1	21.06	20.87	23.98	27.88	0.6138
78	30	10	647000	3705	CP-OFDM 16 QAM	1@1	20	19.97	23.00	26.9	0.4898
78	30	10	650000	3750	CP-OFDM QPSK	1@1	21	20.94	23.98	27.88	0.6138
78	30	10	650000	3750	CP-OFDM 16 QAM	1@1	20.01	19.89	22.96	26.86	0.4853
78	30	10	653000	3795	CP-OFDM QPSK	1@1	20.87	20.71	23.80	27.7	0.5888
78	30	10	653000	3795	CP-OFDM 16 QAM	1@1	19.87	19.85	22.87	26.77	0.4753
78	30	15	647168	3707.52	CP-OFDM QPSK	1@1	21.05	21.24	24.16	28.06	0.6397
78	30	15	647168	3707.52	CP-OFDM 16 QAM	1@1	20.03	20.28	23.17	27.07	0.5093
78	30	15	650000	3750	CP-OFDM QPSK	1@1	21.19	20.93	24.07	27.97	0.6266
78	30	15	650000	3750	CP-OFDM 16 QAM	1@1	20.2	20.08	23.15	27.05	0.5070
78	30	15	652832	3792.48	CP-OFDM QPSK	1@1	21.06	21.01	24.05	27.95	0.6237
78	30	15	652832	3792.48	CP-OFDM 16 QAM	1@1	20.01	20.12	23.08	26.98	0.4989
78	30	20	647334	3710.01	CP-OFDM QPSK	1@1	21.13	21.14	24.15	28.05	0.6383
78	30	20	647334	3710.01	CP-OFDM 16 QAM	1@1	20.2	20.37	23.30	27.2	0.5248
78	30	20	650000	3750	CP-OFDM QPSK	1@1	21.23	21.02	24.14	28.04	0.6368
78	30	20	650000	3750	CP-OFDM 16 QAM	1@1	20.29	20.09	23.20	27.1	0.5129
78	30	20	652666	3789.99	CP-OFDM QPSK	1@1	20.97	20.98	23.99	27.89	0.6152
78	30	20	652666	3789.99	CP-OFDM 16 QAM	1@1	19.96	20.08	23.03	26.93	0.4932
78	30	30	647668	3715.02	CP-OFDM QPSK	1@1	21.21	21.11	24.17	28.07	0.6412
78	30	30	647668	3715.02	CP-OFDM 16 QAM	1@1	20.3	20.35	23.34	27.24	0.5297
78	30	30	650000	3750	CP-OFDM QPSK	1@1	21.39	21.02	24.22	28.12	0.6486
78	30	30	650000	3750	CP-OFDM 16 QAM	1@1	20.2	20.28	23.25	27.15	0.5188
78	30	30	652332	3784.98	CP-OFDM QPSK	1@1	21.13	21.17	24.16	28.06	0.6397
78	30	30	652332	3784.98	CP-OFDM 16 QAM	1@1	20.27	20.2	23.25	27.15	0.5188
78	30	40	648000	3720	CP-OFDM QPSK	1@1	21.28	21.42	24.36	28.26	0.6699
78	30	40	648000	3720	CP-OFDM 16 QAM	1@1	20.36	20.5	23.44	27.34	0.5420
78	30	40	650000	3750	CP-OFDM QPSK	1@1	21.31	21.37	24.35	28.25	0.6683
78	30	40	650000	3750	CP-OFDM 16 QAM	1@1	20.47	20.37	23.43	27.33	0.5408
78	30	40	652000	3780	CP-OFDM QPSK	1@1	21.26	21.21	24.25	28.15	0.6531
78	30	40	652000	3780	CP-OFDM 16 QAM	1@1	20.3	20.17	23.25	27.15	0.5188
78	30	50	648334	3725.01	CP-OFDM QPSK	1@1	20.91	20.91	23.92	27.82	0.6053
78	30	50	648334	3725.01	CP-OFDM 16 QAM	1@1	19.93	19.95	22.95	26.85	0.4842
78	30	50	650000	3750	CP-OFDM QPSK	1@1	20.99	20.92	23.97	27.87	0.6124
78	30	50	650000	3750	CP-OFDM 16 QAM	1@1	19.95	19.97	22.97	26.87	0.4864
78	30	50	651666	3774.99	CP-OFDM QPSK	1@1	21.14	20.96	24.06	27.96	0.6252
78	30	50	651666	3774.99	CP-OFDM 16 QAM	1@1	20.1	19.87	23.00	26.9	0.4898
78	30	60	648668	3730.02	CP-OFDM QPSK	1@1	20.76	20.89	23.84	27.74	0.5943
78	30	60	648668	3730.02	CP-OFDM 16 QAM	1@1	19.87	20.04	22.97	26.87	0.4864
78	30	60	650000	3750	CP-OFDM QPSK	1@1	20.91	20.78	23.86	27.76	0.5970
78	30	60	650000	3750	CP-OFDM 16 QAM	1@1	19.85	19.93	22.90	26.8	0.4786
78	30	60	651332	3769.98	CP-OFDM QPSK	1@1	20.95	20.65	23.81	27.71	0.5902



78	30	60	651332	3769.98	CP-OFDM 16 QAM	1@1	20.06	19.63	22.86	26.76	0.4742
78	30	70	649000	3735	CP-OFDM QPSK	1@1	20.98	20.89	23.95	27.85	0.6095
78	30	70	649000	3735	CP-OFDM 16 QAM	1@1	19.76	19.96	22.87	26.77	0.4753
78	30	70	650000	3750	CP-OFDM QPSK	1@1	20.98	20.98	23.99	27.89	0.6152
78	30	70	650000	3750	CP-OFDM 16 QAM	1@1	19.99	20.02	23.02	26.92	0.4920
78	30	70	651000	3765	CP-OFDM QPSK	1@1	20.9	20.72	23.82	27.72	0.5916
78	30	70	651000	3765	CP-OFDM 16 QAM	1@1	19.85	19.72	22.80	26.7	0.4677
78	30	80	649334	3740.01	CP-OFDM QPSK	1@1	20.85	20.89	23.88	27.78	0.5998
78	30	80	649334	3740.01	CP-OFDM 16 QAM	1@1	19.79	20.03	22.92	26.82	0.4808
78	30	80	650000	3750	CP-OFDM QPSK	1@1	20.98	20.83	23.92	27.82	0.6053
78	30	80	650000	3750	CP-OFDM 16 QAM	1@1	20.06	19.92	23.00	26.9	0.4898
78	30	80	650666	3759.99	CP-OFDM QPSK	1@1	20.99	20.8	23.91	27.81	0.6039
78	30	80	650666	3759.99	CP-OFDM 16 QAM	1@1	19.91	19.83	22.88	26.78	0.4764
78	30	90	649668	3745.02	CP-OFDM QPSK	1@1	20.82	20.83	23.84	27.74	0.5943
78	30	90	649668	3745.02	CP-OFDM 16 QAM	1@1	19.67	19.87	22.78	26.68	0.4656
78	30	90	650000	3750	CP-OFDM QPSK	1@1	20.84	21.04	23.95	27.85	0.6095
78	30	90	650000	3750	CP-OFDM 16 QAM	1@1	19.88	19.85	22.88	26.78	0.4764
78	30	90	650332	3754.98	CP-OFDM QPSK	1@1	20.89	21.09	24.00	27.9	0.6166
78	30	90	650332	3754.98	CP-OFDM 16 QAM	1@1	19.85	20.08	22.98	26.88	0.4875
78	30	100	650000	3750	CP-OFDM QPSK	137@68	21.32	21.28	24.31	28.21	0.6622
78	30	100	650000	3750	CP-OFDM QPSK	1@1	21.41	21.47	24.45	28.35	0.6839
78	30	100	650000	3750	CP-OFDM QPSK	1@271	21.09	21.46	24.29	28.19	0.6592
78	30	100	650000	3750	CP-OFDM 16 QAM	137@68	20.34	20.14	23.25	27.15	0.5188
78	30	100	650000	3750	CP-OFDM 16 QAM	1@1	20.3	20.19	23.26	27.16	0.5200
78	30	100	650000	3750	CP-OFDM 16 QAM	1@271	20.14	20.57	23.37	27.27	0.5333
78	30	100	650000	3750	CP-OFDM 64 QAM	137@68	18.74	18.82	21.79	25.69	0.3707
78	30	100	650000	3750	CP-OFDM 64 QAM	1@1	18.85	18.83	21.85	25.75	0.3758
78	30	100	650000	3750	CP-OFDM 64 QAM	1@271	18.65	19.02	21.85	25.75	0.3758
78	30	100	650000	3750	CP-OFDM 256 QAM	137@68	16.88	16.71	19.81	23.71	0.2350
78	30	100	650000	3750	CP-OFDM 256 QAM	1@1	16.48	16.53	19.52	23.42	0.2198
78	30	100	650000	3750	CP-OFDM 256 QAM	1@271	16.54	16.81	19.69	23.59	0.2286



Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

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

RSE pre-scanned harmonic for different antennas, choose the worst antenna perform final test and record in the report.

N77 SA / NR 100MHz / QPSK(ANT2)									
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)
Middle	7582.36	-57.75	-13	-44.75	-50.93	-61.05	8.30	11.60	H
	11373.54	-52.58	-13	-39.58	-53.59	-54.10	10.48	12.00	H
	15164.72	-51.05	-13	-38.05	-54.45	-52.75	11.80	13.50	H
	7582.36	-58.29	-13	-45.29	-51.95	-61.59	8.30	11.60	V
	11373.54	-53.67	-13	-40.67	-54.64	-55.19	10.48	12.00	V
	15164.72	-50.24	-13	-37.24	-55.22	-51.94	11.80	13.50	V

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

EN-DC_30A_n77A / LTE 10MHz + NR 100MHz / QPSK(0+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 n77 Middle	7582.36	-58.70	-13	-45.70	-51.88	-62.00	8.30	11.60	H
	11373.54	-54.51	-13	-41.51	-55.52	-56.03	10.48	12.00	H
	15164.72	-52.30	-13	-39.30	-55.70	-54.00	11.80	13.50	H
	7582.36	-58.90	-13	-45.90	-52.56	-62.20	8.30	11.60	V
	11373.54	-54.34	-13	-41.34	-55.31	-55.86	10.48	12.00	V
	15164.72	-50.67	-13	-37.67	-55.65	-52.37	11.80	13.50	V
LTE Band30 Middle	4611.00	-64.82	-40	-24.82	-50.89	-71.07	6.45	12.70	H
	6916.50	-61.15	-40	-21.15	-52.73	-64.55	8.40	11.80	H
	9222.00	-57.03	-40	-17.03	-54.17	-59.38	9.65	12.00	H
	4611.00	-64.81	-40	-24.81	-51.06	-71.06	6.45	12.70	V
	6916.50	-61.46	-40	-21.46	-53.35	-64.86	8.40	11.80	V
	9222.00	-57.42	-40	-17.42	-54.09	-59.77	9.65	12.00	V

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



UL MIMO N77 / NR 100MHz / QPSK(ANT2+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)
Middle	7582.36	-58.90	-13	-45.90	-52.08	-62.20	8.30	11.60	H
	11373.54	-53.80	-13	-40.80	-54.81	-55.32	10.48	12.00	H
	15164.72	-51.83	-13	-38.83	-55.23	-53.53	11.80	13.50	H
	7582.36	-58.43	-13	-45.43	-52.09	-61.73	8.30	11.60	V
	11373.54	-54.06	-13	-41.06	-55.03	-55.58	10.48	12.00	V
	15164.72	-50.36	-13	-37.36	-55.34	-52.06	11.80	13.50	V

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