

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 Q
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
FG452231P	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	—	Report Only	-
-	§27.50 (k)(4)	Peak-to-Average Ratio	<13dB	PASS	1
3.5	§27.50 (k)(3)	EIRP	EIRP < 1W (30dBm)	PASS	-
-	§2.1049	Occupied Bandwidth	—	Report Only	1
-	§2.1051 §27.53 (n)(2)	Conducted Band Edge Measurement	-13dBm/MHz	PASS	1
-	§2.1051 §27.53 (n)(2)	Conducted Spurious Emission	-13dBm/MHz	PASS	1
-	§2.1055 §27.54	Frequency Stability Temperature & Voltage	Within the band	PASS	1
4.4	§2.1053 §27.53 (n)(2)	Radiated Spurious Emission	-13dBm/MHz	PASS	Under limit 16.82 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:

- 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.
- 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

Product Feature	
Tx/Rx Frequency	5G NR n77: 3450 MHz ~ 3550 MHz 5G NR n78: 3450 MHz ~ 3550 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 Power 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	3455.01 ~ 3544.98	0.5715	0.4519
15	3457.50 ~ 3542.49	0.5808	0.4677
20	3460.02 ~ 3540.00	0.5821	0.4699
30	3465.00 ~ 3534.99	0.5970	0.4875
40	3470.01 ~ 3529.98	0.6039	0.4875
50	3475.02 ~ 3525.00	0.5598	0.4519
60	3480.00 ~ 3519.99	0.5495	0.4487
70	3485.01 ~ 3514.98	0.5508	0.4487
80	3490.02 ~ 3510.00	0.5433	0.4406
90	3495.00 ~ 3504.99	0.5395	0.4355
100	3500.01	0.6368	0.5152

5G NR n78 SA		PI/2 BPSK / QPSK	16QAM / 64QAM / 256QAM
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Maximum EIRP(W)
10	3455.01 ~ 3544.98	0.5534	0.4426
15	3457.50 ~ 3542.49	0.5420	0.4385
20	3460.02 ~ 3540.00	0.5508	0.4467
30	3465.00 ~ 3534.99	0.5715	0.4539
40	3470.01 ~ 3529.98	0.5649	0.4603
50	3475.02 ~ 3525.00	0.5105	0.4150
60	3480.00 ~ 3519.99	0.5224	0.4305
70	3485.01 ~ 3514.98	0.5188	0.4217
80	3490.02 ~ 3510.00	0.5848	0.4742
90	3495.00 ~ 3504.99	0.5781	0.4710
100	3500.01	0.5929	0.4797

5G NR n77 UL MIMO		QPSK	16QAM / 64QAM / 256QAM
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Maximum EIRP(W)
10	3455.01 ~ 3544.98	0.6546	0.5272
15	3457.50 ~ 3542.49	0.6745	0.5346
20	3460.02 ~ 3540.00	0.6683	0.5383
30	3465.00 ~ 3534.99	0.6934	0.5702
40	3470.01 ~ 3529.98	0.6902	0.5546
50	3475.02 ~ 3525.00	0.6516	0.5297
60	3480.00 ~ 3519.99	0.6516	0.5309
70	3485.01 ~ 3514.98	0.6714	0.5420
80	3490.02 ~ 3510.00	0.6561	0.5188
90	3495.00 ~ 3504.99	0.6427	0.5272
100	3500.01	0.7063	0.5689

5G NR n78 UL MIMO		QPSK	16QAM / 64QAM / 256QAM
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Maximum EIRP(W)
10	3455.01 ~ 3544.98	0.6577	0.5224
15	3457.50 ~ 3542.49	0.6607	0.5383
20	3460.02 ~ 3540.00	0.6668	0.5395
30	3465.00 ~ 3534.99	0.6792	0.5483
40	3470.01 ~ 3529.98	0.6776	0.5610
50	3475.02 ~ 3525.00	0.6730	0.5408
60	3480.00 ~ 3519.99	0.6761	0.5495
70	3485.01 ~ 3514.98	0.6839	0.5383
80	3490.02 ~ 3510.00	0.6531	0.5383
90	3495.00 ~ 3504.99	0.6668	0.5358
100	3500.01	0.6855	0.5689

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 Site

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	6.2009-8-24al

1.9 Applied Standards

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

- 47 CFR Part 27 Subpart Q
- ANSI C63.26-2015
- FCC KDB 971168 Power Meas License Digital Systems D01 v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

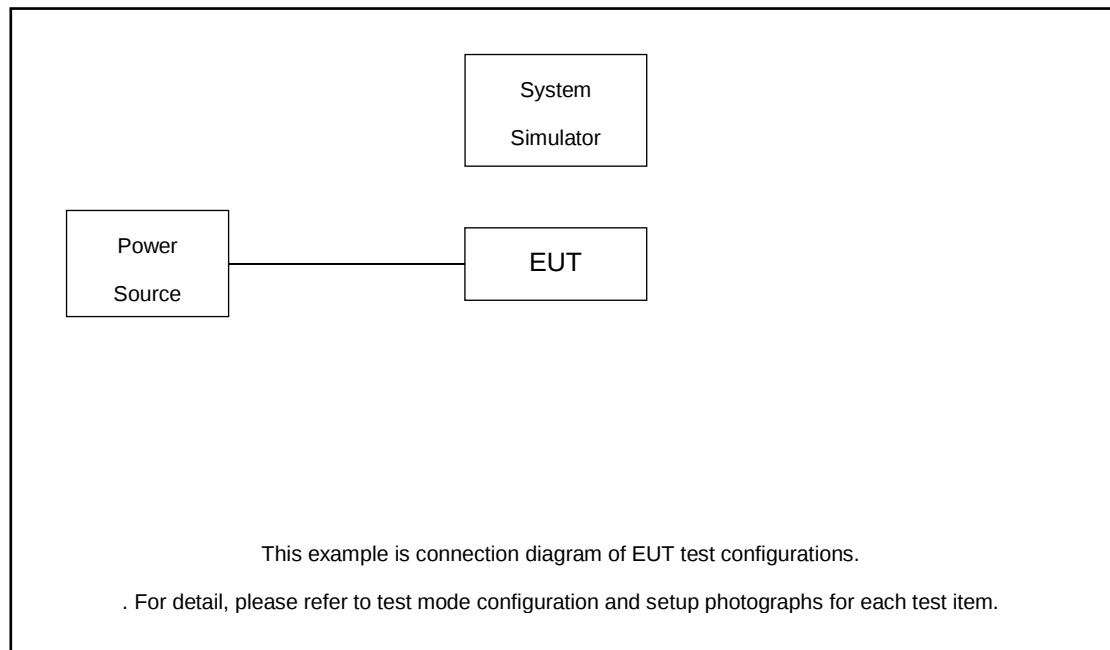
Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission. (X Plane)

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.	Power Supply	GWINSTEK	PSS-2002	N/A	N/A	Unshielded, 1.8 m
2.	LTE Base Station	Anritsu	MT8820C	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/n78 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
100	Channel	-	633334	-
	Frequency	-	3500.01	-
90	Channel	633000	633334	633666
	Frequency	3495	3500.01	3504.99
80	Channel	632668	633334	634000
	Frequency	3490.02	3500.01	3510
70	Channel	632334	633334	634332
	Frequency	3485.01	3500.01	3514.98
60	Channel	632000	633334	634666
	Frequency	3480	3500.01	3519.99
50	Channel	631668	633334	635000
	Frequency	3475.02	3500.01	3525
40	Channel	631334	633334	635332
	Frequency	3470.01	3500.01	3529.98
30	Channel	631000	633334	635666
	Frequency	3465	3500.01	3534.99
20	Channel	630668	633334	636000
	Frequency	3460.02	3500.01	3540
15	Channel	630500	633334	636166
	Frequency	3457.5	3500.01	3542.49
10	Channel	630334	633334	636332
	Frequency	3455.01	3500.01	3544.98

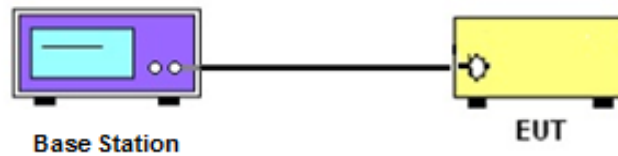
3 Conducted Test Items

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 Measurement

3.4.1 Description of the Conducted Output Power Measurement

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

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.

3.5 EIRP

3.5.1 Description of EIRP Limit

§ 27.50 (k)(3)

Mobile devices are limited to 1Watt (30 dBm) EIRP. Mobile devices operating in these bands must employ a means for limiting power to the minimum necessary for successful communications

3.5.2 Test Procedures

1. According to KDB 412172 D01 Power Approach,
2. $EIRP = P_T + G_T - L_C$, $ERP = EIRP - 2.15$, 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

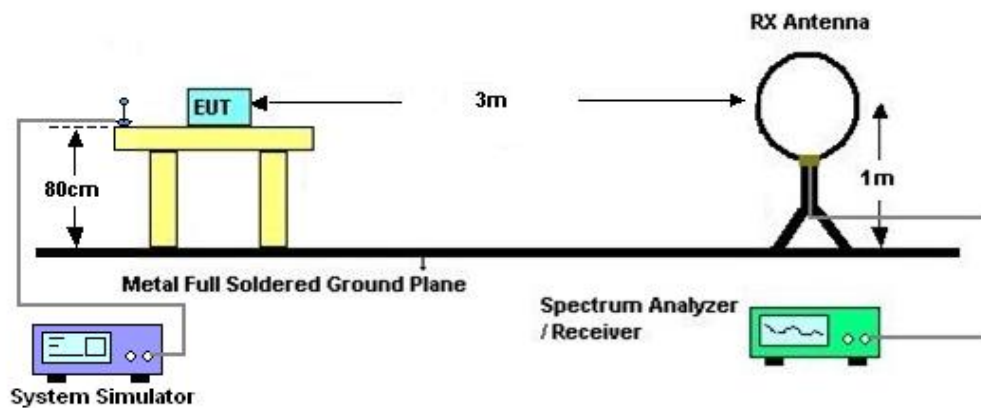
4 Radiated Test Items

4.1 Measuring Instruments

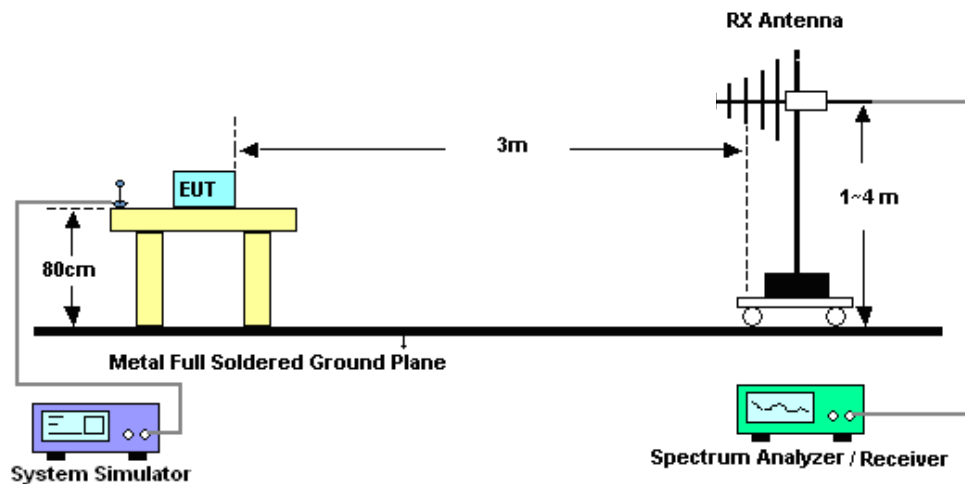
See list of measuring instruments of this test report.

4.2 Test Setup

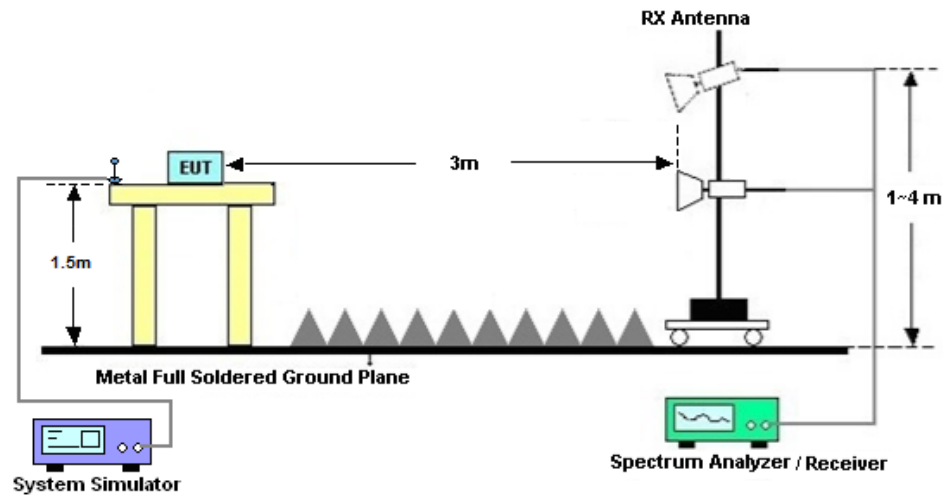
4.2.1 For radiated test below 30MHz



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 Measurement

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 shall not exceed -13 dBm/MHz.

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.
$$\text{EIRP (dBm)} = \text{S.G. Power} - \text{Tx Cable Loss} + \text{Tx Antenna Gain}$$
$$\text{ERP (dBm)} = \text{EIRP} - 2.15$$
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.



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% ($U = 2U_c(y)$)	± 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% ($U = 2U_c(y)$)	± 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% ($U = 2U_c(y)$)	± 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%

5GNR 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	630334	3455.01	DFT-s-OFDM QPSK	1@1	23.42	27.32	0.5395
77	30	10	630334	3455.01	DFT-s-OFDM 16 QAM	1@1	22.47	26.37	0.4335
77	30	10	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.56	27.46	0.5572
77	30	10	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.59	26.49	0.4457
77	30	10	636332	3544.98	DFT-s-OFDM QPSK	1@1	23.67	27.57	0.5715
77	30	10	636332	3544.98	DFT-s-OFDM 16 QAM	1@1	22.65	26.55	0.4519
77	30	15	630500	3457.5	DFT-s-OFDM QPSK	1@1	23.62	27.52	0.5649
77	30	15	630500	3457.5	DFT-s-OFDM 16 QAM	1@1	22.68	26.58	0.4550
77	30	15	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.65	27.55	0.5689
77	30	15	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.78	26.68	0.4656
77	30	15	636166	3542.49	DFT-s-OFDM QPSK	1@1	23.74	27.64	0.5808
77	30	15	636166	3542.49	DFT-s-OFDM 16 QAM	1@1	22.8	26.7	0.4677
77	30	20	630668	3460.02	DFT-s-OFDM QPSK	1@1	23.75	27.65	0.5821
77	30	20	630668	3460.02	DFT-s-OFDM 16 QAM	1@1	22.82	26.72	0.4699
77	30	20	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.65	27.55	0.5689
77	30	20	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.75	26.65	0.4624
77	30	20	636000	3540	DFT-s-OFDM QPSK	1@1	23.7	27.6	0.5754
77	30	20	636000	3540	DFT-s-OFDM 16 QAM	1@1	22.79	26.69	0.4667
77	30	30	631000	3465	DFT-s-OFDM QPSK	1@1	23.78	27.68	0.5861
77	30	30	631000	3465	DFT-s-OFDM 16 QAM	1@1	22.85	26.75	0.4732
77	30	30	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.79	27.69	0.5875
77	30	30	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.93	26.83	0.4819
77	30	30	635666	3534.99	DFT-s-OFDM QPSK	1@1	23.86	27.76	0.5970
77	30	30	635666	3534.99	DFT-s-OFDM 16 QAM	1@1	22.98	26.88	0.4875
77	30	40	631334	3470.01	DFT-s-OFDM QPSK	1@1	23.81	27.71	0.5902
77	30	40	631334	3470.01	DFT-s-OFDM 16 QAM	1@1	22.86	26.76	0.4742
77	30	40	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.87	27.77	0.5984
77	30	40	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.96	26.86	0.4853
77	30	40	635332	3529.98	DFT-s-OFDM QPSK	1@1	23.91	27.81	0.6039
77	30	40	635332	3529.98	DFT-s-OFDM 16 QAM	1@1	22.98	26.88	0.4875
77	30	50	631668	3475.02	DFT-s-OFDM QPSK	1@1	23.52	27.42	0.5521
77	30	50	631668	3475.02	DFT-s-OFDM 16 QAM	1@1	22.6	26.5	0.4467
77	30	50	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.55	27.45	0.5559
77	30	50	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.64	26.54	0.4508
77	30	50	635000	3525	DFT-s-OFDM QPSK	1@1	23.58	27.48	0.5598



77	30	50	635000	3525	DFT-s-OFDM 16 QAM	1@1	22.65	26.55	0.4519
77	30	60	632000	3480	DFT-s-OFDM QPSK	1@1	23.49	27.39	0.5483
77	30	60	632000	3480	DFT-s-OFDM 16 QAM	1@1	22.62	26.52	0.4487
77	30	60	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.5	27.4	0.5495
77	30	60	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.61	26.51	0.4477
77	30	60	634666	3519.99	DFT-s-OFDM QPSK	1@1	23.5	27.4	0.5495
77	30	60	634666	3519.99	DFT-s-OFDM 16 QAM	1@1	22.58	26.48	0.4446
77	30	70	632334	3485.01	DFT-s-OFDM QPSK	1@1	23.48	27.38	0.5470
77	30	70	632334	3485.01	DFT-s-OFDM 16 QAM	1@1	22.56	26.46	0.4426
77	30	70	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.38	27.28	0.5346
77	30	70	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.48	26.38	0.4345
77	30	70	634332	3514.98	DFT-s-OFDM QPSK	1@1	23.51	27.41	0.5508
77	30	70	634332	3514.98	DFT-s-OFDM 16 QAM	1@1	22.62	26.52	0.4487
77	30	80	632668	3490.02	DFT-s-OFDM QPSK	1@1	23.44	27.34	0.5420
77	30	80	632668	3490.02	DFT-s-OFDM 16 QAM	1@1	22.5	26.4	0.4365
77	30	80	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.39	27.29	0.5358
77	30	80	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.43	26.33	0.4295
77	30	80	634000	3510	DFT-s-OFDM QPSK	1@1	23.45	27.35	0.5433
77	30	80	634000	3510	DFT-s-OFDM 16 QAM	1@1	22.54	26.44	0.4406
77	30	90	633000	3495	DFT-s-OFDM QPSK	1@1	23.42	27.32	0.5395
77	30	90	633000	3495	DFT-s-OFDM 16 QAM	1@1	22.49	26.39	0.4355
77	30	90	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.4	27.3	0.5370
77	30	90	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.44	26.34	0.4305
77	30	90	633666	3504.99	DFT-s-OFDM QPSK	1@1	23.4	27.3	0.5370
77	30	90	633666	3504.99	DFT-s-OFDM 16 QAM	1@1	22.47	26.37	0.4335
77	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	135@67	24.04	27.94	0.6223
77	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@1	24.02	27.92	0.6194
77	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@271	24.14	28.04	0.6368
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	135@67	24.07	27.97	0.6266
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.98	27.88	0.6138
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@271	24.09	27.99	0.6295
77	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	135@67	23.06	26.96	0.4966
77	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	23.06	26.96	0.4966
77	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	1@271	23.22	27.12	0.5152
77	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	135@67	21.59	25.49	0.3540
77	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	1@1	21.52	25.42	0.3483
77	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	1@271	21.68	25.58	0.3614
77	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	135@67	19.65	23.55	0.2265
77	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	1@1	19.47	23.37	0.2173
77	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	1@271	19.52	23.42	0.2198
77	30	100	633334	3500.01	CP-OFDM QPSK	137@68	22.57	26.47	0.4436
77	30	100	633334	3500.01	CP-OFDM QPSK	1@1	22.44	26.34	0.4305
77	30	100	633334	3500.01	CP-OFDM QPSK	1@271	22.58	26.48	0.4446



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	630334	3455.01	CP-OFDM QPSK	1@1	21.03	20.94	24.00	27.9	0.6166
77	30	10	630334	3455.01	CP-OFDM 16 QAM	1@1	20.03	20.21	23.13	27.03	0.5047
77	30	10	633334	3500.01	CP-OFDM QPSK	1@1	21.03	21.08	24.07	27.97	0.6266
77	30	10	633334	3500.01	CP-OFDM 16 QAM	1@1	20.19	20.32	23.27	27.17	0.5212
77	30	10	636332	3544.98	CP-OFDM QPSK	1@1	21.18	21.32	24.26	28.16	0.6546
77	30	10	636332	3544.98	CP-OFDM 16 QAM	1@1	20.18	20.43	23.32	27.22	0.5272
77	30	15	630500	3457.5	CP-OFDM QPSK	1@1	21.36	21.38	24.38	28.28	0.6730
77	30	15	630500	3457.5	CP-OFDM 16 QAM	1@1	20.38	20.31	23.36	27.26	0.5321
77	30	15	633334	3500.01	CP-OFDM QPSK	1@1	21.28	21.4	24.35	28.25	0.6683
77	30	15	633334	3500.01	CP-OFDM 16 QAM	1@1	20.25	20.49	23.38	27.28	0.5346
77	30	15	636166	3542.49	CP-OFDM QPSK	1@1	21.26	21.5	24.39	28.29	0.6745
77	30	15	636166	3542.49	CP-OFDM 16 QAM	1@1	20.18	20.45	23.33	27.23	0.5284
77	30	20	630668	3460.02	CP-OFDM QPSK	1@1	21.28	21.4	24.35	28.25	0.6683
77	30	20	630668	3460.02	CP-OFDM 16 QAM	1@1	20.3	20.41	23.37	27.27	0.5333
77	30	20	633334	3500.01	CP-OFDM QPSK	1@1	21.18	21.31	24.26	28.16	0.6546
77	30	20	633334	3500.01	CP-OFDM 16 QAM	1@1	20.37	20.39	23.39	27.29	0.5358
77	30	20	636000	3540	CP-OFDM QPSK	1@1	21.15	21.49	24.33	28.23	0.6653
77	30	20	636000	3540	CP-OFDM 16 QAM	1@1	20.36	20.44	23.41	27.31	0.5383
77	30	30	631000	3465	CP-OFDM QPSK	1@1	21.32	21.31	24.33	28.23	0.6653
77	30	30	631000	3465	CP-OFDM 16 QAM	1@1	20.27	20.54	23.42	27.32	0.5395
77	30	30	633334	3500.01	CP-OFDM QPSK	1@1	21.3	21.63	24.48	28.38	0.6887
77	30	30	633334	3500.01	CP-OFDM 16 QAM	1@1	20.39	20.71	23.56	27.46	0.5572
77	30	30	635666	3534.99	CP-OFDM QPSK	1@1	21.58	21.42	24.51	28.41	0.6934
77	30	30	635666	3534.99	CP-OFDM 16 QAM	1@1	20.55	20.75	23.66	27.56	0.5702
77	30	40	631334	3470.01	CP-OFDM QPSK	1@1	21.3	21.51	24.42	28.32	0.6792
77	30	40	631334	3470.01	CP-OFDM 16 QAM	1@1	20.51	20.49	23.51	27.41	0.5508
77	30	40	633334	3500.01	CP-OFDM QPSK	1@1	21.34	21.46	24.41	28.31	0.6776
77	30	40	633334	3500.01	CP-OFDM 16 QAM	1@1	20.42	20.47	23.46	27.36	0.5445
77	30	40	635332	3529.98	CP-OFDM QPSK	1@1	21.35	21.6	24.49	28.39	0.6902
77	30	40	635332	3529.98	CP-OFDM 16 QAM	1@1	20.46	20.6	23.54	27.44	0.5546
77	30	50	631668	3475.02	CP-OFDM QPSK	1@1	21.17	21.2	24.20	28.1	0.6457
77	30	50	631668	3475.02	CP-OFDM 16 QAM	1@1	20.22	20.44	23.34	27.24	0.5297
77	30	50	633334	3500.01	CP-OFDM QPSK	1@1	21.25	21.21	24.24	28.14	0.6516
77	30	50	633334	3500.01	CP-OFDM 16 QAM	1@1	20.11	20.28	23.21	27.11	0.5140
77	30	50	635000	3525	CP-OFDM QPSK	1@1	20.98	21.21	24.11	28.01	0.6324
77	30	50	635000	3525	CP-OFDM 16 QAM	1@1	20.13	20.25	23.20	27.1	0.5129
77	30	60	632000	3480	CP-OFDM QPSK	1@1	21.15	21.27	24.22	28.12	0.6486
77	30	60	632000	3480	CP-OFDM 16 QAM	1@1	20.14	20.31	23.24	27.14	0.5176
77	30	60	633334	3500.01	CP-OFDM QPSK	1@1	21.24	21.18	24.22	28.12	0.6486
77	30	60	633334	3500.01	CP-OFDM 16 QAM	1@1	20.12	20.26	23.20	27.1	0.5129
77	30	60	634666	3519.99	CP-OFDM QPSK	1@1	21.13	21.32	24.24	28.14	0.6516

77	30	60	634666	3519.99	CP-OFDM 16 QAM	1@1	20.32	20.36	23.35	27.25	0.5309
77	30	70	632334	3485.01	CP-OFDM QPSK	1@1	20.92	21.11	24.03	27.93	0.6209
77	30	70	632334	3485.01	CP-OFDM 16 QAM	1@1	20.07	20.02	23.06	26.96	0.4966
77	30	70	633334	3500.01	CP-OFDM QPSK	1@1	21.17	21.43	24.31	28.21	0.6622
77	30	70	633334	3500.01	CP-OFDM 16 QAM	1@1	20.22	20.3	23.27	27.17	0.5212
77	30	70	634332	3514.98	CP-OFDM QPSK	1@1	21.2	21.51	24.37	28.27	0.6714
77	30	70	634332	3514.98	CP-OFDM 16 QAM	1@1	20.39	20.47	23.44	27.34	0.5420
77	30	80	632668	3490.02	CP-OFDM QPSK	1@1	21.19	21.33	24.27	28.17	0.6561
77	30	80	632668	3490.02	CP-OFDM 16 QAM	1@1	20.12	20.28	23.21	27.11	0.5140
77	30	80	633334	3500.01	CP-OFDM QPSK	1@1	21.06	21.16	24.12	28.02	0.6339
77	30	80	633334	3500.01	CP-OFDM 16 QAM	1@1	20.29	20.19	23.25	27.15	0.5188
77	30	80	634000	3510	CP-OFDM QPSK	1@1	21.08	21.3	24.20	28.1	0.6457
77	30	80	634000	3510	CP-OFDM 16 QAM	1@1	20.17	20.27	23.23	27.13	0.5164
77	30	90	633000	3495	CP-OFDM QPSK	1@1	21.12	21.22	24.18	28.08	0.6427
77	30	90	633000	3495	CP-OFDM 16 QAM	1@1	20.13	20.14	23.15	27.05	0.5070
77	30	90	633334	3500.01	CP-OFDM QPSK	1@1	21.03	21.06	24.06	27.96	0.6252
77	30	90	633334	3500.01	CP-OFDM 16 QAM	1@1	20.2	20.41	23.32	27.22	0.5272
77	30	90	633666	3504.99	CP-OFDM QPSK	1@1	21.04	21.21	24.14	28.04	0.6368
77	30	90	633666	3504.99	CP-OFDM 16 QAM	1@1	20.12	20.36	23.25	27.15	0.5188
77	30	100	633334	3500.01	CP-OFDM QPSK	137@68	21.5	21.57	24.55	28.45	0.6998
77	30	100	633334	3500.01	CP-OFDM QPSK	1@1	21.34	21.57	24.47	28.37	0.6871
77	30	100	633334	3500.01	CP-OFDM QPSK	1@271	21.49	21.66	24.59	28.49	0.7063
77	30	100	633334	3500.01	CP-OFDM 16 QAM	137@68	20.4	20.55	23.49	27.39	0.5483
77	30	100	633334	3500.01	CP-OFDM 16 QAM	1@1	20.6	20.62	23.62	27.52	0.5649
77	30	100	633334	3500.01	CP-OFDM 16 QAM	1@271	20.63	20.65	23.65	27.55	0.5689
77	30	100	633334	3500.01	CP-OFDM 64 QAM	137@68	19.05	19.3	22.19	26.09	0.4064
77	30	100	633334	3500.01	CP-OFDM 64 QAM	1@1	19.03	19.12	22.09	25.99	0.3972
77	30	100	633334	3500.01	CP-OFDM 64 QAM	1@271	19.12	19.16	22.15	26.05	0.4027
77	30	100	633334	3500.01	CP-OFDM 256 QAM	137@68	17.18	17.13	20.17	24.07	0.2553
77	30	100	633334	3500.01	CP-OFDM 256 QAM	1@1	16.89	16.92	19.92	23.82	0.2410
77	30	100	633334	3500.01	CP-OFDM 256 QAM	1@271	16.9	17.18	20.05	23.95	0.2483



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	630334	3455.01	DFT-s-OFDM QPSK	1@1	23.32	27.22	0.5272
78	30	10	630334	3455.01	DFT-s-OFDM 16 QAM	1@1	22.37	26.27	0.4236
78	30	10	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.39	27.29	0.5358
78	30	10	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.44	26.34	0.4305
78	30	10	636332	3544.98	DFT-s-OFDM QPSK	1@1	23.53	27.43	0.5534
78	30	10	636332	3544.98	DFT-s-OFDM 16 QAM	1@1	22.56	26.46	0.4426
78	30	15	630500	3457.5	DFT-s-OFDM QPSK	1@1	23.38	27.28	0.5346
78	30	15	630500	3457.5	DFT-s-OFDM 16 QAM	1@1	22.46	26.36	0.4325
78	30	15	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.44	27.34	0.5420
78	30	15	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.52	26.42	0.4385
78	30	15	636166	3542.49	DFT-s-OFDM QPSK	1@1	23.39	27.29	0.5358
78	30	15	636166	3542.49	DFT-s-OFDM 16 QAM	1@1	22.5	26.4	0.4365
78	30	20	630668	3460.02	DFT-s-OFDM QPSK	1@1	23.45	27.35	0.5433
78	30	20	630668	3460.02	DFT-s-OFDM 16 QAM	1@1	22.56	26.46	0.4426
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.51	27.41	0.5508
78	30	20	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.6	26.5	0.4467
78	30	20	636000	3540	DFT-s-OFDM QPSK	1@1	23.47	27.37	0.5458
78	30	20	636000	3540	DFT-s-OFDM 16 QAM	1@1	22.55	26.45	0.4416
78	30	30	631000	3465	DFT-s-OFDM QPSK	1@1	23.5	27.4	0.5495
78	30	30	631000	3465	DFT-s-OFDM 16 QAM	1@1	22.6	26.5	0.4467
78	30	30	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.48	27.38	0.5470
78	30	30	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.67	26.57	0.4539
78	30	30	635666	3534.99	DFT-s-OFDM QPSK	1@1	23.67	27.57	0.5715
78	30	30	635666	3534.99	DFT-s-OFDM 16 QAM	1@1	22.66	26.56	0.4529
78	30	40	631334	3470.01	DFT-s-OFDM QPSK	1@1	23.62	27.52	0.5649
78	30	40	631334	3470.01	DFT-s-OFDM 16 QAM	1@1	22.7	26.6	0.4571
78	30	40	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.62	27.52	0.5649
78	30	40	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.69	26.59	0.4560
78	30	40	635332	3529.98	DFT-s-OFDM QPSK	1@1	23.62	27.52	0.5649
78	30	40	635332	3529.98	DFT-s-OFDM 16 QAM	1@1	22.73	26.63	0.4603
78	30	50	631668	3475.02	DFT-s-OFDM QPSK	1@1	23.14	27.04	0.5058
78	30	50	631668	3475.02	DFT-s-OFDM 16 QAM	1@1	22.26	26.16	0.4130
78	30	50	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.16	27.06	0.5082
78	30	50	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.28	26.18	0.4150
78	30	50	635000	3525	DFT-s-OFDM QPSK	1@1	23.18	27.08	0.5105
78	30	50	635000	3525	DFT-s-OFDM 16 QAM	1@1	22.28	26.18	0.4150
78	30	60	632000	3480	DFT-s-OFDM QPSK	1@1	23.21	27.11	0.5140
78	30	60	632000	3480	DFT-s-OFDM 16 QAM	1@1	22.31	26.21	0.4178
78	30	60	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.21	27.11	0.5140
78	30	60	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.35	26.25	0.4217
78	30	60	634666	3519.99	DFT-s-OFDM QPSK	1@1	23.28	27.18	0.5224



78	30	60	634666	3519.99	DFT-s-OFDM 16 QAM	1@1	22.44	26.34	0.4305
78	30	70	632334	3485.01	DFT-s-OFDM QPSK	1@1	23.17	27.07	0.5093
78	30	70	632334	3485.01	DFT-s-OFDM 16 QAM	1@1	22.29	26.19	0.4159
78	30	70	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.25	27.15	0.5188
78	30	70	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.3	26.2	0.4169
78	30	70	634332	3514.98	DFT-s-OFDM QPSK	1@1	23.24	27.14	0.5176
78	30	70	634332	3514.98	DFT-s-OFDM 16 QAM	1@1	22.35	26.25	0.4217
78	30	80	632668	3490.02	DFT-s-OFDM QPSK	1@1	23.74	27.64	0.5808
78	30	80	632668	3490.02	DFT-s-OFDM 16 QAM	1@1	22.8	26.7	0.4677
78	30	80	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.74	27.64	0.5808
78	30	80	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.79	26.69	0.4667
78	30	80	634000	3510	DFT-s-OFDM QPSK	1@1	23.77	27.67	0.5848
78	30	80	634000	3510	DFT-s-OFDM 16 QAM	1@1	22.86	26.76	0.4742
78	30	90	633000	3495	DFT-s-OFDM QPSK	1@1	23.72	27.62	0.5781
78	30	90	633000	3495	DFT-s-OFDM 16 QAM	1@1	22.83	26.73	0.4710
78	30	90	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.71	27.61	0.5768
78	30	90	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.74	26.64	0.4613
78	30	90	633666	3504.99	DFT-s-OFDM QPSK	1@1	23.69	27.59	0.5741
78	30	90	633666	3504.99	DFT-s-OFDM 16 QAM	1@1	22.79	26.69	0.4667
78	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	135@67	23.8	27.7	0.5888
78	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@1	23.73	27.63	0.5794
78	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@271	23.83	27.73	0.5929
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	135@67	23.81	27.71	0.5902
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@1	23.7	27.6	0.5754
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@271	23.79	27.69	0.5875
78	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	135@67	22.8	26.7	0.4677
78	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	22.76	26.66	0.4634
78	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	1@271	22.91	26.81	0.4797
78	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	135@67	21.37	25.27	0.3365
78	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	1@1	21.2	25.1	0.3236
78	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	1@271	21.37	25.27	0.3365
78	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	135@67	19.36	23.26	0.2118
78	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	1@1	19.15	23.05	0.2018
78	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	1@271	19.28	23.18	0.2080
78	30	100	633334	3500.01	CP-OFDM QPSK	137@68	22.29	26.19	0.4159
78	30	100	633334	3500.01	CP-OFDM QPSK	1@1	22.14	26.04	0.4018
78	30	100	633334	3500.01	CP-OFDM QPSK	1@271	22.29	26.19	0.4159



5GNR N78 UL MIMO

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

NR Band	SCS	Band Width	Arfcn	Freq(MHz)	Modulation	RB	ANT2 Power(dBm)	ANT0 Power(dBm)	Conducted Power(dBm)	EIRP(dBm)	EIRP(W)
78	30	10	630334	3455.01	CP-OFDM QPSK	1@1	21.09	21.22	24.17	28.07	0.6412
78	30	10	630334	3455.01	CP-OFDM 16 QAM	1@1	20.02	20.19	23.12	27.02	0.5035
78	30	10	633334	3500.01	CP-OFDM QPSK	1@1	21.11	21.23	24.18	28.08	0.6427
78	30	10	633334	3500.01	CP-OFDM 16 QAM	1@1	20.21	20.14	23.19	27.09	0.5117
78	30	10	636332	3544.98	CP-OFDM QPSK	1@1	21.15	21.39	24.28	28.18	0.6577
78	30	10	636332	3544.98	CP-OFDM 16 QAM	1@1	20.19	20.35	23.28	27.18	0.5224
78	30	15	630500	3457.5	CP-OFDM QPSK	1@1	21.19	21.35	24.28	28.18	0.6577
78	30	15	630500	3457.5	CP-OFDM 16 QAM	1@1	20.15	20.22	23.20	27.10	0.5129
78	30	15	633334	3500.01	CP-OFDM QPSK	1@1	21.12	21.31	24.23	28.13	0.6501
78	30	15	633334	3500.01	CP-OFDM 16 QAM	1@1	20.16	20.23	23.21	27.11	0.5140
78	30	15	636166	3542.49	CP-OFDM QPSK	1@1	21.25	21.32	24.30	28.20	0.6607
78	30	15	636166	3542.49	CP-OFDM 16 QAM	1@1	20.35	20.45	23.41	27.31	0.5383
78	30	20	630668	3460.02	CP-OFDM QPSK	1@1	21.27	21.38	24.34	28.24	0.6668
78	30	20	630668	3460.02	CP-OFDM 16 QAM	1@1	20.22	20.44	23.34	27.24	0.5297
78	30	20	633334	3500.01	CP-OFDM QPSK	1@1	21.08	21.25	24.18	28.08	0.6427
78	30	20	633334	3500.01	CP-OFDM 16 QAM	1@1	20.31	20.51	23.42	27.32	0.5395
78	30	20	636000	3540	CP-OFDM QPSK	1@1	21.09	21.32	24.22	28.12	0.6486
78	30	20	636000	3540	CP-OFDM 16 QAM	1@1	20.1	20.46	23.29	27.19	0.5236
78	30	30	631000	3465	CP-OFDM QPSK	1@1	21.24	21.23	24.25	28.15	0.6531
78	30	30	631000	3465	CP-OFDM 16 QAM	1@1	20.25	20.4	23.34	27.24	0.5297
78	30	30	633334	3500.01	CP-OFDM QPSK	1@1	21.39	21.43	24.42	28.32	0.6792
78	30	30	633334	3500.01	CP-OFDM 16 QAM	1@1	20.35	20.61	23.49	27.39	0.5483
78	30	30	635666	3534.99	CP-OFDM QPSK	1@1	21.42	21.39	24.42	28.32	0.6792
78	30	30	635666	3534.99	CP-OFDM 16 QAM	1@1	20.32	20.57	23.46	27.36	0.5445
78	30	40	631334	3470.01	CP-OFDM QPSK	1@1	21.21	21.4	24.32	28.22	0.6637
78	30	40	631334	3470.01	CP-OFDM 16 QAM	1@1	20.37	20.4	23.40	27.30	0.5370
78	30	40	633334	3500.01	CP-OFDM QPSK	1@1	21.25	21.44	24.36	28.26	0.6699
78	30	40	633334	3500.01	CP-OFDM 16 QAM	1@1	20.3	20.63	23.48	27.38	0.5470
78	30	40	635332	3529.98	CP-OFDM QPSK	1@1	21.39	21.41	24.41	28.31	0.6776
78	30	40	635332	3529.98	CP-OFDM 16 QAM	1@1	20.46	20.7	23.59	27.49	0.5610
78	30	50	631668	3475.02	CP-OFDM QPSK	1@1	21.25	21.49	24.38	28.28	0.6730
78	30	50	631668	3475.02	CP-OFDM 16 QAM	1@1	20.13	20.54	23.35	27.25	0.5309
78	30	50	633334	3500.01	CP-OFDM QPSK	1@1	21.35	21.35	24.36	28.26	0.6699
78	30	50	633334	3500.01	CP-OFDM 16 QAM	1@1	20.39	20.45	23.43	27.33	0.5408
78	30	50	635000	3525	CP-OFDM QPSK	1@1	21.12	21.26	24.20	28.10	0.6457
78	30	50	635000	3525	CP-OFDM 16 QAM	1@1	20.17	20.49	23.34	27.24	0.5297
78	30	60	632000	3480	CP-OFDM QPSK	1@1	21.21	21.56	24.40	28.30	0.6761
78	30	60	632000	3480	CP-OFDM 16 QAM	1@1	20.28	20.45	23.38	27.28	0.5346
78	30	60	633334	3500.01	CP-OFDM QPSK	1@1	21.23	21.36	24.31	28.21	0.6622
78	30	60	633334	3500.01	CP-OFDM 16 QAM	1@1	20.28	20.51	23.41	27.31	0.5383
78	30	60	634666	3519.99	CP-OFDM QPSK	1@1	21.36	21.4	24.39	28.29	0.6745

78	30	60	634666	3519.99	CP-OFDM 16 QAM	1@1	20.44	20.53	23.50	27.40	0.5495
78	30	70	632334	3485.01	CP-OFDM QPSK	1@1	21.21	21.34	24.29	28.19	0.6592
78	30	70	632334	3485.01	CP-OFDM 16 QAM	1@1	20.25	20.32	23.30	27.20	0.5248
78	30	70	633334	3500.01	CP-OFDM QPSK	1@1	21.32	21.32	24.33	28.23	0.6653
78	30	70	633334	3500.01	CP-OFDM 16 QAM	1@1	20.3	20.46	23.39	27.29	0.5358
78	30	70	634332	3514.98	CP-OFDM QPSK	1@1	21.36	21.52	24.45	28.35	0.6839
78	30	70	634332	3514.98	CP-OFDM 16 QAM	1@1	20.24	20.55	23.41	27.31	0.5383
78	30	80	632668	3490.02	CP-OFDM QPSK	1@1	21.1	21.34	24.23	28.13	0.6501
78	30	80	632668	3490.02	CP-OFDM 16 QAM	1@1	20.2	20.59	23.41	27.31	0.5383
78	30	80	633334	3500.01	CP-OFDM QPSK	1@1	21.13	21.32	24.24	28.14	0.6516
78	30	80	633334	3500.01	CP-OFDM 16 QAM	1@1	20.18	20.37	23.29	27.19	0.5236
78	30	80	634000	3510	CP-OFDM QPSK	1@1	21.19	21.28	24.25	28.15	0.6531
78	30	80	634000	3510	CP-OFDM 16 QAM	1@1	20.24	20.37	23.32	27.22	0.5272
78	30	90	633000	3495	CP-OFDM QPSK	1@1	21.11	21.22	24.18	28.08	0.6427
78	30	90	633000	3495	CP-OFDM 16 QAM	1@1	20.34	20.41	23.39	27.29	0.5358
78	30	90	633334	3500.01	CP-OFDM QPSK	1@1	21.05	21.3	24.19	28.09	0.6442
78	30	90	633334	3500.01	CP-OFDM 16 QAM	1@1	20.1	20.24	23.18	27.08	0.5105
78	30	90	633666	3504.99	CP-OFDM QPSK	1@1	21.19	21.47	24.34	28.24	0.6668
78	30	90	633666	3504.99	CP-OFDM 16 QAM	1@1	20.1	20.3	23.21	27.11	0.5140
78	30	100	633334	3500.01	CP-OFDM QPSK	137@68	21.25	21.61	24.44	28.34	0.6823
78	30	100	633334	3500.01	CP-OFDM QPSK	1@1	21.29	21.3	24.31	28.21	0.6622
78	30	100	633334	3500.01	CP-OFDM QPSK	1@271	21.3	21.6	24.46	28.36	0.6855
78	30	100	633334	3500.01	CP-OFDM 16 QAM	137@68	20.39	20.63	23.52	27.42	0.5521
78	30	100	633334	3500.01	CP-OFDM 16 QAM	1@1	20.36	20.51	23.45	27.35	0.5433
78	30	100	633334	3500.01	CP-OFDM 16 QAM	1@271	20.52	20.75	23.65	27.55	0.5689
78	30	100	633334	3500.01	CP-OFDM 64 QAM	137@68	18.87	19.05	21.97	25.87	0.3864
78	30	100	633334	3500.01	CP-OFDM 64 QAM	1@1	18.83	18.98	21.92	25.82	0.3819
78	30	100	633334	3500.01	CP-OFDM 64 QAM	1@271	18.88	19.27	22.09	25.99	0.3972
78	30	100	633334	3500.01	CP-OFDM 256 QAM	137@68	17	17.11	20.07	23.97	0.2495
78	30	100	633334	3500.01	CP-OFDM 256 QAM	1@1	16.69	16.71	19.71	23.61	0.2296
78	30	100	633334	3500.01	CP-OFDM 256 QAM	1@271	16.63	16.83	19.74	23.64	0.2312

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	6902.40	-56.43	-13	-43.43	-47.99	-59.73	8.30	11.60	H
	10353.60	-50.75	-13	-37.75	-48.93	-52.27	10.48	12.00	H
	13804.80	-52.41	-13	-39.41	-53.33	-54.11	11.80	13.50	H
	6902.40	-57.49	-13	-44.49	-49.38	-60.79	8.30	11.60	V
	10353.60	-55.12	-13	-42.12	-52.33	-56.64	10.48	12.00	V
	13804.80	-52.89	-13	-39.89	-53.88	-54.59	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	6902.40	-59.51	-13	-46.51	-51.07	-62.81	8.30	11.60	H
	10353.60	-51.10	-13	-38.10	-49.28	-52.62	10.48	12.00	H
	13804.80	-53.31	-13	-40.31	-54.23	-55.01	11.80	13.50	H
	6902.40	-59.06	-13	-46.06	-50.95	-62.36	8.30	11.60	V
	10353.60	-55.71	-13	-42.71	-52.92	-57.23	10.48	12.00	V
	13804.80	-53.00	-13	-40.00	-53.99	-54.70	11.80	13.50	V
LTE Band30 Middle	4611.00	-65.30	-40	-25.30	-51.37	-71.55	6.45	12.70	H
	6916.50	-60.08	-40	-20.08	-51.66	-63.48	8.40	11.80	H
	9222.00	-56.82	-40	-16.82	-53.96	-59.17	9.65	12.00	H
	4611.00	-65.53	-40	-25.53	-51.78	-71.78	6.45	12.70	V
	6916.50	-61.14	-40	-21.14	-53.03	-64.54	8.40	11.80	V
	9222.00	-57.35	-40	-17.35	-54.02	-59.70	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	6902.40	-56.31	-13	-43.31	-47.87	-59.61	8.30	11.60	H
	10353.60	-55.06	-13	-42.06	-53.24	-56.58	10.48	12.00	H
	13804.80	-53.03	-13	-40.03	-53.95	-54.73	11.80	13.50	H
	6902.40	-55.76	-13	-42.76	-47.65	-59.06	8.30	11.60	V
	10353.60	-55.26	-13	-42.26	-52.47	-56.78	10.48	12.00	V
	13804.80	-52.49	-13	-39.49	-53.48	-54.19	11.80	13.50	V

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