FCC RF Test Report

APPLICANT	:	**Viavi Solutions Inc.**
EQUIPMENT	:	**5G Sub-6 GHz M.2 Module with WCDMA and LTE**
BRAND NAME	:	**VIAVI**
MODEL NAME	:	**RM520N-GL**
FCC ID	:	**WUW-RM520NGL**
STANDARD	:	**47 CFR Part 27 Subpart Q**
CLASSIFICATION	:	**PCS Licensed Transmitter (PCB)**
TEST DATE(S)	:	**Jul. 30, 2024 ~ Nov. 04, 2024**

The product was installed into a host (Brand Name: VIAVI, Model Name: NXE-DEVICE-4M) during the test, only Conducted Power, EIRP and RSE test items are tested in this report.

We, Sporton International Inc. (KunShan), would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.
The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (KunShan), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia

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

TABLE OF CONTENTS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG452001P	Rev. 01	Initial issue of report	Dec. 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 47.20 dB at 13824.00 MHz

Remark 1: Test results are leveraged from module RF 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/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account. 2. The measurement uncertainty please refer to each test result in the section “Measurement Uncertainty”
Disclaimer:
The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

1 General Description

1.1 Applicant

Viavi Solutions Inc.
1445 South Spectrum Boulevard, Suite 102, Chandler, Arizona 85286

1.2 Manufacturer

Viavi Solutions Inc.
1445 South Spectrum Boulevard, Suite 102, Chandler, Arizona 85286

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	5G Sub-6 GHz M.2 Module with WCDMA and LTE
Brand Name	VIAVI
Model Name	RM520N-GL
FCC ID	WUW-RM520NGL
EUT Stage	Identical Prototype

Host Product Feature	
Equipment	XEDGE 2.0
Brand Name	VIAVI
Model Name	NXE-DEVICE-4M
IMEI Code	Conducted : IMEI A: 868371051639645 IMEI B: 868371051635213 IMEI C: 868371051635338 IMEI D: 868371051639819 Radiation : IMEI A: 868371051120539 IMEI B: 868371051121032 IMEI C: 868371051143184 IMEI D: 868371051635312
Applicant	**Viavi Solutions Inc.** 1445 South Spectrum Boulevard, Suite 102, Chandler, Arizona 85286
Manufacturer	**Viavi Solutions Inc.** 1445 South Spectrum Boulevard, Suite 102, Chandler, Arizona 85286

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	**< Module A/B/C/D >** **<Ant. 2>** 5G NR n77: 5.5 dBi 5G NR n78: 5.5 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 Module C ANT2.
2. 5G NR n77/n78 support SA and NSA mode. The whole testing has assessed SA mode for n77 by referring to the higher conducted power.
3. The device supports HPUE mode for 5G NR n77/n78.
4. All the supported EN-DC combinations are verified conducted power, only the EN-DC combination with highest power are shown in the report.
5. The EN-DC mode combination could be referred to the product spec.
6. The four Modules are the same include Power setting, but we still verified the real power, which is within the uncertainty range, so we chose the module of the higher power for testing, each Module has four antennas, for 5G NR n77/n78, only Ant.2 supports TX/RX function, the others are RX only.
7. For RSE testing, we choice the module of the higher conducted Power to test, because between four modules do not support MIMO mode.

1.5 Modification of EUT

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

1.6 Maximum EIRP Power

5G NR n77 SA		PI/2 BPSK / QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
10	3455.01 ~ 3544.98	0.6281	-	0.5998	-
15	3457.50 ~ 3542.49	0.6223	-	0.5984	-
20	3460.02 ~ 3540.00	0.6353	-	0.6039	-
30	3465.00 ~ 3534.99	0.6223	-	0.6081	-
40	3470.01 ~ 3529.98	0.6368	-	0.6223	-
50	3475.02 ~ 3525.00	0.6324	-	0.6067	-
60	3480.00 ~ 3519.99	0.6281	-	0.6194	-
70	3485.01 ~ 3514.98	0.6310	-	0.6194	-
80	3490.02 ~ 3510.00	0.6223	-	0.6039	-
90	3495.00 ~ 3504.99	0.6223	-	0.6109	-
100	3500.01	0.6427	-	0.6397	-

5G NR n78 SA		PI/2 BPSK / QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
10	3455.01 ~ 3544.98	0.6194	-	0.5998	-
15	3457.50 ~ 3542.49	0.6194	-	0.5929	-
20	3460.02 ~ 3540.00	0.6180	-	0.6109	-
30	3465.00 ~ 3534.99	0.6095	-	0.5984	-
40	3470.01 ~ 3529.98	0.6223	-	0.6081	-
50	3475.02 ~ 3525.00	0.6223	-	0.6138	-
60	3480.00 ~ 3519.99	0.6152	-	0.6053	-
70	3485.01 ~ 3514.98	0.6109	-	0.6067	-
80	3490.02 ~ 3510.00	0.6223	-	0.6194	-
90	3495.00 ~ 3504.99	0.6223	-	0.6180	-
100	3500.01	0.6281	-	0.6281	-

Note:

1. All modulations have been tested, and only the worst test results of PSK & QAM are shown in the report.

2. Band n77 overlaps the entire frequency range of Band n78. Therefore, the test results provided in this report covers Band n77 as well as Band n78.

1.7 Testing Site

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

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH04-KS TH01-KS	CN1257	314309

1.8 Test Software

Item	Site	Manufacture	Name	Version
1.	TH01-KS	Tonscend	JS1120-3 test system China_210602	3.3.10
2.	03CH04-KS	AUDIX	E3	210616

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.

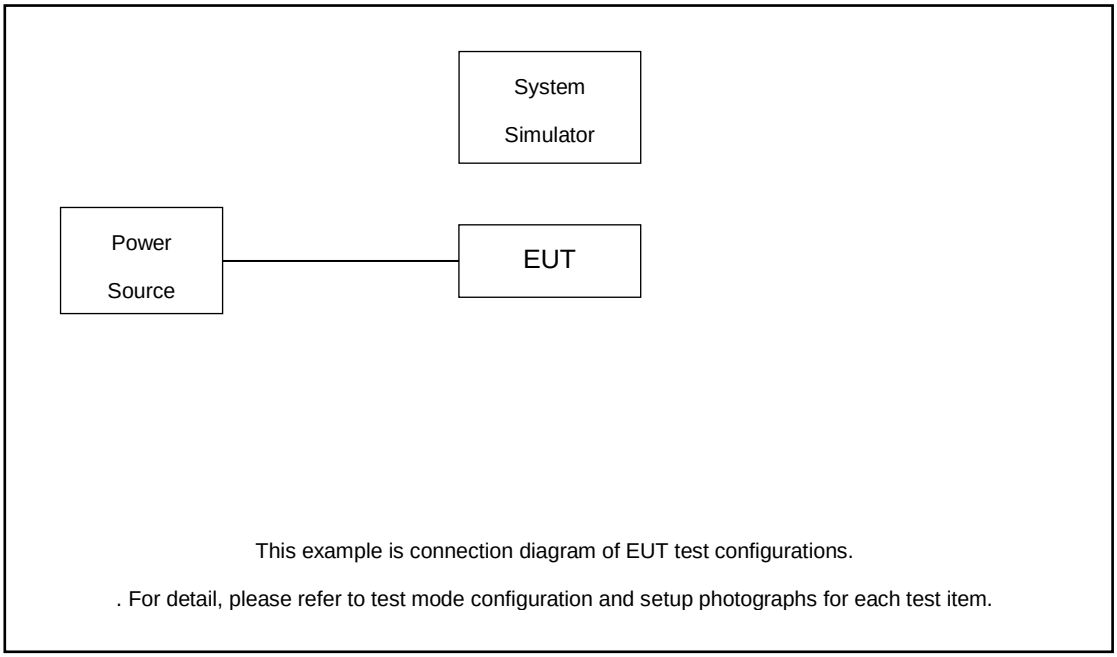
Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission. (Y Plane)

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, Partial RB, Full RB	L, M, H
	5G n78	10M, 15M, 20M, 30M, 40M, 50M, 60M, 70M, 80M, 90M ,100M	All Modulations	1RB, Partial RB, 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, Partial RB, Full RB	L, M, H
	5G n78	10M, 15M, 20M , 30M, 40M, 50M, 60M, 70M, 80M, 90M ,100M	All Modulations	1RB, Partial RB, Full RB	L, M, H
Radiated Spurious Emission	5G n77	Worst case from maximum power			M
	5G n78	Worst case from maximum power			M

Note:

1. 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. Frequency Stability：Normal Voltage = 24V ；Low Voltage =11V.；High Voltage =28V

2.2 Connection Diagram of Test System



This example is connection diagram of EUT test configurations.

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

2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	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

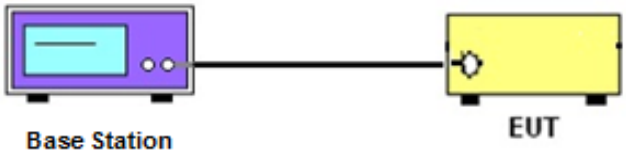
3 Conducted Test Items

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

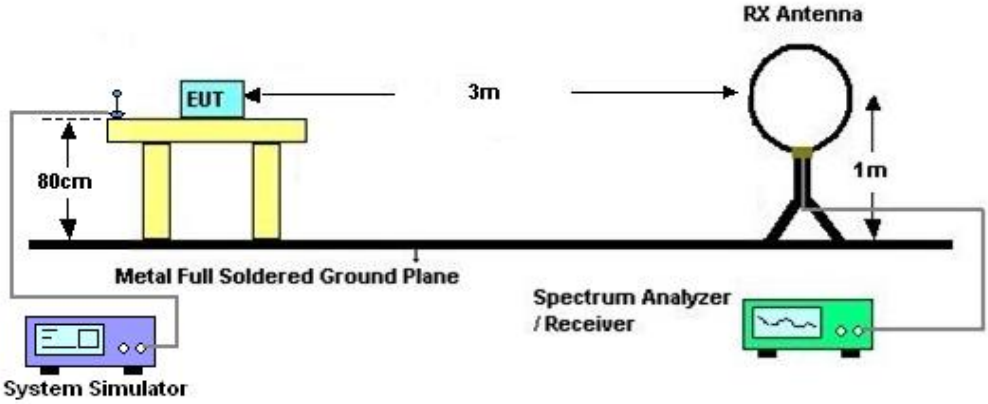
4 Radiated Test Items

4.1 Measuring Instruments

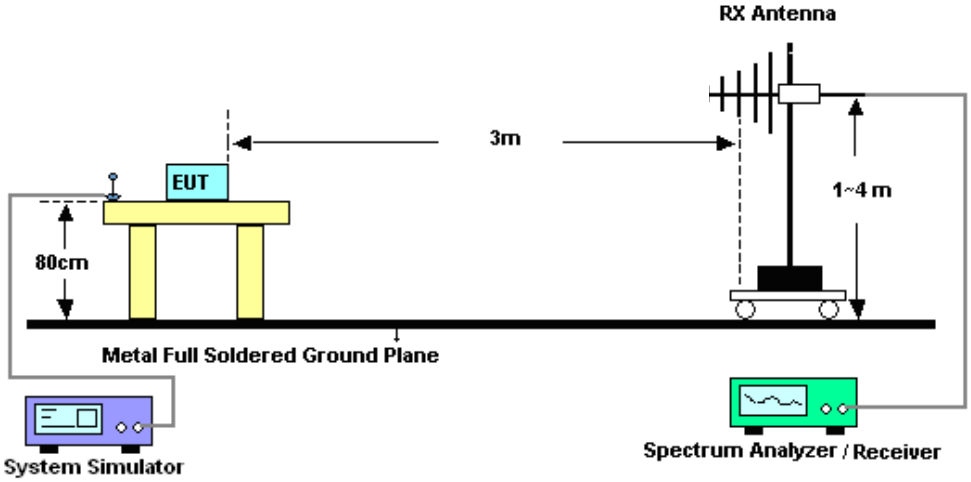
See list of measuring instruments of this test report.

4.2 Test Setup

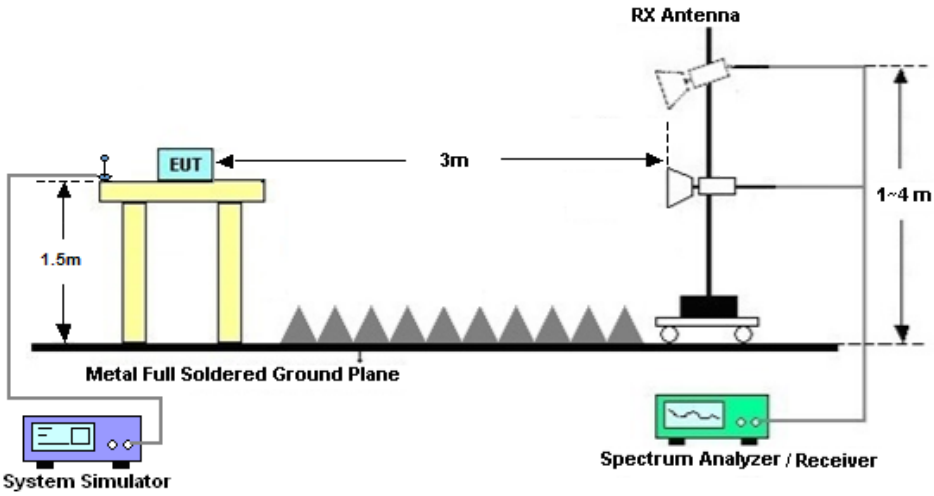
4.2.1 For radiated test below 30MHz



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.
   EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
   ERP (dBm) = 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	101040	10Hz~40GHz	Oct. 10, 2024	Oct. 16, 2024~ Nov. 04, 2024	Oct. 09, 2025	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	NCR	Oct. 16, 2024~ Nov. 04, 2024	NCR	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 11, 2023	Jul. 30, 2024	Oct. 10, 2024	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2E	101125	9kHz~30MHz	Sep. 09, 2023	Jul. 30, 2024	Sep. 08, 2024	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	44483	30MHz-1GHz	Dec. 06, 2023	Jul. 30, 2024	Dec. 05, 2024	Radiation (03CH04-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Oct. 23, 2023	Jul. 30, 2024	Oct. 22, 2024	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 27, 2024	Jul. 30, 2024	Jan. 26, 2025	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	413740	9KHz-1GHz	Jan. 03, 2024	Jul. 30, 2024	Jan. 02, 2025	Radiation (03CH04-KS)
Amplifier	EM	EM18G40GA	060728	18~40GHz	Jan. 02, 2024	Jul. 30, 2024	Jan. 01, 2025	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18GA	060840	1Ghz-18Ghz	Oct. 11, 2023	Jul. 30, 2024	Oct. 10, 2024	Radiation (03CH04-KS)
Amplifier	EM	EM01G18GA	060892	1Ghz-18Ghz	Oct. 11, 2023	Jul. 30, 2024	Oct. 10, 2024	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jul. 30, 2024	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jul. 30, 2024	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jul. 30, 2024	NCR	Radiation (03CH04-KS)

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

Conducted Power	**±0.50 dB**

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

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

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

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

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

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

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

Appendix A. Test Results of Conducted Test

Test Engineer :	Smile Wang	Temperature :	22~23℃
		Relative Humidity :	40~42%

Conducted Output Power(Average power) and EIRP

5G NR n77_Module C Ant2:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP（W）		
Channel					633334		L	M	H
Frequency (MHz)					3500.01				
100	PI/2 BPSK	1	1		22.42			0.6194	
100	PI/2 BPSK	1	137		22.10			0.5754	
100	PI/2 BPSK	1	271		22.26			0.5970	
100	PI/2 BPSK	135	0		22.23			0.5929	
100	PI/2 BPSK	135	69		22.26			0.5970	
100	PI/2 BPSK	135	138		22.31			0.6039	
100	PI/2 BPSK	270	0		22.32			0.6053	
100	QPSK	1	1		22.58			0.6427	
100	QPSK	1	137		22.23			0.5929	
100	QPSK	1	271		22.36			0.6109	
100	QPSK	135	0		22.32			0.6053	
100	QPSK	135	69		22.51			0.6324	
100	QPSK	135	138		22.45			0.6237	
100	QPSK	270	0		22.32			0.6053	
100	16QAM	1	1		22.56			0.6397	
100	64QAM	1	1		22.08			0.5728	
100	256QAM	1	1		20.42			0.3908	
Channel				633000	633334	633668	L	M	H
Frequency (MHz)				3495	3500.01	3505.02			
90	QPSK	1	1	22.41	22.42	22.44	0.6180	0.6194	0.6223
90	16QAM	1	1	22.33	22.36	22.32	0.6067	0.6109	0.6053
Channel				632668	633334	634000	L	M	H
Frequency (MHz)				3490.02	3500.01	3510			
80	QPSK	1	1	22.44	22.43	22.40	0.6223	0.6209	0.6166
80	16QAM	1	1	22.21	22.28	22.31	0.5902	0.5998	0.6039
Channel				632334	633334	634334	L	M	H
Frequency (MHz)				3485.01	3500.01	3515.01			
70	QPSK	1	1	22.47	22.43	22.50	0.6266	0.6209	0.6310
70	16QAM	1	1	22.23	22.29	22.42	0.5929	0.6012	0.6194
Channel				632000	633334	634668	L	M	H
Frequency (MHz)				3480	3500.01	3520.02			
60	QPSK	1	1	22.39	22.48	22.40	0.6152	0.6281	0.6166

60	16QAM	1	1	22.31	22.42	22.27	0.6039	0.6194	0.5984
Channel				631668	633334	635000	L	M	H
Frequency (MHz)				3475.02	3500.01	3525			
50	QPSK	1	1	22.51	22.45	22.39	0.6324	0.6237	0.6152
50	16QAM	1	1	22.33	22.29	22.31	0.6067	0.6012	0.6039
Channel				631334	633334	635334	L	M	H
Frequency (MHz)				3470.01	3500.01	3530.01			
40	QPSK	1	1	22.47	22.54	22.42	0.6266	0.6368	0.6194
40	16QAM	1	1	22.42	22.44	22.38	0.6194	0.6223	0.6138
Channel				631000	633334	635668	L	M	H
Frequency (MHz)				3465	3500.01	3535.02			
30	QPSK	1	1	22.42	22.44	22.42	0.6194	0.6223	0.6194
30	16QAM	1	1	22.34	22.27	22.32	0.6081	0.5984	0.6053
Channel				630668	633334	636000	L	M	H
Frequency (MHz)				3460.02	3500.01	3540			
20	QPSK	1	1	22.53	22.51	22.51	0.6353	0.6324	0.6324
20	16QAM	1	1	22.31	22.23	22.28	0.6039	0.5929	0.5998
Channel				630500	633334	636168	L	M	H
Frequency (MHz)				3457.5	3500.01	3542.52			
15	QPSK	1	1	22.44	22.40	22.42	0.6223	0.6166	0.6194
15	16QAM	1	1	22.24	22.26	22.27	0.5943	0.5970	0.5984
Channel				630334	633334	636334	L	M	H
Frequency (MHz)				3455.01	3500.01	3545.01			
10	QPSK	1	1	22.48	22.46	22.40	0.6281	0.6252	0.6166
10	16QAM	1	1	22.26	22.28	22.21	0.5970	0.5998	0.5902

5G NR n78_Module C Ant2:

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	EIRP（W）		
Channel					633334		L	M	H
Frequency (MHz)					3500.01				
100	PI/2 BPSK	1	1		22.31			0.6039	
100	PI/2 BPSK	1	137		22.04			0.5675	
100	PI/2 BPSK	1	271		22.25			0.5957	
100	PI/2 BPSK	135	0		22.27			0.5984	
100	PI/2 BPSK	135	69		22.41			0.6180	
100	PI/2 BPSK	135	138		22.30			0.6026	
100	PI/2 BPSK	270	0		22.27			0.5984	
100	QPSK	1	1		22.48			0.6281	
100	QPSK	1	137		22.30			0.6026	
100	QPSK	1	271		22.27			0.5984	
100	QPSK	135	0		22.28			0.5998	
100	QPSK	135	69		22.47			0.6266	
100	QPSK	135	138		22.46			0.6252	
100	QPSK	270	0		22.26			0.5970	
100	16QAM	1	1		22.48			0.6281	
100	64QAM	1	1		22.29			0.6012	
100	256QAM	1	1		20.32			0.3819	
Channel				633000	633334	633668	L	M	H
Frequency (MHz)				3495	3500.01	3505.02			
90	QPSK	1	1	22.44	22.42	22.38	0.6223	0.6194	0.6138
90	16QAM	1	1	22.41	22.38	22.32	0.6180	0.6138	0.6053
Channel				632668	633334	634000	L	M	H
Frequency (MHz)				3490.02	3500.01	3510			
80	QPSK	1	1	22.44	22.33	22.44	0.6223	0.6067	0.6223
80	16QAM	1	1	22.42	22.31	22.39	0.6194	0.6039	0.6152
Channel				632334	633334	634334	L	M	H
Frequency (MHz)				3485.01	3500.01	3515.01			
70	QPSK	1	1	22.36	22.35	22.30	0.6109	0.6095	0.6026
70	16QAM	1	1	22.33	22.31	22.22	0.6067	0.6039	0.5916
Channel				632000	633334	634668	L	M	H
Frequency (MHz)				3480	3500.01	3520.02			
60	QPSK	1	1	22.35	22.30	22.39	0.6095	0.6026	0.6152
60	16QAM	1	1	22.26	22.27	22.32	0.5970	0.5984	0.6053
Channel				631668	633334	635000	L	M	H
Frequency (MHz)				3475.02	3500.01	3525			
50	QPSK	1	1	22.44	22.39	22.44	0.6223	0.6152	0.6223
50	16QAM	1	1	22.35	22.31	22.38	0.6095	0.6039	0.6138
Channel				631334	633334	635334	L	M	H
Frequency (MHz)				3470.01	3500.01	3530.01			
40	QPSK	1	1	22.44	22.31	22.44	0.6223	0.6039	0.6223
40	16QAM	1	1	22.33	22.26	22.34	0.6067	0.5970	0.6081

Channel				631000	633334	635668	L	M	H
Frequency (MHz)				3465	3500.01	3535.02			
30	QPSK	1	1	22.35	22.31	22.30	0.6095	0.6039	0.6026
30	16QAM	1	1	22.27	22.23	22.22	0.5984	0.5929	0.5916
Channel				630668	633334	636000	L	M	H
Frequency (MHz)				3460.02	3500.01	3540			
20	QPSK	1	1	22.34	22.41	22.41	0.6081	0.6180	0.6180
20	16QAM	1	1	22.31	22.33	22.36	0.6039	0.6067	0.6109
Channel				630500	633334	636168	L	M	H
Frequency (MHz)				3457.5	3500.01	3542.52			
15	QPSK	1	1	22.42	22.31	22.33	0.6194	0.6039	0.6067
15	16QAM	1	1	22.23	22.21	22.23	0.5929	0.5902	0.5929
Channel				630334	633334	636334	L	M	H
Frequency (MHz)				3455.01	3500.01	3545.01			
10	QPSK	1	1	22.40	22.42	22.30	0.6166	0.6194	0.6026
10	16QAM	1	1	22.23	22.28	22.25	0.5929	0.5998	0.5957

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

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

n77 SA / NR 100MHz / QPSK(ANT2)								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	6912	-63.74	-13	-50.74	-73.95	3.03	13.24	H
	10368	-63.32	-13	-50.32	-72.77	3.56	13.01	H
	13824	-60.85	-13	-47.85	-70.37	3.92	13.44	H
	6912	-63.57	-13	-50.57	-73.78	3.03	13.24	V
	10368	-63.73	-13	-50.73	-73.18	3.56	13.01	V
	13824	-60.90	-13	-47.90	-70.42	3.92	13.44	V

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

n78 SA / NR 100MHz / QPSK(ANT2)								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	6912	-63.40	-13	-50.40	-73.61	3.03	13.24	H
	10368	-62.73	-13	-49.73	-72.18	3.56	13.01	H
	13824	-60.69	-13	-47.69	-70.21	3.92	13.44	H
	6912	-63.56	-13	-50.56	-73.77	3.03	13.24	V
	10368	-63.09	-13	-50.09	-72.54	3.56	13.01	V
	13824	-60.81	-13	-47.81	-70.33	3.92	13.44	V

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

EN-DC_66A_n77A / LTE 20MHz + NR 100MHz / QPSK(0+2)								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	6912	-64.01	-13	-51.01	-74.22	3.03	13.24	H
	10368	-61.23	-13	-48.23	-70.68	3.56	13.01	H
	13824	-60.20	-13	-47.20	-69.72	3.92	13.44	H
	6912	-64.00	-13	-51.00	-74.21	3.03	13.24	V
	10368	-61.56	-13	-48.56	-71.01	3.56	13.01	V
	13824	-60.53	-13	-47.53	-70.05	3.92	13.44	V

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