TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 27** **47 CFR FCC Part 2**
Report No.:	RFCDVB-WTW-P22080669A
FCC ID:	QYLEM9190K
Product:	Wireless Module
Brand:	Getac
Model No.:	EM9190
Received Date:	2023/8/8
Test Date:	2023/8/23 ~ 2023/8/29
Issued Date:	2023/9/6
Applicant:	Getac Technology Corporation.
Address:	5F., Building A, No. 209, Sec.1, Nangang Rd., Nangang Dist., Taipei City 11568, Taiwan, R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN
FCC Registration / Designation Number:	788550 / TW0003

Approved by: Jeremy Lin , **Date:** **2023/9/6**

Jeremy Lin / Project Engineer

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Prepared by : Polly Chien / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFCDVB-WTW-P22080669A	Original release.	2023/9/6

1 Certificate

Product:	Wireless Module
Brand:	Getac
Test Model:	EM9190
Sample Status:	Identical Prototype
Applicant:	Getac Technology Corporation.
Test Date:	2023/8/23 ~ 2023/8/29
Standard:	47 CFR FCC Part 27 47 CFR FCC Part 2
Measurement procedure:	ANSI/TIA/EIA-603-E 2016 ANSI C63.26-2015 KDB 971168 D01 Power Meas License Digital Systems v03r01 KDB 971168 D02 Misc Rev Approv License Devices v02r02 KDB 662911 D01 Multiple Transmitter Output v02r01

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

2 Summary of Test Results

47 CFR FCC Part 27 47 CFR FCC Part 2			
Standard / Clause	Test Item	Result	Remark
FCC 47 CFR Part 2.1046 FCC 47 CFR Part 27.50(j)	Effective Radiated Power and Equivalent Isotropically Radiated Power	Pass	Meet the requirement of limit.
FCC 47 CFR Part 2.1047	Modulation Characteristics	NA	Refer to Note
FCC 47 CFR Part 27.50(d)	Peak to Average Ratio	NA	Refer to Note
FCC 47 CFR Part 2.1049	Bandwidth	NA	Refer to Note
FCC 47 CFR Part 2.1051 FCC 47 CFR Part 27.53(l)	Conducted Spurious Emissions	NA	Refer to Note
FCC 47 CFR Part 2.1053 FCC 47 CFR Part 27.53(l)	Radiated Spurious Emissions below 1GHz	Pass	Minimum passing margin is -29.02 dB at 744.89 MHz
FCC 47 CFR Part 2.1053 FCC 47 CFR Part 27.53(l)	Radiated Spurious Emissions above 1GHz	Pass	Minimum passing margin is -28.99 dB at 7939.98 MHz
FCC 47 CFR Part 2.1055 FCC 47 CFR Part 27.54	Frequency Stability	NA	Refer to Note

Note:

1. This report is issued as a supplementary report. Therefore, only test item of Maximum Peak Output Power and Radiated Spurious Emissions were performed for this report. Other testing data please refer to Sporton International (Shenzhen) Inc. report no.: FG1N1001B_Rev. 01 and FG1N1001D_Rev. 01 for module (Brand: Airprime, Model: EM9190). The end-product K120 has enabled the 5GNR n48, n77 mode by software.
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Specification	Expanded Uncertainty (k=2) (±)
Radiated Spurious Emissions below 1GHz	9 kHz ~ 30 MHz	2.44 dB
	30 MHz ~ 1 GHz	2.95 dB
Radiated Spurious Emissions above 1GHz	1 GHz ~ 18 GHz	2.26 dB
	18 GHz ~ 40 GHz	1.94 dB

The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Wireless Module
Brand	Getac
Test Model	EM9190
Status of EUT	Identical Prototype
Power Supply Rating	3.3 Vdc (Host equipment)

Note:

1. The EUT supports the following configuration.

5GNR	5G FR1		
	Band	SCS	Bandwidth (MHz)
	n77	30kHz	20/30/40/50/60/70/80/90/100

2. The EUT with NSA / SA mode and NSA has been chosen for verification test.
3. The EUT is authorized for use in specific End-product. The model of the K120 was chosen for final test.

Product	Brand	Model	Description
Tablet	Getac	K120	For marketing purpose
		K120G2	
		K120Y (Y= 10, Y can be 0-9, a-z, A-Z, "-", "_" or blank for marketing purpose)	
		K120G2-R	

4. The End-product contains following accessory devices.

Product	Brand	Model	Description
Adapter 1	Getac	MTA190474W4	I/P: 100-240Vac, 1.6A, 50-60Hz O/P: 19.0Vdc, 4.74A (90.0W)
Adapter 2	Chicony	A15-090P1A	I/P: 100-240Vac, 1.2A, 50-60Hz O/P: 19.0Vdc, 4.74A (90.0W)
Battery 1	Getac	BP3S1P2100S-01	11.1Vdc, 2040mAh, 24Wh
Battery 2	Getac	BP4S1P3450P-01	14.4Vdc, 3300mAh, 48Wh
Touch Pen	Getac	340142000064	-
Dock	Getac	K120 Keyboard Dock	-

5. EUT Overview.

Band / Bandwidth	TX Frequency Range (MHz)	Max. EIRP Power				
		BPSK	QPSK	16QAM	64QAM	256QAM
For Part 27Q						
n77 (Channel Bandwidth 20MHz)	3460.02-3540.00	540.754mW (27.33dBm)	550.808mW (27.41dBm)	428.549mW (26.32dBm)	308.319mW (24.89dBm)	195.434mW (22.91dBm)
n77 (Channel Bandwidth 30MHz)	3465.00-3534.99	538.270mW (27.31dBm)	553.350mW (27.43dBm)	428.549mW (26.32dBm)	309.030mW (24.90dBm)	194.089mW (22.88dBm)
n77 (Channel Bandwidth 40MHz)	3470.01-3529.98	540.754mW (27.33dBm)	549.541mW (27.40dBm)	425.598mW (26.29dBm)	309.742mW (24.91dBm)	194.984mW (22.90dBm)
n77 (Channel Bandwidth 50MHz)	3475.02-3525.00	538.270mW (27.31dBm)	552.077mW (27.42dBm)	428.549mW (26.32dBm)	309.742mW (24.91dBm)	194.984mW (22.90dBm)
n77 (Channel Bandwidth 60MHz)	3480.00-3519.99	540.754mW (27.33dBm)	553.350mW (27.43dBm)	426.580mW (26.30dBm)	307.610mW (24.88dBm)	194.984mW (22.90dBm)
n77 (Channel Bandwidth 70MHz)	3485.01-3514.98	537.032mW (27.30dBm)	553.350mW (27.43dBm)	429.536mW (26.33dBm)	309.030mW (24.90dBm)	194.536mW (22.89dBm)
n77 (Channel Bandwidth 80MHz)	3490.02-3510.00	535.797mW (27.29dBm)	550.808mW (27.41dBm)	427.563mW (26.31dBm)	308.319mW (24.89dBm)	193.197mW (22.86dBm)
n77 (Channel Bandwidth 90MHz)	3495.00-3504.99	540.754mW (27.33dBm)	553.350mW (27.43dBm)	426.580mW (26.30dBm)	309.742mW (24.91dBm)	194.536mW (22.89dBm)
n77 (Channel Bandwidth 100MHz)	3500.01	540.754mW (27.33dBm)	555.904mW (27.45dBm)	429.536mW (26.33dBm)	309.742mW (24.91dBm)	195.434mW (22.91dBm)
For Part 27O						
n77 (Channel Bandwidth 20MHz)	3710.01-3969.99	524.807mW (27.20dBm)	524.807mW (27.20dBm)	414.000mW (26.17dBm)	292.415mW (24.66dBm)	185.780mW (22.69dBm)
n77 (Channel Bandwidth 30MHz)	3715.02-3964.98	510.505mW (27.08dBm)	518.800mW (27.15dBm)	405.509mW (26.08dBm)	296.483mW (24.72dBm)	179.887mW (22.55dBm)
n77 (Channel Bandwidth 40MHz)	3720.00-3960.00	537.032mW (27.30dBm)	543.250mW (27.35dBm)	421.697mW (26.25dBm)	305.492mW (24.85dBm)	189.671mW (22.78dBm)
n77 (Channel Bandwidth 50MHz)	3725.01-3954.99	526.017mW (27.21dBm)	168.655mW (22.27dBm)	423.643mW (26.27dBm)	299.916mW (24.77dBm)	187.068mW (22.72dBm)
n77 (Channel Bandwidth 60MHz)	3730.02-3949.98	528.445mW (27.23dBm)	539.511mW (27.32dBm)	428.549mW (26.32dBm)	301.301mW (24.79dBm)	187.499mW (22.73dBm)
n77 (Channel Bandwidth 70MHz)	3735.00-3945.00	535.797mW (27.29dBm)	543.250mW (27.35dBm)	430.527mW (26.34dBm)	306.902mW (24.87dBm)	190.546mW (22.80dBm)
n77 (Channel Bandwidth 80MHz)	3740.01-3939.99	543.250mW (27.35dBm)	549.541mW (27.40dBm)	432.514mW (26.36dBm)	311.889mW (24.94dBm)	194.984mW (22.90dBm)
n77 (Channel Bandwidth 90MHz)	3745.02-3934.98	545.758mW (27.37dBm)	552.077mW (27.42dBm)	442.588mW (26.46dBm)	311.172mW (24.93dBm)	195.434mW (22.91dBm)
n77 (Channel Bandwidth 100MHz)	3750.00-3930.00	549.541mW (27.40dBm)	553.350mW (27.43dBm)	445.656mW (26.49dBm)	315.500mW (24.99dBm)	199.526mW (23.00dBm)

6. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna Type		PIFA	
Antenna Connector		Ipex(MHF)	
Item	Band	Ant	Gain (dBi)
5G NR FR1	n48	Man	2.48
		AUX	3.57
	n77 (3450MHz-3550MHz)	Man	4.49
		AUX	4.25
	n77 (3700MHz-3980MHz)	Man	4.49
		AUX	4.25

* Detail antenna specification please refer to antenna datasheet an antenna gain measurement report.

3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	EUT can be used in the following ways: X-axis/ Y-axis/ Z-axis for tablet mode, and NB mode. Pre-scan these ways and find the worst case as a representative test condition.
Worst Case:	NB mode

For NR n77 (3450-3550 MHz)

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	630668 (3460.02 MHz) 633334 (3500.01 MHz) 636000 (3540.00 MHz)	20 MHz	BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	631000 (3465.00 MHz) 633334 (3500.01 MHz) 635666 (3535.99 MHz)	30 MHz	BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	631334 (3470.01 MHz) 633334 (3500.01 MHz) 635332 (3529.98 MHz)	40 MHz	BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	631668 (3475.02 MHz) 633334 (3500.01 MHz) 635000 (3525.00 MHz)	50 MHz	BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	632000 (3480.00 MHz) 633334 (3500.01 MHz) 634666 (3519.99 MHz)	60 MHz	BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	632334 (3485.01 MHz) 633334 (3500.01 MHz) 634332 (3514.98 MHz)	70 MHz	BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	632668 (3490.02 MHz) 633334 (3500.01 MHz) 634000 (3510.00 MHz)	80 MHz	BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	633000 (3495.00 MHz) 633334 (3500.01 MHz) 633666 (3504.99 MHz)	90 MHz	BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	633334 (3500.01 MHz)	100 MHz	BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
Radiated Emission Below 1GHz	636000 (3540.00 MHz)	20 MHz	QPSK	1 RB
Radiated Emission Above 1GHz	630668 (3460.02 MHz) 633334 (3500.01 MHz) 636000 (3540.00 MHz)	20 MHz	QPSK	1 RB
	631668 (3475.02 MHz) 633334 (3500.01 MHz) 635000 (3525.00 MHz)	50 MHz	QPSK	1 RB
	633334 (3500.01 MHz)	100 MHz	QPSK	1 RB

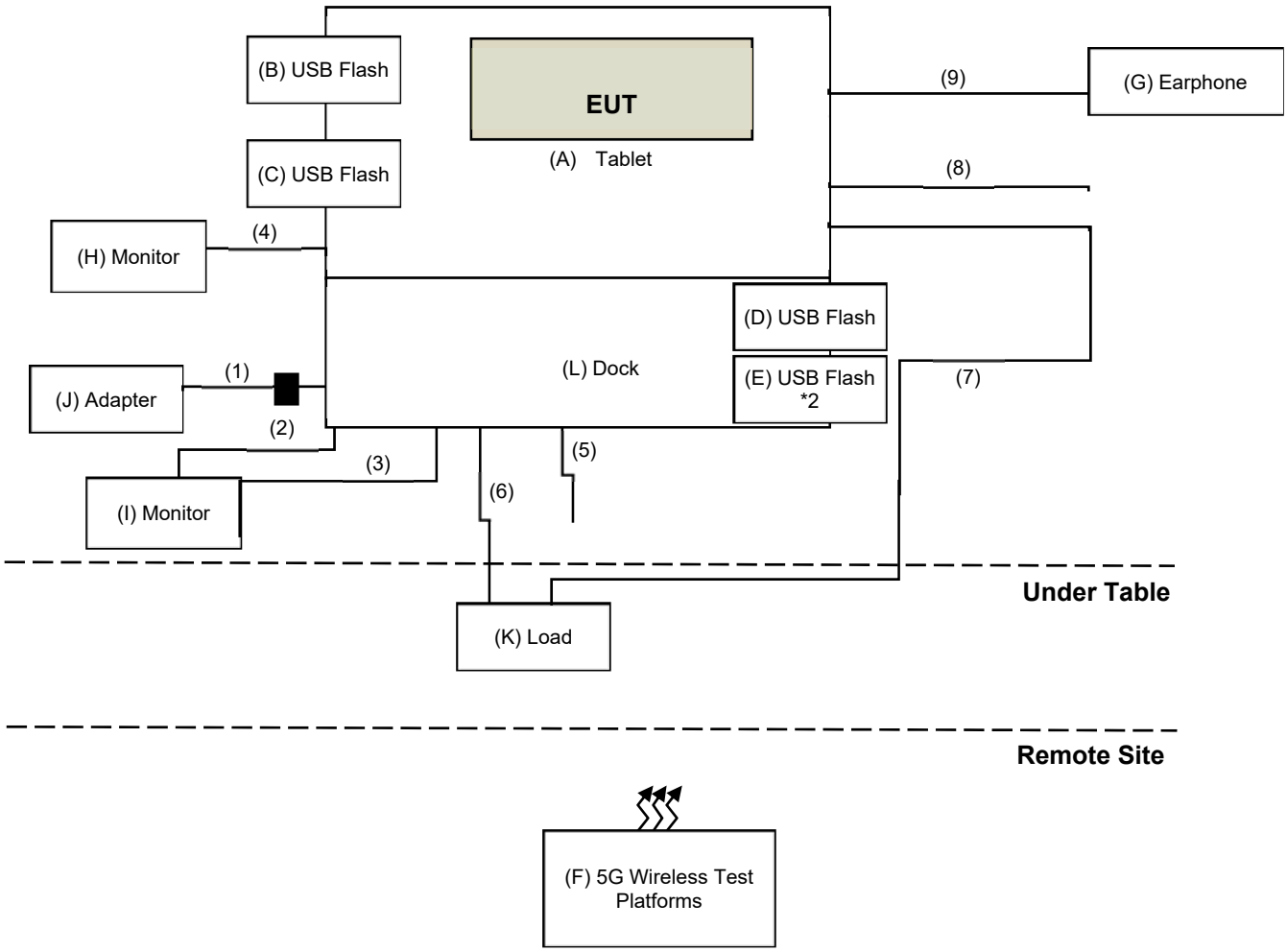
For NR n77 (3700-3980 MHz)

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	647334 (3710.01 MHz) 656000 (3840.00 MHz) 664666 (3969.99 MHz)	20 MHz	BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	647668 (3715.02 MHz) 656000 (3840.00 MHz) 665666 (3964.98 MHz)	30 MHz	BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	648000 (3720.00 MHz) 656000 (3840.00 MHz) 664000 (3960.00 MHz)	40 MHz	BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	648334 (3725.01 MHz) 656000 (3840.00 MHz) 663666 (3954.99 MHz)	50 MHz	BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	648668 (3730.02 MHz) 656000 (3840.00 MHz) 663332 (3949.98 MHz)	60 MHz	BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	649000 (3735.00 MHz) 656000 (3840.00 MHz) 663000 (3945.00 MHz)	70 MHz	BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	649334 (3740.01 MHz) 656000 (3840.00 MHz) 662666 (3939.99 MHz)	80 MHz	BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	649668 (3745.02 MHz) 656000 (3840.00 MHz) 662332 (3934.98 MHz)	90 MHz	BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	650000 (3750.00 MHz) 656000 (3840.00 MHz) 662000 (3930.00 MHz)	100 MHz	BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
Radiated Emission Below 1GHz	663666 (3954.99 MHz)	50 MHz	QPSK	1 RB
Radiated Emission Above 1GHz	647334 (3710.01 MHz) 656000 (3840.00 MHz) 664666 (3969.99 MHz)	20 MHz	QPSK	1 RB
	648334 (3725.01 MHz) 656000 (3840.00 MHz) 663666 (3954.99 MHz)	50 MHz	QPSK	1 RB
	650000 (3750.00 MHz) 656000 (3840.00 MHz) 662000 (3930.00 MHz)	100 MHz	QPSK	1 RB

3.4 Test Program Used and Operation Descriptions

There is no need to controlling software during the test, and the EUT can be paired with the 5G Wireless Test Platforms to test the connection when it is powered on.

3.5 Connection Diagram of EUT and Peripheral Devices



3.6 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Tablet	Getac	K120	N/A	N/A	Provided by applicant
B	USB Flash	SanDisk	SDDDC3-032G	N/A	N/A	Provided by Lab
C	USB Flash	SanDisk	SDDDC3-032G	N/A	N/A	Provided by Lab
D	USB Flash	SanDisk	SDDDC3-032G	N/A	N/A	Provided by Lab
E	USB Flash *2	Transcend	USB 2.0 16GB	N/A	N/A	Provided by Lab
F	5G Wireless Test Platforms	Keysight	E7515B	MY60102114	N/A	Provided by Lab
G	Earphone	APPLE	MB77PFEB	N/A	N/A	Provided by Lab
H	Monitor	DELL	A14S2421HSXmTW	CN-01KWFW-WSL00-24C-711B	N/A	Provided by Lab
I	Monitor	DELL	A14S2421HSXmTW	CN-01KWFW-WSL00-24C-714B	N/A	Provided by Lab
J	Load	N/A	N/A	N/A	N/A	Provided by Lab
K	Adapter	Getac	MTA190474W4	N/A	N/A	Provided by applicant
L	Dock	Getac	K120 Keyboard Dock	N/A	N/A	Provided by applicant

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	Power cable	1	1.8	N	1	Provided by applicant Attached on adapter
2	Display cable	1	1.8	Y	0	Provided by Lab
3	HDMI cable	1	1.8	Y	0	Provided by Lab
4	HDMI cable	1	1.8	Y	0	Provided by Lab
5	RS232 cable	1	1.5	N	0	Provided by Lab
6	RJ45 cable	1	1.8	N	0	Provided by Lab
7	RJ45 cable	1	1.8	N	0	Provided by Lab
8	RS232 cable	1	1.5	N	0	Provided by Lab
9	Audio cable	1	1.5	N	0	Provided by Lab

4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
PXA Signal Analyzer KEYSIGHT	N9030B	MY57140488	2023/3/6	2024/03/05
5G Wireless Test Platforms Keysight	E7515B	MY60102114	2023/5/18	2024/5/17
Software BV	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2023/8/29

4.2 Radiated Spurious Emissions below 1GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower &Turn Max-Full	MFA-440H	AT93021705	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB9168	9168-472	2022/10/21	2023/10/20
Loop Antenna EMCI	EM-6879	269	2022/9/19	2023/9/18
Loop Antenna TESEQ	HLA 6121	45745	2023/8/8	2024/8/7
Pre-Ammlifier EMCI	EMC 330H	980112	2022/10/1	2023/9/30
Pre-amplifier EMCI	EMC001340	980201	2022/9/23	2023/9/22
RF Coaxial Cable EMCI	5D-NM-BM	140903+140902	2023/1/7	2024/1/6
RF Coaxial Cable WORKEN	8D-FB	Cable-Ch10-01	2022/10/1	2023/9/30
Signal Analyzer Agilent	N9010A	MY52220207	2023/1/3	2024/1/2
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Test Receiver KEYSIGHT	N9038A	MY55420137	2023/5/3	2024/5/2
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MG-7802	N/A	N/A	N/A
5G Wireless Test Platforms Keysight	E7515B	MY59321376	2023/03/13	2024/03/12

Notes:

1. The test was performed in HY - 966 chamber 5.
2. Tested Date: 2023/8/23

4.3 Radiated Spurious Emissions above 1GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower &Turn Max-Full	MFA-440H	AT93021705	N/A	N/A
Boresight antenna tower fixture BV	BAF-02	7	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-969	2022/11/13	2023/11/12
	BBHA 9170	148	2022/11/13	2023/11/12
Pre-Ammlifier EMCI	EMC 184045	980116	2022/10/1	2023/9/30
Pre-Amplifier EMCI	EMC 012645	980115	2022/10/1	2023/9/30
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	2023/7/8	2024/7/7
	EMC102-KM-KM-3000	150929	2023/7/8	2024/7/7
	EMC104-SM-SM-8000+3000	171005	2022/10/1	2023/9/30
RF Coaxial Cable HUBER SUHNER	SUCOFLEX 104	EMC104-SM-SM-1000(140807)	2022/10/1	2023/9/30
RF FLITER MICRO-TRONICS	BRM17690	004	2023/1/11	2024/1/10
	BRM50716	060	2023/1/11	2024/1/10
Signal Analyzer Agilent	N9010A	MY52220207	2023/1/3	2024/1/2
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Test Receiver KEYSIGHT	ESR	101451	2023/3/27	2024/3/26
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MG-7802	N/A	N/A	N/A
5G Wireless Test Platforms Keysight	E7515B	MY59321376	2023/03/13	2024/03/12

Notes:

1. The test was performed in HY - 966 chamber 5.
2. Tested Date: 2023/8/23

5 Limits of Test Items

5.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

For NR n77 (3450-3550 MHz):

Mobile devices are limited to 1Watt (30 dBm) EIRP.

For NR n77 (3700-3980 MHz):

Mobile and portable stations are limited to 1 Watt EIRP.

5.2 Radiated Spurious Emissions below 1GHz

For NR n77 (3450-3550 MHz):

According to FCC 47 CFR part 27.53(n), for operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

For NR n77 (3700-3980 MHz):

According to FCC 47 CFR part 27.53(l), for mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

5.3 Radiated Spurious Emissions above 1GHz

For NR n77 (3450-3550 MHz):

According to FCC 47 CFR part 27.53(n), for operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

For NR n77 (3700-3980 MHz):

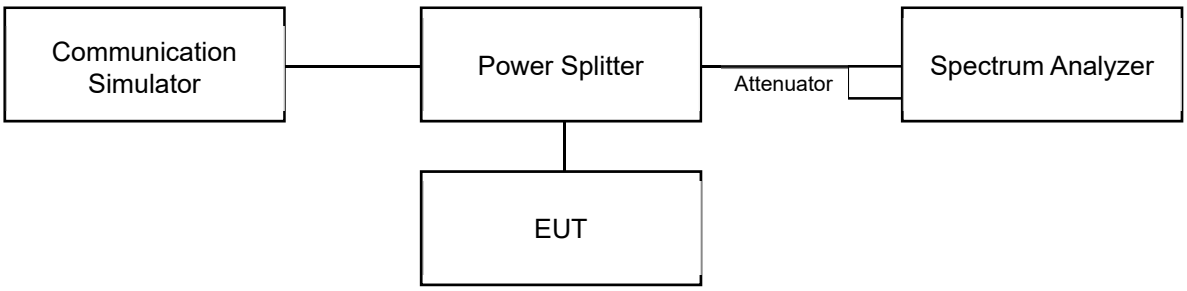
According to FCC 47 CFR part 27.53(l), for mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

6 Test Arrangements

6.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

6.1.1 Test Setup

Conducted Power Measurement:



6.1.2 Test Procedure

Conducted Power Measurement:

The EUT is configured by emulator to set data modulation and maximum power using WWAN technology. The power measurement was performed on emulator and power value was measured from power function on emulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

Measurement method refers to ANSI C63.26 section 5.2.4.4.

a. Set span to 2 × to 3 × the OBW.
b. Set RBW = 1% to 5% of the OBW.
c. Set VBW ≥ 3 × RBW.
d. Set number of measurement points in sweep ≥ 2 × span / RBW.
e. Set Sweep time = auto-couple.
f. Detector = power averaging (rms).
g. Set sweep trigger to “free run.”
h. Trace average at least 100 traces in power averaging (rms) mode.
i. Compute power by integrating the spectrum across the OBW of the signal using the instrument’s band or channel power measurement function with band/channel limits set equal to the OBW band edges.
j. If Duty cycle < 98%, Add 10 log (1/duty cycle) to the measured power level to compute the average power during continuous transmission.

Maximum EIRP / ERP

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation as follows:

$EIRP = P_{Meas} + G_T$

$ERP = P_{Meas} + G_T - 2.15$

where

ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas}, e.g., dBm or dBW)

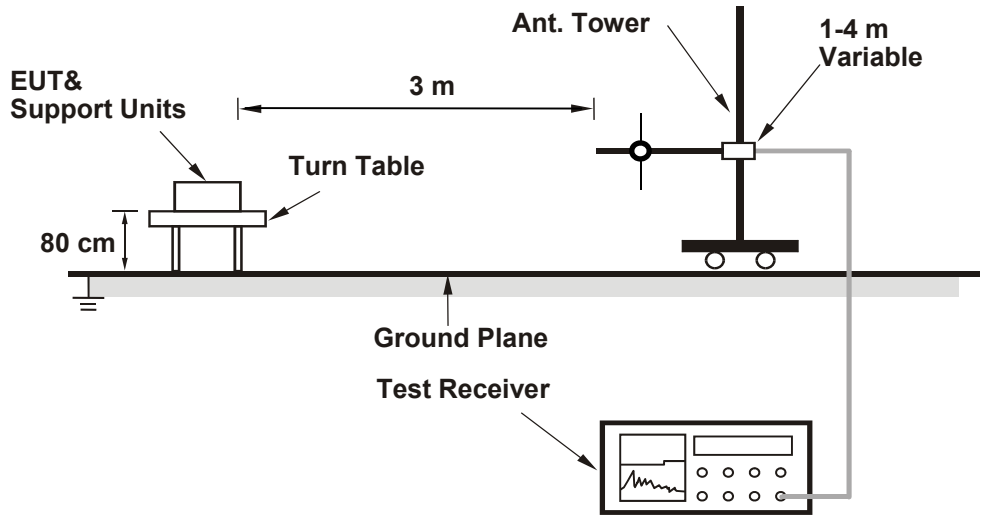
P_{Meas} measured transmitter output power or PSD, in dBm or dBW

G_T gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

6.2 Radiated Spurious Emissions below 1GHz

6.2.1 Test Setup

For radiated emission 30 MHz to 1 GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.2.2 Test Procedure

The EUT is configured by emulator to set data modulation and maximum power using WWAN technology.

a. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) height of turn table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

b. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

c. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.

d. Following C63.26 section 5.5 and 5.2.7

e. EIRP (dBm) = E (dBμV/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m.

f. ERP (dBm) = E (dBμV/m) + 20log(D) - 104.8 - 2.15; where D is the measurement distance (in the far field region) in m.

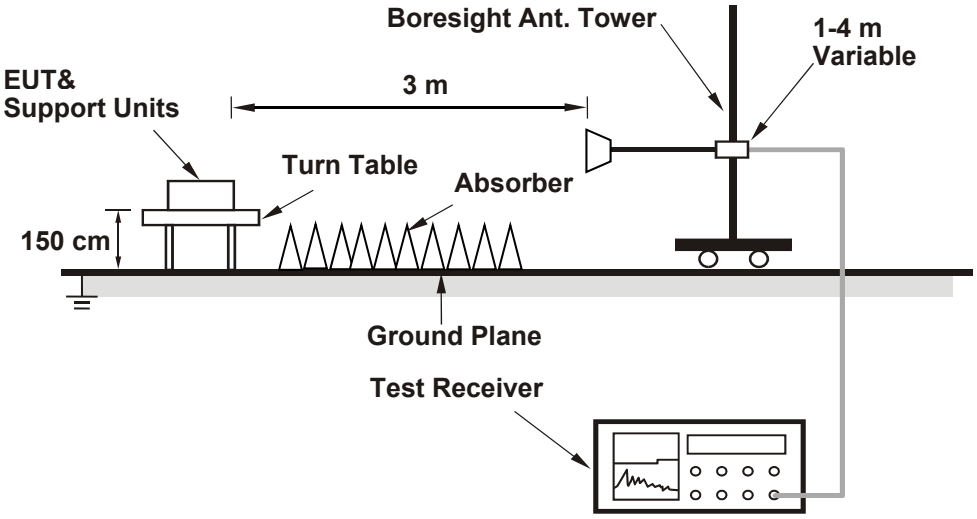
Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz.
2. The emission levels were against the limit of frequency range 9 kHz ~ 30 MHz:
   The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

6.3 Radiated Spurious Emissions above 1GHz

6.3.1 Test Setup

For radiated emission above 1 GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.3.2 Test Procedure

The EUT is configured by emulator to set data modulation and maximum power using WWAN technology.

a. In the semi-anechoic chamber, EUT placed on the 1.5 m height of turn table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

b. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

c. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.

d. Following C63.26 section 5.5 and 5.2.7

e. EIRP (dBm) = E (dBμV/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m.

f. ERP (dBm) = E (dBμV/m) + 20log(D) - 104.8 - 2.15; where D is the measurement distance (in the far field region) in m.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz.

7 Test Results of Test Item

7.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

Input Power:	120Vac, 60Hz	Environmental Conditions:	21°C, 70% RH	Tested By:	James Yang

7.1.1 NR n77 (3450-3550 MHz) SCS 30 kHz

Conducted Output Power (dBm)

NR Band 77						
BW	MCS Index	RB Size	RB Offset	Mid		
		Channel		633334		
		Frequency (MHz)		3500.01		
100M	DFT-S PI/2 BPSK	1	1	22.84		
100M	DFT-S QPSK	1	1	22.96		
		1	137	22.91		
		1	271	22.81		
		135	0	21.97		
		135	69	22.93		
		135	138	21.94		
		270	0	21.93		
100M	DFT-S 16QAM	1	1	21.84		
100M	DFT-S 64QAM	1	1	20.42		
100M	DFT-S 256QAM	1	1	18.42		
100M	CP QPSK	1	1	21.35		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		633000	633334	633666
		Frequency (MHz)		3495	3500.01	3504.99
90M	DFT-S PI/2 BPSK	1	1	22.76	22.84	22.82
90M	DFT-S QPSK	1	1	22.88	22.9	22.94
		1	123	22.86	22.91	22.9
		1	243	22.77	22.71	22.78
		120	0	21.87	21.97	21.97
		120	63	22.91	22.93	22.88
		120	125	21.93	21.91	21.85
		243	0	21.88	21.85	21.88
90M	DFT-S 16QAM	1	1	21.79	21.81	21.75
90M	DFT-S 64QAM	1	1	20.42	20.36	20.34
90M	DFT-S 256QAM	1	1	18.39	18.4	18.35
90M	CP QPSK	1	1	21.27	21.29	21.35

NR Band 77						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		632668	633334	63400
		Frequency (MHz)		3490.02	3500.01	3510
80M	DFT-S PI/2 BPSK	1	1	22.78	22.75	22.80
80M	DFT-S QPSK	1	1	22.89	22.87	22.90
		1	109	22.90	22.85	22.83
		1	215	22.75	22.79	22.78
		108	0	21.88	21.95	21.95
		108	55	22.92	22.92	22.88
		108	109	21.84	21.94	21.93
		216	0	21.89	21.90	21.84
80M	DFT-S 16QAM	1	1	21.77	21.80	21.82
80M	DFT-S 64QAM	1	1	20.40	20.34	20.40
80M	DFT-S 256QAM	1	1	18.37	18.35	18.35
80M	CP QPSK	1	1	21.32	21.29	21.32
BW	MCS Index	Channel		632334	633334	634332
		Frequency (MHz)		3485.01	3500.01	3514.98
70M	DFT-S PI/2 BPSK	1	1	22.80	22.81	22.81
70M	DFT-S QPSK	1	1	22.89	22.94	22.85
		1	95	22.84	22.86	22.89
		1	187	22.76	22.78	22.80
		90	0	21.96	21.91	21.93
		90	50	22.86	22.84	22.93
		90	99	21.90	21.84	21.88
		180	0	21.93	21.85	21.83
70M	DFT-S 16QAM	1	1	21.84	21.78	21.83
70M	DFT-S 64QAM	1	1	20.40	20.36	20.41
70M	DFT-S 256QAM	1	1	18.37	18.32	18.40
70M	CP QPSK	1	1	21.26	21.25	21.35
BW	MCS Index	Channel		632000	633334	634666
		Frequency (MHz)		3480	3500.01	3519.99
60M	DFT-S PI/2 BPSK	1	1	22.83	22.77	22.84
60M	DFT-S QPSK	1	1	22.93	22.94	22.92
		1	81	22.81	22.85	22.88
		1	160	22.76	22.79	22.74
		81	0	21.90	21.92	21.97
		81	41	22.93	22.91	22.93
		81	81	21.87	21.84	21.87
		162	0	21.92	21.91	21.91
60M	DFT-S 16QAM	1	1	21.75	21.74	21.81
60M	DFT-S 64QAM	1	1	20.39	20.32	20.36
60M	DFT-S 256QAM	1	1	18.41	18.37	18.32
60M	CP QPSK	1	1	21.32	21.28	21.31

NR Band 77						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		631668	633334	635000
		Frequency (MHz)		3475.02	3500.01	3525
50M	DFT-S PI/2 BPSK	1	1	22.79	22.76	22.82
50M	DFT-S QPSK	1	1	22.93	22.86	22.89
		1	67	22.81	22.84	22.84
		1	131	22.72	22.81	22.80
		64	0	21.93	21.87	21.94
		64	35	22.92	22.90	22.84
		64	69	21.94	21.92	21.91
		128	0	21.92	21.87	21.87
50M	DFT-S 16QAM	1	1	21.83	21.80	21.76
50M	DFT-S 64QAM	1	1	20.36	20.42	20.39
50M	DFT-S 256QAM	1	1	18.41	18.37	18.34
50M	CP QPSK	1	1	21.27	21.31	21.33
BW	MCS Index	Channel		631334	633334	635332
		Frequency (MHz)		3470.01	3500.01	3529.98
40M	DFT-S PI/2 BPSK	1	1	22.74	22.84	22.84
40M	DFT-S QPSK	1	1	22.85	22.87	22.9
		1	53	22.81	22.85	22.85
		1	104	22.79	22.74	22.78
		50	0	21.9	21.92	21.95
		50	28	22.89	22.88	22.91
		50	56	21.91	21.89	21.93
		100	0	21.87	21.86	21.9
40M	DFT-S 16QAM	1	1	21.74	21.77	21.8
40M	DFT-S 64QAM	1	1	20.4	20.42	20.42
40M	DFT-S 256QAM	1	1	18.41	18.38	18.37
40M	CP QPSK	1	1	21.31	21.35	21.32
BW	MCS Index	Channel		631000	633334	635666
		Frequency (MHz)		3465	3500.01	3534.99
30M	DFT-S PI/2 BPSK	1	1	22.75	22.8	22.82
30M	DFT-S QPSK	1	1	22.85	22.86	22.94
		1	39	22.87	22.87	22.88
		1	76	22.73	22.73	22.76
		36	0	21.97	21.97	21.87
		36	21	22.92	22.85	22.85
		36	42	21.86	21.94	21.93
		75	0	21.9	21.91	21.87
30M	DFT-S 16QAM	1	1	21.79	21.79	21.83
30M	DFT-S 64QAM	1	1	20.41	20.34	20.35
30M	DFT-S 256QAM	1	1	18.39	18.36	18.39
30M	CP QPSK	1	1	21.35	21.35	21.25

NR Band 77						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		630668	633334	636000
		Frequency (MHz)		3460.02	3500.01	3540
20M	DFT-S PI/2 BPSK	1	1	22.81	22.84	22.74
20M	DFT-S QPSK	1	1	22.86	22.88	22.9
		1	26	22.91	22.86	22.82
		1	49	22.77	22.73	22.75
		25	0	21.93	21.96	21.96
		25	13	22.92	22.9	22.89
		25	26	21.94	21.89	21.92
		50	0	21.85	21.84	21.86
20M	DFT-S 16QAM	1	1	21.78	21.82	21.83
20M	DFT-S 64QAM	1	1	20.34	20.36	20.4
20M	DFT-S 256QAM	1	1	18.42	18.4	18.41
20M	CP QPSK	1	1	21.31	21.29	21.35

EIRP Power (dBm)

NR Band 77						
BW	MCS Index	RB Size	RB Offset	Mid		
		Channel		633334		
		Frequency (MHz)		3500.01		
100M	DFT-S PI/2 BPSK	1	1	27.33		
100M	DFT-S QPSK	1	1	27.45		
		1	137	27.40		
		1	271	27.30		
		135	0	26.46		
		135	69	27.42		
		135	138	26.43		
		270	0	26.42		
100M	DFT-S 16QAM	1	1	26.33		
100M	DFT-S 64QAM	1	1	24.91		
100M	DFT-S 256QAM	1	1	22.91		
100M	CP QPSK	1	1	25.84		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		633000	633334	633666
		Frequency (MHz)		3495	3500.01	3504.99
90M	DFT-S PI/2 BPSK	1	1	27.25	27.33	27.31
90M	DFT-S QPSK	1	1	27.37	27.39	27.43
		1	123	27.35	27.40	27.39
		1	243	27.26	27.20	27.27
		120	0	26.36	26.46	26.46
		120	63	27.40	27.42	27.37
		120	125	26.42	26.40	26.34
		243	0	26.37	26.34	26.37
90M	DFT-S 16QAM	1	1	26.28	26.30	26.24
90M	DFT-S 64QAM	1	1	24.91	24.85	24.83
90M	DFT-S 256QAM	1	1	22.88	22.89	22.84
90M	CP QPSK	1	1	25.76	25.78	25.84
BW	MCS Index	Channel		632668	633334	63400
		Frequency (MHz)		3490.02	3500.01	3510
80M	DFT-S PI/2 BPSK	1	1	27.27	27.24	27.29
80M	DFT-S QPSK	1	1	27.38	27.36	27.39
		1	109	27.39	27.34	27.32
		1	215	27.24	27.28	27.27
		108	0	26.37	26.44	26.44
		108	55	27.41	27.41	27.37
		108	109	26.33	26.43	26.42
		216	0	26.38	26.39	26.33
80M	DFT-S 16QAM	1	1	26.26	26.29	26.31
80M	DFT-S 64QAM	1	1	24.89	24.83	24.89
80M	DFT-S 256QAM	1	1	22.86	22.84	22.84
80M	CP QPSK	1	1	25.81	25.78	25.81

*EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

NR Band 77						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		632334	633334	634332
		Frequency (MHz)		3485.01	3500.01	3514.98
70M	DFT-S PI/2 BPSK	1	1	27.29	27.30	27.30
70M	DFT-S QPSK	1	1	27.38	27.43	27.34
		1	95	27.33	27.35	27.38
		1	187	27.25	27.27	27.29
		90	0	26.45	26.40	26.42
		90	50	27.35	27.33	27.42
		90	99	26.39	26.33	26.37
		180	0	26.42	26.34	26.32
70M	DFT-S 16QAM	1	1	26.33	26.27	26.32
70M	DFT-S 64QAM	1	1	24.89	24.85	24.90
70M	DFT-S 256QAM	1	1	22.86	22.81	22.89
70M	CP QPSK	1	1	25.75	25.74	25.84
BW	MCS Index	Channel		632000	633334	634666
		Frequency (MHz)		3480	3500.01	3519.99
60M	DFT-S PI/2 BPSK	1	1	27.32	27.26	27.33
60M	DFT-S QPSK	1	1	27.42	27.43	27.41
		1	81	27.30	27.34	27.37
		1	160	27.25	27.28	27.23
		81	0	26.39	26.41	26.46
		81	41	27.42	27.40	27.42
		81	81	26.36	26.33	26.36
		162	0	26.41	26.40	26.40
60M	DFT-S 16QAM	1	1	26.24	26.23	26.30
60M	DFT-S 64QAM	1	1	24.88	24.81	24.85
60M	DFT-S 256QAM	1	1	22.90	22.86	22.81
60M	CP QPSK	1	1	25.81	25.77	25.80
BW	MCS Index	Channel		631668	633334	635000
		Frequency (MHz)		3475.02	3500.01	3525
50M	DFT-S PI/2 BPSK	1	1	27.28	27.25	27.31
50M	DFT-S QPSK	1	1	27.42	27.35	27.38
		1	67	27.30	27.33	27.33
		1	131	27.21	27.30	27.29
		64	0	26.42	26.36	26.43
		64	35	27.41	27.39	27.33
		64	69	26.43	26.41	26.40
		128	0	26.41	26.36	26.36
50M	DFT-S 16QAM	1	1	26.32	26.29	26.25
50M	DFT-S 64QAM	1	1	24.85	24.91	24.88
50M	DFT-S 256QAM	1	1	22.90	22.86	22.83
50M	CP QPSK	1	1	25.76	25.80	25.82

*EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

NR Band 77						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		631334	633334	635332
		Frequency (MHz)		3470.01	3500.01	3529.98
40M	DFT-S PI/2 BPSK	1	1	27.23	27.33	27.33
40M	DFT-S QPSK	1	1	27.34	27.36	27.39
		1	53	27.30	27.34	27.34
		1	104	27.28	27.23	27.27
		50	0	26.39	26.41	26.44
		50	28	27.38	27.37	27.40
		50	56	26.40	26.38	26.42
		100	0	26.36	26.35	26.39
40M	DFT-S 16QAM	1	1	26.23	26.26	26.29
40M	DFT-S 64QAM	1	1	24.89	24.91	24.91
40M	DFT-S 256QAM	1	1	22.90	22.87	22.86
40M	CP QPSK	1	1	25.80	25.84	25.81
BW	MCS Index	Channel		631000	633334	635666
		Frequency (MHz)		3465	3500.01	3534.99
30M	DFT-S PI/2 BPSK	1	1	27.24	27.29	27.31
30M	DFT-S QPSK	1	1	27.34	27.35	27.43
		1	39	27.36	27.36	27.37
		1	76	27.22	27.22	27.25
		36	0	26.46	26.46	26.36
		36	21	27.41	27.34	27.34
		36	42	26.35	26.43	26.42
		75	0	26.39	26.40	26.36
30M	DFT-S 16QAM	1	1	26.28	26.28	26.32
30M	DFT-S 64QAM	1	1	24.90	24.83	24.84
30M	DFT-S 256QAM	1	1	22.88	22.85	22.88
30M	CP QPSK	1	1	25.84	25.84	25.74
BW	MCS Index	Channel		630668	633334	636000
		Frequency (MHz)		3460.02	3500.01	3540
20M	DFT-S PI/2 BPSK	1	1	27.30	27.33	27.23
20M	DFT-S QPSK	1	1	27.35	27.37	27.39
		1	26	27.40	27.35	27.31
		1	49	27.26	27.22	27.24
		25	0	26.42	26.45	26.45
		25	13	27.41	27.39	27.38
		25	26	26.43	26.38	26.41
		50	0	26.34	26.33	26.35
20M	DFT-S 16QAM	1	1	26.27	26.31	26.32
20M	DFT-S 64QAM	1	1	24.83	24.85	24.89
20M	DFT-S 256QAM	1	1	22.91	22.89	22.90
20M	CP QPSK	1	1	25.80	25.78	25.84

*EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

7.1.2 NR n77 (3700-3980 MHz) SCS 30 kHz

Conducted Output Power (dBm)

NR Band 77						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		650000	656000	662000
		Frequency (MHz)		3750	3840	3930
100M	DFT-S PI/2 BPSK	1	1	22.87	22.91	22.75
100M	DFT-S QPSK	1	1	22.93	22.94	22.86
		1	137	22.93	22.91	22.91
		1	271	22.88	22.93	22.77
		135	0	21.88	21.96	21.83
		135	69	22.89	22.93	22.76
		135	138	21.94	21.97	21.86
		270	0	21.93	21.95	21.92
100M	DFT-S 16QAM	1	1	22.00	21.93	21.86
100M	DFT-S 64QAM	1	1	20.50	20.47	20.39
100M	DFT-S 256QAM	1	1	18.44	18.51	18.29
100M	CP QPSK	1	1	21.38	21.48	21.27
BW	MCS Index	Channel		649668	656000	662332
		Frequency (MHz)		3745.02	3840	3934.98
90M	DFT-S PI/2 BPSK	1	1	22.88	22.88	22.72
90M	DFT-S QPSK	1	1	22.87	22.93	22.85
		1	109	22.92	22.93	22.86
		1	215	22.84	22.92	22.74
		108	0	21.79	21.89	21.79
		108	55	22.89	22.84	22.74
		108	109	21.85	21.88	21.76
		216	0	21.86	21.88	21.85
90M	DFT-S 16QAM	1	1	21.93	21.97	21.83
90M	DFT-S 64QAM	1	1	20.44	20.41	20.37
90M	DFT-S 256QAM	1	1	18.29	18.42	18.20
90M	CP QPSK	1	1	21.37	21.36	21.31
BW	MCS Index	Channel		649334	656000	662666
		Frequency (MHz)		3740.01	3840	3939.99
80M	DFT-S PI/2 BPSK	1	1	22.86	22.84	22.69
80M	DFT-S QPSK	1	1	22.86	22.91	22.84
		1	109	22.90	22.89	22.83
		1	215	22.83	22.91	22.70
		108	0	21.77	21.87	21.79
		108	55	22.84	22.77	22.65
		108	109	21.77	21.80	21.76
		216	0	21.79	21.88	21.70
80M	DFT-S 16QAM	1	1	21.86	21.87	21.79
80M	DFT-S 64QAM	1	1	20.45	20.43	20.28
80M	DFT-S 256QAM	1	1	18.29	18.41	18.17
80M	CP QPSK	1	1	21.23	21.35	21.22

NR Band 77						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		649000	656000	663000
		Frequency (MHz)		3735	3840	3945
70M	DFT-S PI/2 BPSK	1	1	22.79	22.80	22.67
70M	DFT-S QPSK	1	1	22.78	22.81	22.83
		1	95	22.86	22.82	22.73
		1	187	22.73	22.83	22.65
		90	0	21.67	21.82	21.69
		90	50	22.84	22.71	22.59
		90	99	21.72	21.70	21.73
		180	0	21.86	21.84	21.60
70M	DFT-S 16QAM	1	1	21.80	21.85	21.83
70M	DFT-S 64QAM	1	1	20.38	20.33	20.24
70M	DFT-S 256QAM	1	1	18.26	18.31	18.19
70M	CP QPSK	1	1	21.21	21.34	21.21
BW	MCS Index	Channel		648668	656000	663332
		Frequency (MHz)		3730.02	3840	3949.98
60M	DFT-S PI/2 BPSK	1	1	22.74	22.74	22.66
60M	DFT-S QPSK	1	1	22.75	22.72	22.83
		1	81	22.80	22.80	22.70
		1	160	22.64	22.82	22.62
		81	0	21.67	21.72	21.65
		81	41	22.79	22.63	22.53
		81	81	21.62	21.68	21.73
		162	0	21.75	21.79	21.61
60M	DFT-S 16QAM	1	1	21.73	21.75	21.83
60M	DFT-S 64QAM	1	1	20.28	20.30	20.23
60M	DFT-S 256QAM	1	1	18.16	18.24	18.05
60M	CP QPSK	1	1	21.11	21.32	21.09
BW	MCS Index	Channel		648334	656000	663666
		Frequency (MHz)		3725.01	3840	3954.99
50M	DFT-S PI/2 BPSK	1	1	22.69	22.72	22.66
50M	DFT-S QPSK	1	1	22.66	22.70	22.74
		1	67	22.78	22.77	22.70
		1	131	22.55	22.76	22.60
		64	0	21.63	21.68	21.55
		64	35	22.78	22.55	22.45
		64	69	21.59	21.61	21.65
		128	0	21.67	21.81	21.56
50M	DFT-S 16QAM	1	1	21.75	21.71	21.78
50M	DFT-S 64QAM	1	1	20.28	20.21	20.10
50M	DFT-S 256QAM	1	1	18.13	18.23	18.08
50M	CP QPSK	1	1	21.09	21.18	21.13

NR Band 77						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		648000	656000	664000
		Frequency (MHz)		3720	3840	3960
40M	DFT-S PI/2 BPSK	1	1	22.74	22.81	22.69
40M	DFT-S QPSK	1	1	22.74	22.78	22.75
		1	53	22.82	22.79	22.73
		1	104	22.56	22.81	22.60
		50	0	21.68	21.73	21.61
		50	28	22.86	22.56	22.54
		50	56	21.64	21.71	21.67
		100	0	21.78	21.87	21.70
40M	DFT-S 16QAM	1	1	21.72	21.74	21.76
40M	DFT-S 64QAM	1	1	20.36	20.31	20.30
40M	DFT-S 256QAM	1	1	18.11	18.29	18.12
40M	CP QPSK	1	1	21.20	21.18	21.06
BW	MCS Index	Channel		647668	656000	664332
		Frequency (MHz)		3715.02	3840	3964.98
30M	DFT-S PI/2 BPSK	1	1	22.59	22.59	22.40
30M	DFT-S QPSK	1	1	22.42	22.63	22.45
		1	39	22.59	22.58	22.58
		1	76	22.26	22.49	22.31
		36	0	21.39	21.49	21.27
		36	21	22.66	22.30	22.30
		36	42	21.29	21.52	21.38
		75	0	21.53	21.60	21.45
30M	DFT-S 16QAM	1	1	21.59	21.45	21.56
30M	DFT-S 64QAM	1	1	20.23	20.05	20.16
30M	DFT-S 256QAM	1	1	17.87	18.06	17.99
30M	CP QPSK	1	1	21.03	20.97	20.86
BW	MCS Index	Channel		647334	656000	664666
		Frequency (MHz)		3710.01	3840	3969.99
20M	DFT-S PI/2 BPSK	1	1	22.55	22.71	22.51
20M	DFT-S QPSK	1	1	22.62	22.66	22.64
		1	26	22.71	22.68	22.53
		1	49	22.41	22.65	22.43
		25	0	21.54	21.56	21.49
		25	13	22.71	22.42	22.35
		25	26	21.47	21.60	21.52
		50	0	21.55	21.79	21.55
20M	DFT-S 16QAM	1	1	21.59	21.68	21.65
20M	DFT-S 64QAM	1	1	20.16	20.17	20.07
20M	DFT-S 256QAM	1	1	17.93	18.20	17.90
20M	CP QPSK	1	1	21.03	21.09	20.98

EIRP Power (dBm)

NR Band 77						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		650000	656000	662000
		Frequency (MHz)		3750	3840	3930
100M	DFT-S PI/2 BPSK	1	1	27.36	27.40	27.24
100M	DFT-S QPSK	1	1	27.42	27.43	27.35
		1	137	27.42	27.40	27.40
		1	271	27.37	27.42	27.26
		135	0	26.37	26.45	26.32
		135	69	27.38	27.42	27.25
		135	138	26.43	26.46	26.35
		270	0	26.42	26.44	26.41
100M	DFT-S 16QAM	1	1	26.49	26.42	26.35
100M	DFT-S 64QAM	1	1	24.99	24.96	24.88
100M	DFT-S 256QAM	1	1	22.93	23.00	22.78
100M	CP QPSK	1	1	25.87	25.97	25.76
BW	MCS Index	Channel		649668	656000	662332
		Frequency (MHz)		3745.02	3840	3934.98
90M	DFT-S PI/2 BPSK	1	1	27.37	27.37	27.21
90M	DFT-S QPSK	1	1	27.36	27.42	27.34
		1	109	27.41	27.42	27.35
		1	215	27.33	27.41	27.23
		108	0	26.28	26.38	26.28
		108	55	27.38	27.33	27.23
		108	109	26.34	26.37	26.25
		216	0	26.35	26.37	26.34
90M	DFT-S 16QAM	1	1	26.42	26.46	26.32
90M	DFT-S 64QAM	1	1	24.93	24.90	24.86
90M	DFT-S 256QAM	1	1	22.78	22.91	22.69
90M	CP QPSK	1	1	25.86	25.85	25.80
BW	MCS Index	Channel		649334	656000	662666
		Frequency (MHz)		3740.01	3840	3939.99
80M	DFT-S PI/2 BPSK	1	1	27.35	27.33	27.18
80M	DFT-S QPSK	1	1	27.35	27.40	27.33
		1	109	27.39	27.38	27.32
		1	215	27.32	27.40	27.19
		108	0	26.26	26.36	26.28
		108	55	27.33	27.26	27.14
		108	109	26.26	26.29	26.25
		216	0	26.28	26.37	26.19
80M	DFT-S 16QAM	1	1	26.35	26.36	26.28
80M	DFT-S 64QAM	1	1	24.94	24.92	24.77
80M	DFT-S 256QAM	1	1	22.78	22.90	22.66
80M	CP QPSK	1	1	25.72	25.84	25.71

*EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

NR Band 77						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		649000	656000	663000
		Frequency (MHz)		3735	3840	3945
70M	DFT-S PI/2 BPSK	1	1	27.28	27.29	27.16
70M	DFT-S QPSK	1	1	27.27	27.30	27.32
		1	95	27.35	27.31	27.22
		1	187	27.22	27.32	27.14
		90	0	26.16	26.31	26.18
		90	50	27.33	27.20	27.08
		90	99	26.21	26.19	26.22
		180	0	26.35	26.33	26.09
70M	DFT-S 16QAM	1	1	26.29	26.34	26.32
70M	DFT-S 64QAM	1	1	24.87	24.82	24.73
70M	DFT-S 256QAM	1	1	22.75	22.80	22.68
70M	CP QPSK	1	1	25.70	25.83	25.70
BW	MCS Index	Channel		648668	656000	663332
		Frequency (MHz)		3730.02	3840	3949.98
60M	DFT-S PI/2 BPSK	1	1	27.23	27.23	27.15
60M	DFT-S QPSK	1	1	27.24	27.21	27.32
		1	81	27.29	27.29	27.19
		1	160	27.13	27.31	27.11
		81	0	26.16	26.21	26.14
		81	41	27.28	27.12	27.02
		81	81	26.11	26.17	26.22
		162	0	26.24	26.28	26.10
60M	DFT-S 16QAM	1	1	26.22	26.24	26.32
60M	DFT-S 64QAM	1	1	24.77	24.79	24.72
60M	DFT-S 256QAM	1	1	22.65	22.73	22.54
60M	CP QPSK	1	1	25.60	25.81	25.58
BW	MCS Index	Channel		648334	656000	663666
		Frequency (MHz)		3725.01	3840	3954.99
50M	DFT-S PI/2 BPSK	1	1	27.18	27.21	27.15
50M	DFT-S QPSK	1	1	27.15	27.19	27.23
		1	67	27.27	27.26	27.19
		1	131	27.04	27.25	27.09
		64	0	26.12	26.17	26.04
		64	35	27.27	27.04	26.94
		64	69	26.08	26.10	26.14
		128	0	26.16	26.30	26.05
50M	DFT-S 16QAM	1	1	26.24	26.20	26.27
50M	DFT-S 64QAM	1	1	24.77	24.70	24.59
50M	DFT-S 256QAM	1	1	22.62	22.72	22.57
50M	CP QPSK	1	1	25.58	25.67	25.62

*EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

NR Band 77						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		648000	656000	664000
		Frequency (MHz)		3720	3840	3960
40M	DFT-S PI/2 BPSK	1	1	27.23	27.30	27.18
40M	DFT-S QPSK	1	1	27.23	27.27	27.24
		1	53	27.31	27.28	27.22
		1	104	27.05	27.30	27.09
		50	0	26.17	26.22	26.10
		50	28	27.35	27.05	27.03
		50	56	26.13	26.20	26.16
		100	0	26.27	26.36	26.19
40M	DFT-S 16QAM	1	1	26.21	26.23	26.25
40M	DFT-S 64QAM	1	1	24.85	24.80	24.79
40M	DFT-S 256QAM	1	1	22.60	22.78	22.61
40M	CP QPSK	1	1	25.69	25.67	25.55
BW	MCS Index	Channel		647668	656000	664332
		Frequency (MHz)		3715.02	3840	3964.98
30M	DFT-S PI/2 BPSK	1	1	27.08	27.08	26.89
30M	DFT-S QPSK	1	1	26.91	27.12	26.94
		1	39	27.08	27.07	27.07
		1	76	26.75	26.98	26.80
		36	0	25.88	25.98	25.76
		36	21	27.15	26.79	26.79
		36	42	25.78	26.01	25.87
		75	0	26.02	26.09	25.94
30M	DFT-S 16QAM	1	1	26.08	25.94	26.05
30M	DFT-S 64QAM	1	1	24.72	24.54	24.65
30M	DFT-S 256QAM	1	1	22.36	22.55	22.48
30M	CP QPSK	1	1	25.52	25.46	25.35
BW	MCS Index	Channel		647334	656000	664666
		Frequency (MHz)		3710.01	3840	3969.99
20M	DFT-S PI/2 BPSK	1	1	27.04	27.20	27.00
20M	DFT-S QPSK	1	1	27.11	27.15	27.13
		1	26	27.20	27.17	27.02
		1	49	26.90	27.14	26.92
		25	0	26.03	26.05	25.98
		25	13	27.20	26.91	26.84
		25	26	25.96	26.09	26.01
		50	0	26.04	26.28	26.04
20M	DFT-S 16QAM	1	1	26.08	26.17	26.14
20M	DFT-S 64QAM	1	1	24.65	24.66	24.56
20M	DFT-S 256QAM	1	1	22.42	22.69	22.39
20M	CP QPSK	1	1	25.52	25.58	25.47

*EIRP (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi)

7.2 Radiated Spurious Emissions below 1GHz

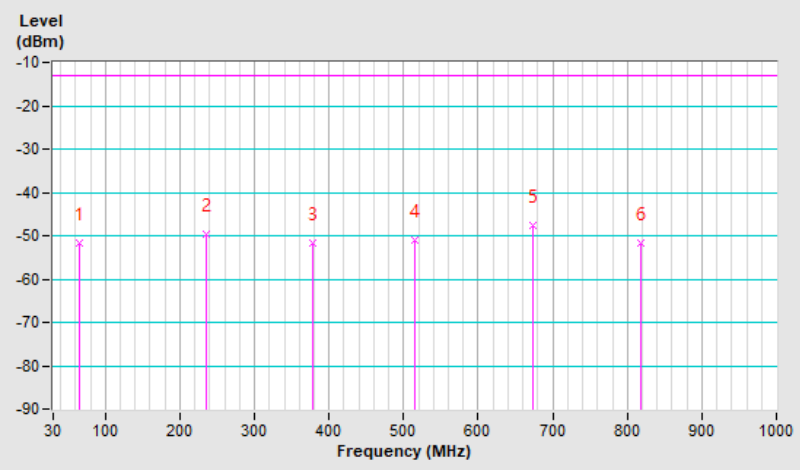
7.2.1 NR n77 (3450-3550 MHz) SCS 30 kHz

RF Mode	NR n77 Channel Bandwidth: 20MHz	**Channel**	CH 636000：3540 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	65.89	-51.61	-13.00	-38.61	1.50 H	49	57.41	-109.02
2	234.67	-49.64	-13.00	-36.64	1.00 H	316	60.07	-109.71
3	378.23	-51.55	-13.00	-38.55	2.00 H	149	53.57	-105.12
4	515.00	-50.93	-13.00	-37.93	1.00 H	189	50.83	-101.76
5	674.08	-47.60	-13.00	-34.60	1.50 H	174	51.75	-99.35
6	818.61	-51.56	-13.00	-38.56	1.50 H	183	45.16	-96.72

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

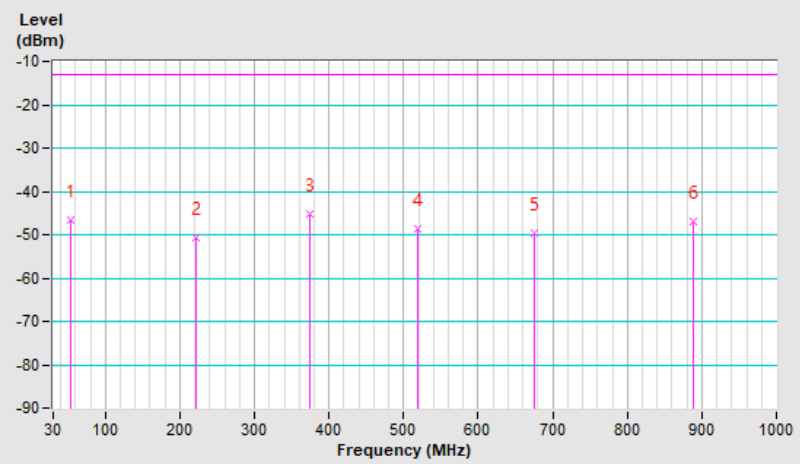


RF Mode	NR n77 Channel Bandwidth: 20MHz	**Channel**	CH 635000：3525 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	53.28	-46.61	-13.00	-33.61	1.00 V	327	61.04	-107.65
2	221.09	-50.60	-13.00	-37.60	2.00 V	187	60.51	-111.11
3	373.38	-45.33	-13.00	-32.33	1.00 V	178	59.93	-105.26
4	518.88	-48.71	-13.00	-35.71	1.50 V	234	53.00	-101.71
5	675.05	-49.64	-13.00	-36.64	1.50 V	195	49.70	-99.34
6	889.42	-46.87	-13.00	-33.87	1.00 V	232	49.52	-96.39

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



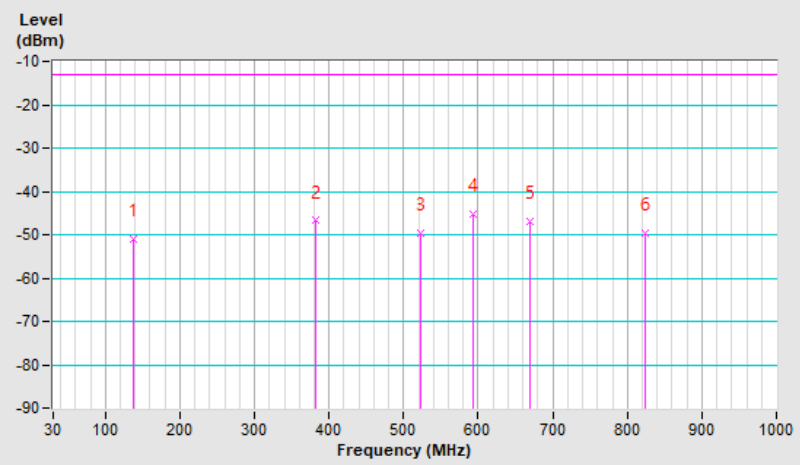
7.2.2 NR n77 (3700-3980 MHz) SCS 30 kHz

RF Mode	NR n77 Channel Bandwidth: 50MHz	**Channel**	CH 663666：3954.99 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	136.70	-51.05	-13.00	-38.05	2.00 H	195	57.14	-108.19
2	381.14	-46.78	-13.00	-33.78	1.00 H	146	58.27	-105.05
3	522.76	-49.78	-13.00	-36.78	1.50 H	138	51.87	-101.65
4	593.57	-45.11	-13.00	-32.11	1.00 H	144	55.65	-100.76
5	670.20	-46.87	-13.00	-33.87	2.00 H	184	52.54	-99.41
6	824.43	-49.52	-13.00	-36.52	1.00 H	178	47.22	-96.74

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

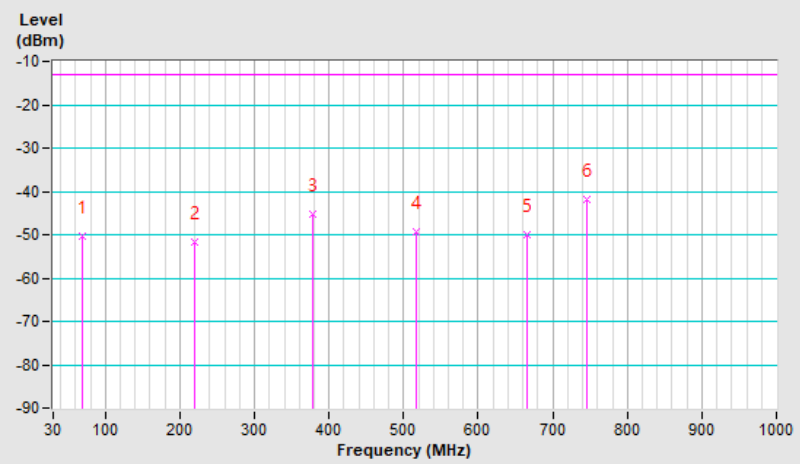


RF Mode	NR n77 Channel Bandwidth: 50MHz	**Channel**	CH 663666：3954.99 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	69.77	-50.32	-13.00	-37.32	2.00 V	182	59.31	-109.63
2	220.12	-51.64	-13.00	-38.64	1.00 V	172	59.46	-111.10
3	377.26	-45.27	-13.00	-32.27	1.50 V	176	59.87	-105.14
4	517.91	-49.18	-13.00	-36.18	1.00 V	214	52.55	-101.73
5	666.32	-50.03	-13.00	-37.03	1.00 V	176	49.43	-99.46
6	**744.89**	**-42.02**	**-13.00**	**-29.02**	**1.50 V**	**168**	**55.35**	**-97.37**

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



7.3 Radiated Spurious Emissions above 1GHz

7.3.1 NR n77 (3450-3550 MHz) SCS 30 kHz

RF Mode	NR n77 Channel Bandwidth: 20MHz	**Channel**	CH 630668：3460.02 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	6920.04	-45.26	-13.00	-32.26	1.52 H	263	54.48	-99.74
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	6920.04	-46.31	-13.00	-33.31	2.32 V	164	53.43	-99.74

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	NR n77 Channel Bandwidth: 20MHz	**Channel**	CH 633334：3500.01 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7000.02	-44.47	-13.00	-31.47	1.74 H	253	54.73	-99.20
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7000.02	-45.73	-13.00	-32.73	2.58 V	113	53.47	-99.20

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	NR n77 Channel Bandwidth: 20MHz	**Channel**	CH 636000：3540 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7080.00	-43.70	-13.00	-30.70	2.42 H	165	54.67	-98.37
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7080.00	-44.96	-13.00	-31.96	1.47 V	253	53.41	-98.37

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	NR n77 Channel Bandwidth: 50MHz	**Channel**	CH 631668：3475.02 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	6950.04	-44.92	-13.00	-31.92	2.37 H	169	54.63	-99.55
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	6950.04	-46.08	-13.00	-33.08	1.52 V	236	53.47	-99.55

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	NR n77 Channel Bandwidth: 50MHz	**Channel**	CH 633334：3500.01 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7000.02	-44.62	-13.00	-31.62	2.32 H	157	54.58	-99.20
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7000.02	-45.56	-13.00	-32.56	1.37 V	144	53.64	-99.20

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	NR n77 Channel Bandwidth: 50MHz	**Channel**	CH 635000：3525 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7050.00	-43.69	-13.00	-30.69	3.41 H	178	54.86	-98.55
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7050.00	-45.38	-13.00	-32.38	2.23 V	265	53.17	-98.55

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	NR n77 Channel Bandwidth: 100MHz	**Channel**	CH 633334：3500.01 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Vincent Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7000.02	-44.46	-13.00	-31.46	1.52 H	203	54.74	-99.20
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7000.02	-45.56	-13.00	-32.56	2.74 V	169	53.64	-99.20

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

7.3.2 NR n77 (3700-3980 MHz) SCS 30 kHz

RF Mode	NR n77 Channel Bandwidth: 20MHz	**Channel**	CH 647334：3710.01 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Thomas Cheng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7420.02	-43.30	-13.00	-30.30	1.36 H	54	54.28	-97.58
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7420.02	-44.17	-13.00	-31.17	2.35 V	154	53.41	-97.58

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	NR n77 Channel Bandwidth: 20MHz	**Channel**	CH 656000：3840 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Thomas Cheng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7680.00	-43.32	-13.00	-30.32	1.96 H	43	54.42	-97.74
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7680.00	-44.06	-13.00	-31.06	2.60 V	290	53.68	-97.74

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	NR n77 Channel Bandwidth: 20MHz	**Channel**	CH 664666：3969.99 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Thomas Cheng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	**7939.98**	**-41.99**	**-13.00**	**-28.99**	**1.36 H**	**202**	**54.50**	**-96.49**
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7939.98	-42.86	-13.00	-29.86	1.04 V	227	53.63	-96.49

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	NR n77 Channel Bandwidth: 50MHz	**Channel**	CH 648334：3725.01 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Thomas Cheng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7450.02	-43.00	-13.00	-30.00	3.43 H	146	54.31	-97.31
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7450.02	-43.41	-13.00	-30.41	2.91 V	179	53.90	-97.31

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	NR n77 Channel Bandwidth: 50MHz	**Channel**	CH 656000：3840 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Thomas Cheng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7680.00	-43.07	-13.00	-30.07	2.13 H	288	54.67	-97.74
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7680.00	-44.36	-13.00	-31.36	2.74 V	265	53.38	-97.74

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	NR n77 Channel Bandwidth: 50MHz	**Channel**	CH 663666：3954.99 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Thomas Cheng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7909.98	-42.26	-13.00	-29.26	1.56 H	208	54.38	-96.64
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7909.98	-43.28	-13.00	-30.28	2.96 V	93	53.36	-96.64

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	NR n77 Channel Bandwidth: 100MHz	**Channel**	CH 650000：3750 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Thomas Cheng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7500.00	-43.05	-13.00	-30.05	1.09 H	171	54.42	-97.47
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7500.00	-43.92	-13.00	-30.92	2.02 V	55	53.55	-97.47

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	NR n77 Channel Bandwidth: 100MHz	**Channel**	CH 656000：3840 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Thomas Cheng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7680.00	-43.24	-13.00	-30.24	3.32 H	178	54.50	-97.74
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7680.00	-43.97	-13.00	-30.97	1.57 V	66	53.77	-97.74

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

RF Mode	NR n77 Channel Bandwidth: 100MHz	**Channel**	CH 662000：3930 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 70% RH
Tested By	Thomas Cheng		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7860.00	-42.09	-13.00	-29.09	1.92 H	147	54.82	-96.91
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7860.00	-43.71	-13.00	-30.71	1.66 V	358	53.20	-96.91

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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The address and road map of all our labs can be found in our web site also.

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