

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 96
47 CFR FCC Part 2

Report No.: RFCDVB-WTW-P22100074B

FCC ID: QYLEM9190V

Product: Radio Module

Brand: Getac

Model No.: EM9190

Received Date: 2023/7/20

Test Date: 2023/7/25 ~ 2023/8/1

Issued Date: 2023/8/15

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 / 788550 / TW0003

Designation Number:

Approved by: _____

Jeremy Lin

Date: _____

2023/8/15

Jeremy Lin / Project Engineer

This test report consists of 38 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The test results in the report only apply to the tested sample. The test results in this report are traceable to the national or international standards.



Prepared by : Vera Huang / Specialist

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

Table of Contents

Release Control Record	3
1 Certificate	4
2 Summary of Test Results	5
2.1 Measurement Uncertainty	5
2.2 Supplementary Information	5
3 General Information	6
3.1 General Description of EUT	6
3.2 Antenna Description of EUT	8
3.3 Test Mode Applicability and Tested Channel Detail	9
3.4 Test Program Used and Operation Descriptions	10
3.5 Connection Diagram of EUT and Peripheral Devices	10
3.6 Configuration of Peripheral Devices and Cable Connections	10
4 Test Instruments	11
4.1 Maximum EIRP	11
4.2 Radiated Spurious Emissions below 1GHz	12
4.3 Radiated Spurious Emissions above 1GHz	13
5 Limits of Test Items	14
5.1 Maximum EIRP	14
5.2 Radiated Spurious Emissions below 1GHz	14
5.3 Radiated Spurious Emissions above 1GHz	14
6 Test Arrangements	15
6.1 Maximum EIRP	15
6.1.1 Test Setup	15
6.1.2 Test Procedure	15
6.2 Radiated Spurious Emissions below 1GHz	16
6.2.1 Test Setup	16
6.2.2 Test Procedure	16
6.3 Radiated Spurious Emissions above 1GHz	17
6.3.1 Test Setup	17
6.3.2 Test Procedure	17
7 Test Results of Test Item	18
7.1 Maximum EIRP	18
7.1.1 NR n48 SCS 30 kHz	18
7.2 Radiated Spurious Emissions below 1GHz	26
7.2.1 NR n48 SCS 30 kHz	26
7.3 Radiated Spurious Emissions above 1GHz	28
7.3.1 NR n48 SCS 30 kHz	28
8 Pictures of Test Arrangements	37
9 Information of the Testing Laboratories	38



Release Control Record

Issue No.	Description	Date Issued
RFCDVB-WTW-P22100074B	Original Release	2023/8/15

1 Certificate

Product: Radio Module

Brand: Getac

Test Model: EM9190

Sample Status: Engineering Sample

Applicant: Getac Technology Corporation.

Test Date: 2023/7/25 ~ 2023/8/1

Standard: 47 CFR FCC Part 96
47 CFR FCC Part 2

Measurement ANSI/TIA/EIA-603-E 2016

procedure: ANSI C63.26-2015

KDB 971168 D01 Power Meas License Digital Systems v03r01

KDB 940660 D01 Part 96 CBRS Eqpt v03

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 96 & Part 2			
Standard / Clause	Test Item	Result	Remark
FCC 47 CFR Part 2.1046 FCC 47 CFR Part 96.41(b)	Maximum EIRP	Pass	Meet the requirement of limit.
FCC 47 CFR Part 2.1047	Modulation Characteristics	N/A	Refer to Note
FCC 47 CFR Part 96.41(g)	Peak to Average Ratio	N/A	Refer to Note
FCC 47 CFR Part 2.1049	Bandwidth	N/A	Refer to Note
FCC 47 CFR Part 2.1051 FCC 47 CFR Part 96.41(e)	Conducted Spurious Emissions	N/A	Refer to Note
FCC 47 CFR Part 2.1053 FCC 47 CFR Part 96.41(e)	Radiated Spurious Emissions below 1GHz	Pass	Minimum passing margin is -10.59 dB at 87.23 MHz
FCC 47 CFR Part 2.1053 FCC 47 CFR Part 96.41(e)	Radiated Spurious Emissions above 1GHz	Pass	Minimum passing margin is -0.54 dB at 7249.98 MHz
FCC 47 CFR Part 2.1055	Frequency Stability	N/A	Refer to Note

Note:

1. Only test item of Radiated Spurious Emissions tests and EIRP Power were performed for this report. Other testing data please refer to Sporton International (Shenzhen) Inc. report no.: FG1N1001-01_Rev. 01 for module (Brand: Airprime, Model: EM9190).
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	3.59 dB
	30 MHz ~ 1 GHz	3.60 dB
Radiated Spurious Emissions above 1GHz	1 GHz ~ 18 GHz	2.29 dB
	18 GHz ~ 40 GHz	2.29 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	Radio Module
Brand	Getac
Test Model	EM9190
Status of EUT	Engineering Sample
Power Supply Rating	3.3 Vdc (Host equipment)

Note:

1. This report is prepared for FCC class II permissive change. The difference compared with the original report (BV CPS report no.: RFCDVB-WTW-P22100074-4) is enable 5G NR n48 via software. Only test item of radiated spurious emissions tests and EIRP power were performed for this report. Other testing data please refer to Sporton International (Shenzhen) Inc. report no.: FG1N1001-01_Rev. 01 for module (Brand: Airprime, Model: EM9190).
2. The EUT is authorized for use in specific End-product.

Product	Brand	Model	Difference
Notebook	Getac	V110	For marketing purpose
		V110G7	
		V110Y (Y= 10 characters, Y can be 0 to 9, A to Z, a to z, "/", "\", "-", " " or blank for marketing purpose)	

* The model of the V110G7 was chosen for final test.

3. The End-product contains following accessory devices.

Part	Brand	Model	Specification
Adapter 1	FSP	FSP065-RBBN3	I/P: 100-240Vac, 50-60Hz, 1.5A O/P: 19.0Vdc, 3.42A 1.5m DC power cable with one core attached on adapter
Adapter 2	Getac	MTA190474W4	I/P: 100-240Vac, 50-60Hz, 1.6A O/P: 19.0Vdc, 4.74A 1.55m DC power cable with two cores attached on adapter
Battery	Getac	BP3S1P2100-S	Rating: 11.1Vdc, 2040mAh, 23Wh Typical name: 2100mAh, 24Wh
Digitizer Pen	EMpen Technology Corp	DIGITIZER PEN	-

4. The End-product has three SKUs for sale, after pre-test. SKU 3 was chosen for final test and presented in the test report.

Part	Brand	Model	Specification	Configuration		
				SKU 1	SKU 2	SKU 3
CPU	Intel	Alder Lake	i5-1235U (Non Vpro)	V		V
			i7-1265U (Vpro)		V	
DDR	Kingston	---	16GB (8GB+8GB)	V		
		---	32GB (16GB+16GB)		V	
		---	64GB (32GB+32GB)			V
SSD	SSSTC	---	256GB	V		
		---	512GB		V	
		---	1TB			V
LCD Panel	AUO	G116HAN01	11.6"	V	V	V
Finger Print	Egistec	---	---	V	V	V
WLAN Module	Intel	AX211NGW	---	V	V	V
WWAN Module	Sierra	EM9190	---	V	V	V
GPS	GlobalSat	MC1010G	---	V	V	V
RFID Module	NXP	PN-7462	---		V	V
Digitizer Module	Getac	EMR116-UA00	---		V	V
Bottom Camera	FOXLINK	FN80AF-443H	---	V	V	V
	Chicony	CKAM816	---	V	V	V
Camera	FOXLINK	FN20FF-679H	---	V	V	V
IR Camera	FOXLINK	FN23FF-678H	---		V	V
Option Bay	Honeywell	N6703	Barcode	V		V
	Getac	---	SD Card reader		V	
	Getac	---	Smart Card		V	

5. The EUT supports the following configuration.

5G NR	FCC 5G FR1		
	Band	SCS	Bandwidth (MHz)
	n48	30kHz	10/20/40

* This EUT support SA mode and NSA mode, after verification, SA mode was the worst case and chosen for final test.

6. EUT Overview

Band / Bandwidth	TX Frequency Range (MHz)	Max. EIRP Power				
		PI/2 BPSK	QPSK	16QAM	64QAM	256QAM
n48 (Channel Bandwidth 10MHz)	3555.00-3694.98	134.896mW (21.30dBm/10MHz)	136.773mW (21.36dBm/10MHz)	100.925mW (20.04dBm/10MHz)	75.336mW (18.77dBm/10MHz)	45.394mW (16.57dBm/10MHz)
		139.959mW (21.46dBm/10MHz)	140.281mW (21.47dBm/10MHz)	105.682mW (20.24dBm/10MHz)	78.524mW (18.95dBm/10MHz)	48.641mW (16.87dBm/10MHz)
n48 (Channel Bandwidth 20MHz)	3560.01-3690.00	138.357mW (21.41dBm/10MHz)	141.579mW (21.51dBm/10MHz)	105.682mW (20.24dBm/10MHz)	77.268mW (18.88dBm/10MHz)	46.345mW (16.66dBm/10MHz)
		141.254mW (21.50dBm/20MHz)	143.549mW (21.57dBm/20MHz)	109.396mW (20.39dBm/20MHz)	79.983mW (19.03dBm/20MHz)	48.865mW (16.89dBm/20MHz)
n48 (Channel Bandwidth 40MHz)	3570.00-3679.98	138.357mW (21.41dBm/10MHz)	143.549mW (21.57dBm/10MHz)	106.414mW (20.27dBm/10MHz)	78.886mW (18.97dBm/10MHz)	47.315mW (16.75dBm/10MHz)
		143.219mW (21.56dBm/40MHz)	144.877mW (21.61dBm/40MHz)	110.917mW (20.45dBm/40MHz)	81.470mW (19.11dBm/40MHz)	49.317mW (16.93dBm/40MHz)

7. 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	Antenna Gain (dBi)
	5G NR FR1 n48
PIFA	-1.3

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

3.3 Test Mode Applicability and Tested Channel Detail

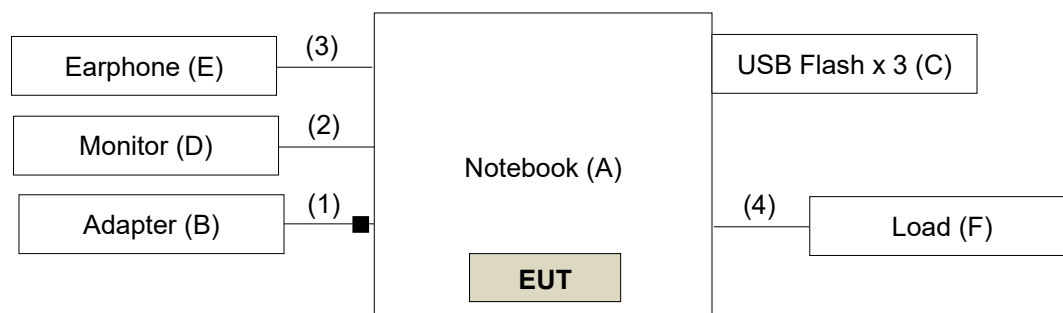
Pre-Scan:	EUT can be used in the following ways: X-axis/ Y-axis/ Z-axis for tablet mode, and NB mode. Pre-scan these ways and find the worst case as a representative test condition.
Worst Case:	NB mode

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	637000 (3555.00 MHz) 641666 (3624.99 MHz) 646332 (3694.98 MHz)	10 MHz	PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	637334 (3560.01 MHz) 641666 (3624.99 MHz) 646000 (3690.00 MHz)	20 MHz	PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	638000 (3570.00 MHz) 641666 (3624.99 MHz) 645332 (3679.98 MHz)	40 MHz	PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
RE Below 1GHz	641666 (3624.99 MHz)	40 MHz	QPSK	1 RB
RE Above 1GHz	637000 (3555.00 MHz) 641666 (3624.99 MHz) 646332 (3694.98 MHz)	10 MHz	QPSK	1 RB
	637334 (3560.01 MHz) 641666 (3624.99 MHz) 646000 (3690.00 MHz)	20 MHz	QPSK	1 RB
	638000 (3570.00 MHz) 641666 (3624.99 MHz) 645332 (3679.98 MHz)	40 MHz	QPSK	1 RB

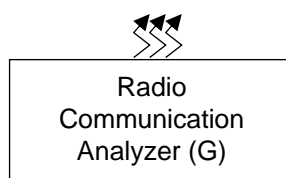
3.4 Test Program Used and Operation Descriptions

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



Remote



3.6 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Notebook	Getac	V110G7	NA	NA	Provided by manufacturer
B	Adapter	FSP	FSP065-RBBN3	NA	NA	Provided by manufacturer
C	USB Flash x 3	SanDisk	SDDDC3-032G	NA	NA	-
D	Monitor	DELL	SE2416Hc	CN-OWJKMC-64180-66D-013B-A00	NA	-
E	Earphone	Apple	MB77PFEB	NA	NA	-
F	Load	NA	NA	NA	NA	-
G	Radio Communication Analyzer	Anritsu	MT8821C	6201462755	NA	-

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item G acted as a communication partner to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Power Cable	1	1.5	N	1	Provided by manufacturer Attached on adapter
2.	HDMI Cable	1	1.0	N	0	-
3.	Earphone Cable	1	1.5	N	0	-
4.	RJ45 Cable	1	1.5	N	0	-

Note: The core(s) is(are) originally attached to the cable(s).

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 Maximum EIRP

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
N9030B - PXA Signal Analyzer KEYSIGHT	N9030B	MY57140488	2023/3/6	2024/3/5
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: 2023/8/1

4.2 Radiated Spurious Emissions below 1GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn BV ADT	AT100	AT93021705	N/A	N/A
Bi_Log Antenna Schwarbeck	VULB 9168	9168-160	2022/10/20	2023/10/19
Loop Antenna Electro-Metrics	EM-6879	269	2022/9/19	2023/9/18
Loop Antenna TESEQ	HLA 6121	45745	2023/7/26	2024/7/25
MXE EMI Receiver Keysight	N9038A	MY55420137	2023/5/3	2024/5/2
Preamplifier Agilent	8447D	2944A10638	2023/5/7	2024/5/6
Preamplifier 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 Woken	8D-FB	Cable-CH9-01	2023/5/7	2024/5/6
Signal & Spectrum Analyzer R&S	FSW43	101867	2022/12/30	2023/12/29
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table BV ADT	TT100	TT93021705	N/A	N/A
Turn Table Controller BV ADT	SC100	SC93021705	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 4.
2. Tested Date: 2023/8/1

4.3 Radiated Spurious Emissions above 1GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn BV ADT	AT100	AT93021705	N/A	N/A
Boresight antenna tower fixture BV	BAF-02	5	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-1169	2022/11/13	2023/11/12
	BBHA 9170	9170-480	2022/11/13	2023/11/12
		BBHA9170243	2022/11/13	2023/11/12
MXE EMI Receiver Keysight	N9038A	MY55420137	2023/5/3	2024/5/2
Notch Filter Micro-Tronics	BRM17690	004	2023/1/11	2024/1/10
	BRM50716	060	2023/1/11	2024/1/10
Preamplifier Agilent	8449B	3008A02367	2023/2/15	2024/2/14
Preamplifier EMCI	EMC 184045	980116	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
RF Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	2023/1/7	2024/1/6
RF Coaxial Cable HUBER+SUHNER&EMCI	SUCOFLEX 104& EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	2023/1/7	2024/1/6
Signal & Spectrum Analyzer R&S	FSW43	101867	2022/12/30	2023/12/29
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table BV ADT	TT100	TT93021705	N/A	N/A
Turn Table Controller BV ADT	SC100	SC93021705	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 4.
2. Tested Date: 2023/7/25 ~ 2023/7/26

5 Limits of Test Items

5.1 Maximum EIRP

Device		Maximum EIRP (dBm/10 MHz)
<input checked="" type="checkbox"/>	End User Device	23
<input type="checkbox"/>	Category A CBSD	30
<input type="checkbox"/>	Category B CBSD	47

5.2 Radiated Spurious Emissions below 1GHz

Power of any emissions outside the Fundamental	Limit
Within 0-10MHz above the Assigned Channel	-13 dBm/MHz
Within 0-10MHz below the Assigned Channel	
Greater than 10MHz above the Assigned Channel	-25 dBm/MHz
Greater than 10MHz below the Assigned Channel	
Power of any emission below 3530MHz	-40 dBm/MHz
Power of any emission above 3720MHz	

5.3 Radiated Spurious Emissions above 1GHz

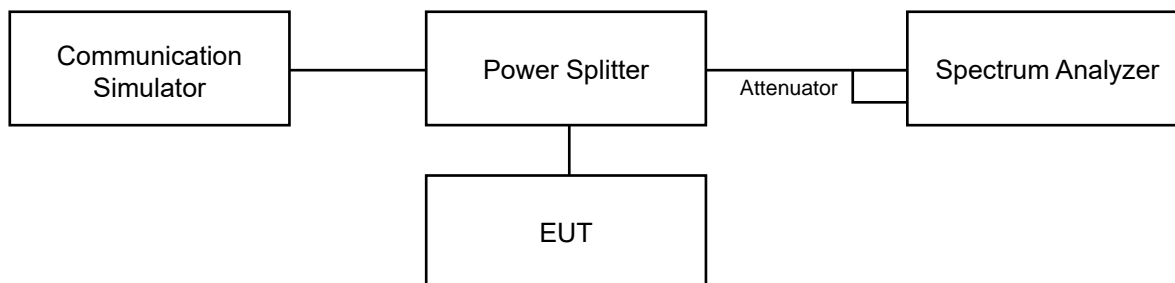
Power of any emissions outside the Fundamental	Limit
Within 0-10MHz above the Assigned Channel	-13 dBm/MHz
Within 0-10MHz below the Assigned Channel	
Greater than 10MHz above the Assigned Channel	-25 dBm/MHz
Greater than 10MHz below the Assigned Channel	
Power of any emission below 3530MHz	-40 dBm/MHz
Power of any emission above 3720MHz	

6 Test Arrangements

6.1 Maximum EIRP

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 $2 \times$ to $3 \times$ the OBW.
- b. Set RBW = 1% to 5% of the OBW.
- c. Set VBW $\geq 3 \times$ RBW.
- d. Set number of measurement points in sweep $\geq 2 \times$ 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 $10 \log (1/\text{duty cycle})$ to the measured power level to compute the average power during continuous transmission.
- k. For per 10MHz method, channel power integrating bandwidth 10MHz is used for bandwidth 20M and 40M. For full power method, channel power integrating bandwidth 20MHz is used for bandwidth 20M, integrating bandwidth 40MHz is used for bandwidth 40M.

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:

$$\text{EIRP} = P_{\text{Meas}} + G_T$$

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

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)

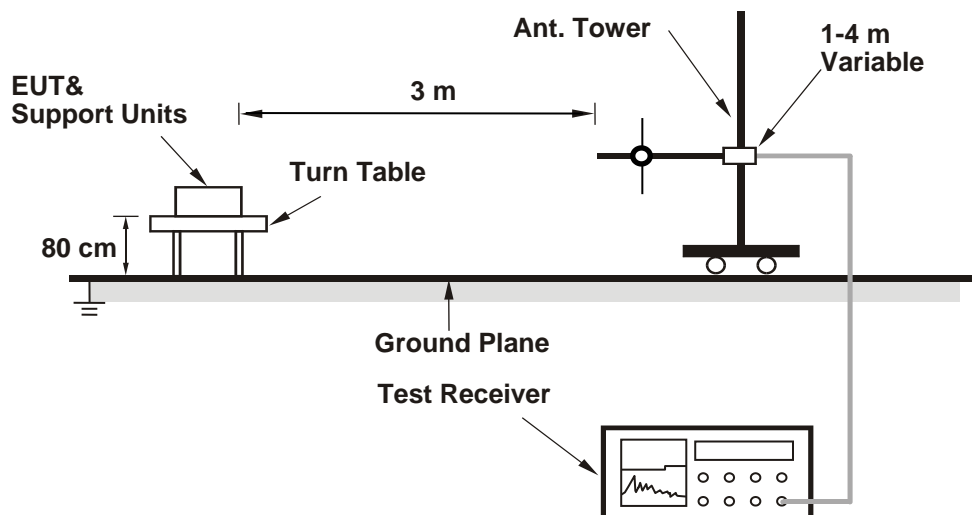
P_{Meas} measured transmitter output power or PSD, in dBm or dBW

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.

- 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.
- 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.
- 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.
- Following C63.26 section 5.5 and 5.2.7
- $EIRP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.
- $ERP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8 - 2.15$; where D is the measurement distance (in the far field region) in m.

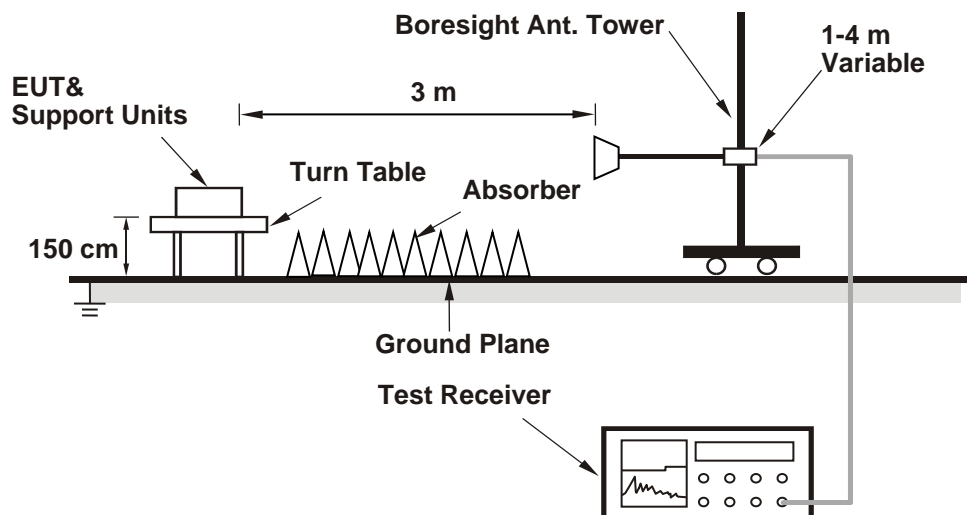
Note:

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

- 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.
- 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.
- 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.
- Following C63.26 section 5.5 and 5.2.7
- $EIRP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.
- $ERP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8 - 2.15$; where D is the measurement distance (in the far field region) in m.

Note:

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

7 Test Results of Test Item

7.1 Maximum EIRP

Input Power:	3.3 Vdc	Environmental Conditions:	22°C, 70% RH	Tested By:	James Yang
--------------	---------	---------------------------	--------------	------------	------------

7.1.1 NR n48 SCS 30 kHz

Conducted Output Power (dBm/10MHz)

NR Band 48_Per 10M						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		638000	641666	645332
		Frequency (MHz)		3570	3624.99	3679.98
40M	DFT-S PI/2 BPSK	1	1	22.69	22.71	22.71
40M	DFT-S QPSK	1	1	22.65	22.87	22.77
		1	53	22.38	22.65	22.68
		1	104	22.28	22.57	22.59
		50	0	21.53	21.57	21.56
		50	28	22.39	22.60	22.56
		50	56	21.55	21.63	21.71
		100	0	21.42	22.74	21.70
40M	DFT-S 16QAM	1	1	21.33	21.57	21.55
40M	DFT-S 64QAM	1	1	20.01	20.27	20.19
40M	DFT-S 256QAM	1	1	17.85	18.05	18.04
40M	CP QPSK	1	1	20.94	21.17	21.16



NR Band 48_Per 10M						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		637334	641666	646000
		Frequency (MHz)		3560.01	3624.99	3690
20M	DFT-S PI/2 BPSK	1	1	22.59	22.71	22.65
20M	DFT-S QPSK	1	1	22.60	22.81	22.72
		1	26	22.29	22.68	22.58
		1	49	22.20	22.52	22.54
		25	0	21.51	21.49	21.50
		25	13	22.37	22.65	22.56
		25	26	21.51	21.69	21.70
		50	0	21.42	21.70	21.69
20M	DFT-S 16QAM	1	1	21.32	21.54	21.47
20M	DFT-S 64QAM	1	1	19.97	20.18	20.10
20M	DFT-S 256QAM	1	1	17.85	17.95	17.96
20M	CP QPSK	1	1	20.85	21.08	21.12

NR Band 48_Per 10M						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		637000	641666	646332
		Frequency (MHz)		3555	3624.99	3694.98
10M	DFT-S PI/2 BPSK	1	1	22.49	22.51	22.60
10M	DFT-S QPSK	1	1	22.57	22.66	22.64
		1	11	22.29	22.57	22.50
		1	22	22.14	22.51	22.39
		12	0	21.39	21.47	21.45
		12	6	22.22	22.57	22.56
		12	12	21.43	21.61	21.63
		24	0	21.37	21.57	21.66
10M	DFT-S 16QAM	1	1	21.29	21.34	21.33
10M	DFT-S 64QAM	1	1	19.82	20.07	19.96
10M	DFT-S 256QAM	1	1	17.85	17.87	17.82
10M	CP QPSK	1	1	20.83	21.03	21.05



Full Conducted Output Power (dBm/40MHz)

NR Band 48						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		638000	641666	645332
		Frequency (MHz)		3570	3624.99	3679.98
40M	DFT-S PI/2 BPSK	1	1	22.74	22.86	22.81
40M	DFT-S QPSK	1	1	22.76	22.91	22.90
		1	53	22.47	22.84	22.75
		1	104	22.31	22.82	22.69
		50	0	21.61	21.89	21.69
		50	28	22.43	22.78	22.64
		50	56	21.58	21.89	21.75
		100	0	21.51	21.86	21.73
40M	DFT-S 16QAM	1	1	21.45	21.75	21.68
40M	DFT-S 64QAM	1	1	20.13	20.41	20.32
40M	DFT-S 256QAM	1	1	17.90	18.23	18.17
40M	CP QPSK	1	1	21.04	21.29	21.25

Full Conducted Output Power (dBm/20MHz)

NR Band 48						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		637334	641666	646000
		Frequency (MHz)		3560.01	3624.99	3690
20M	DFT-S PI/2 BPSK	1	1	22.66	22.79	22.80
20M	DFT-S QPSK	1	1	22.76	22.87	22.81
		1	26	22.53	22.79	22.72
		1	49	22.50	22.76	22.67
		25	0	21.56	21.81	21.69
		25	13	22.36	22.72	22.62
		25	26	21.52	21.87	21.85
		50	0	21.59	21.83	21.76
20M	DFT-S 16QAM	1	1	21.44	21.69	21.63
20M	DFT-S 64QAM	1	1	20.16	20.33	20.23
20M	DFT-S 256QAM	1	1	17.96	18.13	18.19
20M	CP QPSK	1	1	20.97	21.22	21.19

Full Conducted Output Power (dBm/10MHz)

NR Band 48						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		637000	641666	646332
		Frequency (MHz)		3555	3624.99	3694.98
10M	DFT-S PI/2 BPSK	1	1	22.52	22.67	22.76
10M	DFT-S QPSK	1	1	22.76	22.72	22.72
		1	11	22.44	22.66	22.64
		1	22	22.49	23.73	23.60
		12	0	21.48	21.78	21.68
		12	6	22.33	22.77	22.65
		12	12	21.44	21.75	21.62
		24	0	21.53	21.69	21.71
10M	DFT-S 16QAM	1	1	21.37	21.52	21.54
10M	DFT-S 64QAM	1	1	20.08	20.25	20.24
10M	DFT-S 256QAM	1	1	17.84	18.02	18.17
10M	CP QPSK	1	1	20.97	21.12	21.25

Maximum EIRP (dBm/10MHz)

NR Band 48_Per 10M						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		638000	641666	645332
		Frequency (MHz)		3570	3624.99	3679.98
40M	DFT-S PI/2 BPSK	1	1	21.39	21.41	21.41
40M	DFT-S QPSK	1	1	21.35	21.57	21.47
		1	53	21.08	21.35	21.38
		1	104	20.98	21.27	21.29
		50	0	20.23	20.27	20.26
		50	28	21.09	21.30	21.26
		50	56	20.25	20.33	20.41
		100	0	20.12	21.44	20.40
40M	DFT-S 16QAM	1	1	20.03	20.27	20.25
40M	DFT-S 64QAM	1	1	18.71	18.97	18.89
40M	DFT-S 256QAM	1	1	16.55	16.75	16.74
40M	CP QPSK	1	1	19.64	19.87	19.86

*EIRP (dBm/10MHz) = Conducted Output Power (dBm/10MHz) + Antenna Gain (dBi).



NR Band 48_Per 10M						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		637334	641666	646000
		Frequence (MHz)		3560.01	3624.99	3690
20M	DFT-S PI/2 BPSK	1	1	21.29	21.41	21.35
20M	DFT-S QPSK	1	1	21.30	21.51	21.42
		1	26	20.99	21.38	21.28
		1	49	20.90	21.22	21.24
		25	0	20.21	20.19	20.20
		25	13	21.07	21.35	21.26
		25	26	20.21	20.39	20.40
		50	0	20.12	20.40	20.39
20M	DFT-S 16QAM	1	1	20.02	20.24	20.17
20M	DFT-S 64QAM	1	1	18.67	18.88	18.80
20M	DFT-S 256QAM	1	1	16.55	16.65	16.66
20M	CP QPSK	1	1	19.55	19.78	19.82

*EIRP (dBm/10MHz) = Conducted Output Power (dBm/10MHz) + Antenna Gain (dBi).

NR Band 48_Per 10M						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		637000	641666	646332
		Frequence (MHz)		3555	3624.99	3694.98
10M	DFT-S PI/2 BPSK	1	1	21.19	21.21	21.30
10M	DFT-S QPSK	1	1	21.27	21.36	21.34
		1	11	20.99	21.27	21.20
		1	22	20.84	21.21	21.09
		12	0	20.09	20.17	20.15
		12	6	20.92	21.27	21.26
		12	12	20.13	20.31	20.33
		24	0	20.07	20.27	20.36
10M	DFT-S 16QAM	1	1	19.99	20.04	20.03
10M	DFT-S 64QAM	1	1	18.52	18.77	18.66
10M	DFT-S 256QAM	1	1	16.55	16.57	16.52
10M	CP QPSK	1	1	19.53	19.73	19.75

*EIRP (dBm/10MHz) = Conducted Output Power (dBm/10MHz) + Antenna Gain (dBi).

Full Maximum EIRP (dBm/40MHz)

NR Band 48						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		638000	641666	645332
		Frequency (MHz)		3570	3624.99	3679.98
40M	DFT-S PI/2 BPSK	1	1	21.44	21.56	21.51
40M	DFT-S QPSK	1	1	21.46	21.61	21.60
		1	53	21.17	21.54	21.45
		1	104	21.01	21.52	21.39
		50	0	20.31	20.59	20.39
		50	28	21.13	21.48	21.34
		50	56	20.28	20.59	20.45
		100	0	20.21	20.56	20.43
40M	DFT-S 16QAM	1	1	20.15	20.45	20.38
40M	DFT-S 64QAM	1	1	18.83	19.11	19.02
40M	DFT-S 256QAM	1	1	16.60	16.93	16.87
40M	CP QPSK	1	1	19.74	19.99	19.95

*EIRP (dBm/40MHz) = Conducted Output Power (dBm/40MHz) + Antenna Gain (dBi).

Full Maximum EIRP (dBm/20MHz)

NR Band 48						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		637334	641666	646000
		Frequency (MHz)		3560.01	3624.99	3690
20M	DFT-S PI/2 BPSK	1	1	21.36	21.49	21.50
20M	DFT-S QPSK	1	1	21.46	21.57	21.51
		1	26	21.23	21.49	21.42
		1	49	21.20	21.46	21.37
		25	0	20.26	20.51	20.39
		25	13	21.06	21.42	21.32
		25	26	20.22	20.57	20.55
		50	0	20.29	20.53	20.46
20M	DFT-S 16QAM	1	1	20.14	20.39	20.33
20M	DFT-S 64QAM	1	1	18.86	19.03	18.93
20M	DFT-S 256QAM	1	1	16.66	16.83	16.89
20M	CP QPSK	1	1	19.67	19.92	19.89

*EIRP (dBm/20MHz) = Conducted Output Power (dBm/20MHz) + Antenna Gain (dBi).

Full Maximum EIRP (dBm/10MHz)

NR Band 48						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		637000	641666	646332
		Frequency (MHz)		3555	3624.99	3694.98
10M	DFT-S PI/2 BPSK	1	1	21.22	21.37	21.46
10M	DFT-S QPSK	1	1	21.46	21.42	21.42
		1	11	21.14	21.36	21.34
		1	22	21.19	22.43	22.30
		12	0	20.18	20.48	20.38
		12	6	21.03	21.47	21.35
		12	12	20.14	20.45	20.32
		24	0	20.23	20.39	20.41
10M	DFT-S 16QAM	1	1	20.07	20.22	20.24
10M	DFT-S 64QAM	1	1	18.78	18.95	18.94
10M	DFT-S 256QAM	1	1	16.54	16.72	16.87
10M	CP QPSK	1	1	19.67	19.82	19.95

*EIRP (dBm/10MHz) = Conducted Output Power (dBm/10MHz) + Antenna Gain (dBi).

7.2 Radiated Spurious Emissions below 1GHz

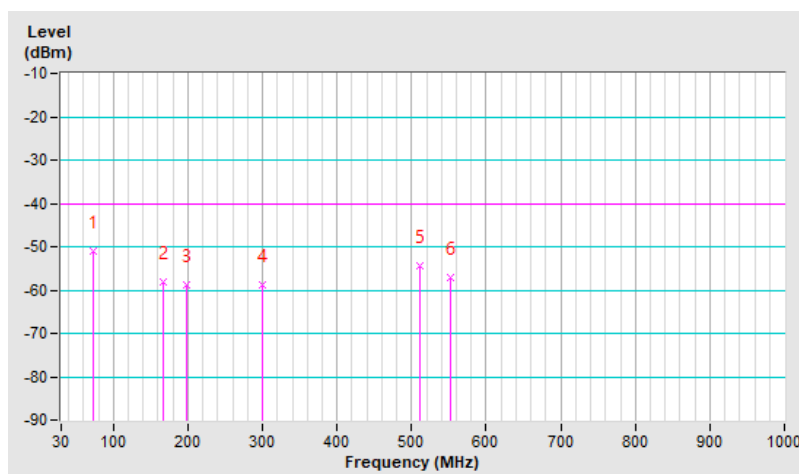
7.2.1 NR n48 SCS 30 kHz

RF Mode	NR n48 Channel Bandwidth: 40MHz	Channel	CH 641666 : 3624.99 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Tested By	Rex Wang	Environmental Conditions	23°C, 67% RH

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	73.65	-50.85	-40.00	-10.85	1.50 H	8	56.72	-107.57
2	167.74	-58.10	-40.00	-18.10	1.00 H	226	46.54	-104.64
3	198.78	-58.79	-40.00	-18.79	1.50 H	184	48.59	-107.38
4	299.66	-58.91	-40.00	-18.91	2.00 H	6	44.22	-103.13
5	511.12	-54.54	-40.00	-14.54	1.00 H	190	44.69	-99.23
6	552.83	-57.00	-40.00	-17.00	1.00 H	94	41.61	-98.61

Remarks:

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

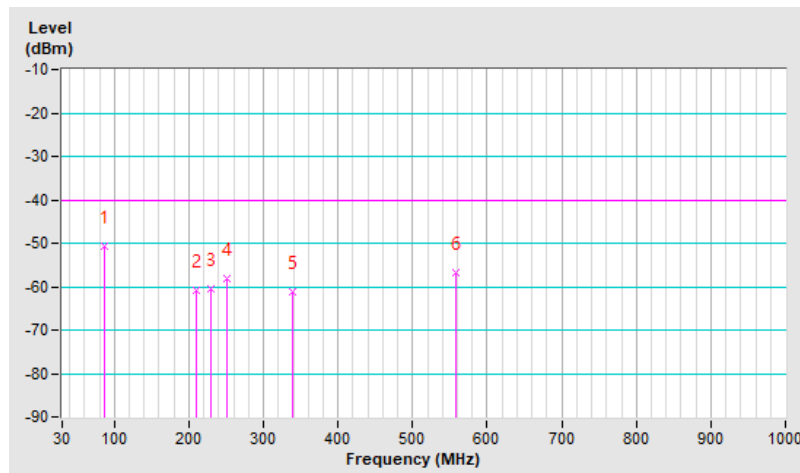


RF Mode	NR n48 Channel Bandwidth: 40MHz	Channel	CH 638000 : 3570 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Tested By	Rex Wang	Environmental Conditions	23°C, 67% RH

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	87.23	-50.59	-40.00	-10.59	1.00 V	195	59.60	-110.19
2	209.45	-60.73	-40.00	-20.73	1.00 V	271	46.48	-107.21
3	229.82	-60.44	-40.00	-20.44	1.00 V	308	46.45	-106.89
4	250.19	-57.98	-40.00	-17.98	1.00 V	261	46.98	-104.96
5	339.43	-61.22	-40.00	-21.22	1.00 V	4	41.26	-102.48
6	558.65	-56.83	-40.00	-16.83	1.00 V	90	41.62	-98.45

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
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 9kHz~30MHz: 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 n48 SCS 30 kHz

RF Mode	NR n48 Channel Bandwidth: 10MHz	Channel	CH 637000 : 3555.00 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Tested By	Rex Wang	Environmental Conditions	19°C, 71% RH

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	7110.00	-41.13	-40.00	-1.13	1.64 H	246	43.85	-84.98
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	7110.00	-40.70	-40.00	-0.70	1.88 V	24	44.28	-84.98

Remarks:

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



RF Mode	NR n48 Channel Bandwidth: 10MHz	Channel	CH 641666 : 3624.99 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Tested By	Rex Wang	Environmental Conditions	19°C, 71% RH

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	7249.98	-41.15	-40.00	-1.15	1.66 H	245	43.35	-84.50
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	7249.98	-40.82	-40.00	-0.82	1.92 V	28	43.68	-84.50

Remarks:

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



RF Mode	NR n48 Channel Bandwidth: 10MHz	Channel	CH 646332 : 3694.98 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Tested By	Rex Wang	Environmental Conditions	19°C, 71% RH

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	7389.96	-41.02	-40.00	-1.02	1.68 H	243	43.46	-84.48
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	7389.96	-40.66	-40.00	-0.66	1.95 V	30	43.82	-84.48

Remarks:

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

RF Mode	NR n48 Channel Bandwidth: 20MHz	Channel	CH 637334 : 3560.01 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Tested By	Rex Wang	Environmental Conditions	19°C, 71% RH

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	7120.02	-41.12	-40.00	-1.12	1.70 H	238	43.86	-84.98
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	7120.02	-40.61	-40.00	-0.61	1.90 V	24	44.37	-84.98

Remarks:

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



RF Mode	NR n48 Channel Bandwidth: 20MHz	Channel	CH 640000 : 3624.99 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Tested By	Rex Wang	Environmental Conditions	19°C, 71% RH

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	7249.98	-41.16	-40.00	-1.16	1.65 H	241	43.34	-84.50

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	7249.98	-40.74	-40.00	-0.74	1.94 V	18	43.76	-84.50

Remarks:

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



RF Mode	NR n48 Channel Bandwidth: 20MHz	Channel	CH 642666 : 3690 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Tested By	Rex Wang	Environmental Conditions	19°C, 71% RH

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	7380.00	-40.97	-40.00	-0.97	1.72 H	242	43.52	-84.49
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	7380.00	-40.68	-40.00	-0.68	1.87 V	24	43.81	-84.49

Remarks:

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



RF Mode	NR n48 Channel Bandwidth: 40MHz	Channel	CH 638000 : 3570 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Tested By	Rex Wang	Environmental Conditions	19°C, 71% RH

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	7140.00	-41.19	-40.00	-1.19	1.62 H	244	43.77	-84.96
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	7140.00	-40.60	-40.00	-0.60	1.92 V	20	44.36	-84.96

Remarks:

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



RF Mode	NR n48 Channel Bandwidth: 40MHz	Channel	CH 640000 : 3624.99 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Tested By	Rex Wang	Environmental Conditions	19°C, 71% RH

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	7249.98	-41.05	-40.00	-1.05	1.69 H	246	43.45	-84.50
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	7249.98	-40.54	-40.00	-0.54	1.94 V	22	43.96	-84.50

Remarks:

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



RF Mode	NR n48 Channel Bandwidth: 40MHz	Channel	CH 642000 : 3679.98 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Tested By	Rex Wang	Environmental Conditions	19°C, 71% RH

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	7359.96	-41.04	-40.00	-1.04	1.64 H	245	43.46	-84.50
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	7359.96	-40.65	-40.00	-0.65	1.91 V	25	43.85	-84.50

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
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:

Lin Kou EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@bureauveritas.com

Web Site: <http://ee.bureauveritas.com.tw>

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

--- END ---