TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 96** **47 CFR FCC Part 2**
Report No.:	RFBCMA-WTW-P23030799B-3
FCC ID:	RAXTMOG4AR
Product:	5G Gateway
Brand:	T-Mobile
Model No.:	TMO-G4AR
Received Date:	2023/5/12
Test Date:	2023/5/20 ~ 2023/6/7
Issued Date:	2023/6/14
Applicant:	Arcadyan Technology Corporation
Address:	No.8, Sec.2, Guangfu Rd.,Hsinchu City 30071, Taiwan, R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
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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:** 2023/6/14

Jeremy Lin / Project Engineer

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Prepared by : Vera Huang / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBCMA-WTW-P23030799B-3	Original Release	2023/6/14

1 Certificate

Product:	5G Gateway
Brand:	T-Mobile
Test Model:	TMO-G4AR
Sample Status:	Engineering Sample
Applicant:	Arcadyan Technology Corporation
Test Date:	2023/5/20 ~ 2023/6/7
Standard:	47 CFR FCC Part 96 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 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 1
FCC 47 CFR Part 96.41(g)	Peak to Average Ratio	N/A	Refer to Note 1
FCC 47 CFR Part 2.1049	Bandwidth	N/A	Refer to Note 1
FCC 47 CFR Part 2.1051 FCC 47 CFR Part 96.41(e)	Conducted Spurious Emissions	N/A	Refer to Note 1
FCC 47 CFR Part 2.1053 FCC 47 CFR Part 96.41(e)	Radiated Spurious Emissions below 1GHz	Pass	Minimum passing margin is -2.98 dB at 95.96 MHz
FCC 47 CFR Part 2.1053 FCC 47 CFR Part 96.41(e)	Radiated Spurious Emissions above 1GHz	Pass	Minimum passing margin is -1.64 dB at 7359.96 MHz
FCC 47 CFR Part 2.1055	Frequency Stability	N/A	Refer to Note 1

Note:

1. Only test item of Equivalent Isotropically Radiated Power and Radiated Spurious Emissions tests were performed for this report. Other testing data please refer to SGS-CSRC Standards Technical Services (Suzhou) Co., Ltd. Report No.: KSCR2210001872AT (5G Module, Brand: Fibocom, Model: FG360-NA, FCC ID: ZMOFG360NA08).
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:

Parameter	Specification	Uncertainty (±)
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	5G Gateway
Brand	T-Mobile
Test Model	TMO-G4AR
Status of EUT	Engineering Sample
Power Supply Rating	20Vdc or 15Vdc or 12Vdc or 9Vdc or 5Vdc (From adapter)

Note:

1. This report is prepared for FCC class II permissive change. The difference compared with the original report (BV CPS report no.: RFBCMA-WTW-P23030799-6) is adding external antenna.
2. Due to Band 48 (Include CA mode) EIRP over limit. Therefore, Band 48 (Include CA mode) need reduce power. And base on conducted power less than 5G module (Fibocom FG360-NA), the conducted data still leverage after verify. Also record EIRP power in the report with external antenna to prove it not over the limit.
3. There are different power table for external and internal antenna, and external and internal antenna was control by FW to use, it not use at the same time.
4. The EUT supports the following configuration.

5GNR	FCC 5G FR1		
	Band	SCS	Bandwidth (MHz)
	n48	15kHz	5/10/15/20/40
		30kHz	10/15/20/40

5. EUT Overview.

Band / Bandwidth	TX Frequency Range (MHz)	Max. EIRP Power					
SCS 15kHz, SISO							
n48 (Channel Bandwidth 40MHz)	3570.00-3679.995	QPSK	20.80	dBm	/	120.226	mW
		16QAM	20.62	dBm	/	115.345	mW
		64QAM	19.21	dBm	/	83.368	mW
		256QAM	17.37	dBm	/	54.576	mW
SCS 15kHz, MIMO							
n48 (Channel Bandwidth 40MHz)	3570.00-3679.995	QPSK	19.93	dBm	/	98.401	mW
		16QAM	19.85	dBm	/	96.605	mW
		64QAM	18.42	dBm	/	69.502	mW
		256QAM	15.44	dBm	/	34.995	mW

Band / Bandwidth	TX Frequency Range (MHz)	Max. EIRP Power					
SCS 30kHz, SISO							
n48 (Channel Bandwidth 10MHz)	3555.00-3694.98	QPSK	20.79	dBm	/	119.950	mW
		16QAM	20.57	dBm	/	114.025	mW
		64QAM	19.34	dBm	/	85.901	mW
		256QAM	17.76	dBm	/	59.704	mW
n48 (Channel Bandwidth 15MHz)	3557.52-3692.49	QPSK	20.73	dBm	/	118.304	mW
		16QAM	20.61	dBm	/	115.080	mW
		64QAM	19.30	dBm	/	85.114	mW
		256QAM	17.72	dBm	/	59.156	mW
n48 (Channel Bandwidth 20MHz)	3560.01-3690.00	QPSK	20.94	dBm	/	124.165	mW
		16QAM	20.71	dBm	/	117.761	mW
		64QAM	19.18	dBm	/	82.794	mW
		256QAM	17.65	dBm	/	58.210	mW
n48 (Channel Bandwidth 40MHz)	3570.00-3679.98	QPSK	20.89	dBm	/	122.744	mW
		16QAM	20.82	dBm	/	120.781	mW
		64QAM	19.28	dBm	/	84.723	mW
		256QAM	17.61	dBm	/	57.677	mW
SCS 30kHz, MIMO							
n48 (Channel Bandwidth 10MHz)	3555.00-3694.98	QPSK	19.94	dBm	/	98.628	mW
		16QAM	19.82	dBm	/	95.940	mW
		64QAM	18.47	dBm	/	70.307	mW
		256QAM	15.52	dBm	/	35.645	mW
n48 (Channel Bandwidth 15MHz)	3557.52-3692.49	QPSK	19.99	dBm	/	99.770	mW
		16QAM	19.78	dBm	/	95.060	mW
		64QAM	18.41	dBm	/	69.343	mW
		256QAM	15.48	dBm	/	35.318	mW
n48 (Channel Bandwidth 20MHz)	3560.01-3690.00	QPSK	19.89	dBm	/	97.499	mW
		16QAM	19.86	dBm	/	96.828	mW
		64QAM	18.39	dBm	/	69.024	mW
		256QAM	15.56	dBm	/	35.975	mW
n48 (Channel Bandwidth 40MHz)	3570.00-3679.98	QPSK	19.98	dBm	/	99.541	mW
		16QAM	19.83	dBm	/	96.161	mW
		64QAM	18.47	dBm	/	70.307	mW
		256QAM	15.49	dBm	/	35.400	mW

6. The EUT uses following accessories.

AC Adapter 1		
Brand	Model	Specification
LUCENT TRANS	1A78	AC Input : 100~240V, 1.2A, 50-60Hz DC Output : 5.0V, 3.0A,15W or 9.0V, 3.0A, 27W or 12.0V, 3.0A, 36W or 15.0V, 3.0A, 45W or 20.0V, 2.25A, 45W DC Output Cable : 1.85 M , non-shielded cable, W/O ferrite core Plug : US
AC Adapter 2		
Brand	Model	Specification
MASS POWER	PD045E-C1C0AVU	AC Input : 100~240V, 1.0A, 50-60Hz DC Output : 5.0V, 3.0A or 9.0V, 3.0A or 12.0V, 3.0A or 15.0V, 3.0A or 20.0V, 2.25A, 45W DC Output Cable : 1.8 M , non-shielded cable, W/O ferrite core Plug : US

*The adapter 1 was chosen for final test.

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 NO.	RF Chain NO.	Brand	Model	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connector Type
WWAN Antenna (Internal)	B71 (TRx) (M2)	PSA	RFPCA811609IMMB403_B	3.17	663-698 MHz	Monopole	ipex(MHF1)
	B71 (Rx) (M1)		RFPCA811609IMMB402_A	3.10	663-698 MHz	Monopole	ipex(MHF1)
	B71 (Rx) (D1)		RFPCA652018IMMB401_A	2.09	663-698 MHz	Monopole	ipex(MHF1)
	B71 (Rx)(D2)		RFFPA656320IMMB401_B	2.01	663-698 MHz	Monopole	ipex(MHF1)
	B12 (TRx) (M2)	PSA	RFPCA811609IMMB403_B	3.34	698-716 MHz	Monopole	ipex(MHF1)
	B12 (Rx) (D2)		RFFPA656320IMMB401_B	2.05	698-716 MHz	Monopole	ipex(MHF1)
	B5 (TRx) (M2)	PSA	RFPCA811609IMMB403_B	1.68	824-849 MHz	Monopole	ipex(MHF1)
	B5 (Rx) (D2)		RFFPA656320IMMB401_B	0.63	824-849 MHz	Monopole	ipex(MHF1)
	B4/B66 (TRx) (M2)	PSA	RFPCA811609IMMB403_B	3.69	1710-1780 MHz	Monopole	ipex(MHF1)
	B4/B66 (TRx) (M1)		RFPCA811609IMMB402_A	5.13	1710-1780 MHz	Monopole	ipex(MHF1)
	B4/B66 (Rx) (D1)		RFPCA652018IMMB401_A	4.26	1710-1780 MHz	Monopole	ipex(MHF1)
	B4/B66 (Rx) (D2)		RFFPA656320IMMB401_B	4.10	1710-1780 MHz	Monopole	ipex(MHF1)
	B2/B25 (TRx) (M2)	PSA	RFPCA811609IMMB403_B	3.33	1850-1915 MHz	Monopole	ipex(MHF1)
	B2/B25 (TRx) (M1)		RFPCA811609IMMB402_A	4.78	1850-1915 MHz	Monopole	ipex(MHF1)
	B2/B25 (Rx) (D1)		RFPCA652018IMMB401_A	3.79	1850-1915 MHz	Monopole	ipex(MHF1)
	B2/B25 (Rx) (D2)		RFFPA656320IMMB401_B	4.11	1850-1915 MHz	Monopole	ipex(MHF1)
	B41 (TRx) (M2)	PSA	RFPCA811609IMMB403_B	2.78	2496-2690 MHz	Monopole	ipex(MHF1)
	B41 (TRx) (M1)		RFPCA811609IMMB402_A	3.02	2496-2690 MHz	Monopole	ipex(MHF1)
	B41 (Rx) (Omni-Antenna HC1O)		RFPCA380906IMMB401_A	4.45	2496-2690 MHz	Dipole	ipex(MHF1)
	B41 (Rx) (Omni-Antenna HC2O)		RFPCA380912IMMB401_A	3.67	2496-2690 MHz	Dipole	ipex(MHF1)
	B41 (Rx) (Semi-Antenna HC1S)		RFPCA474709IMMB401_A	7.59	2496-2690 MHz	Dipole	ipex(MHF1)
	B41 (Rx) (Semi-Antenna HC2S)		RFPCA474709IMMB401_A	7.76	2496-2690 MHz	Dipole	ipex(MHF1)
	B48 (TRx) (M2)	PSA	RFPCA811609IMMB403_B	0.94	3550-3700 MHz	Monopole	ipex(MHF1)
	B48 (TRx) (M1)		RFPCA811609IMMB402_A	1.02	3550-3700 MHz	Monopole	ipex(MHF1)
	B48 (Rx) (Omni-Antenna HC1O)		RFPCA380906IMMB401_A	4.64	3550-3700 MHz	Dipole	ipex(MHF1)
	B48 (Rx) (Omni-Antenna HC2O)		RFPCA380912IMMB401_A	4.03	3550-3700 MHz	Dipole	ipex(MHF1)
	B48 (Rx) (Semi-Antenna HC1S)		RFPCA474709IMMB401_A	7.67	3550-3700 MHz	Dipole	ipex(MHF1)
	B48 (Rx) (Semi-Antenna HC2S)		RFPCA474709IMMB401_A	8.01	3550-3700 MHz	Dipole	ipex(MHF1)
	B77 (TRx) (M2)	PSA	RFPCA811609IMMB403_B	0.84	3300-4200 MHz	Monopole	ipex(MHF1)
	B77(TRx) (M1)		RFPCA811609IMMB402_A	0.91	3300-4200 MHz	Monopole	ipex(MHF1)
	B77 (Rx) (Omni-Antenna HC1O)		RFPCA380906IMMB401_A	4.73	3300-4200 MHz	Dipole	ipex(MHF1)
	B77 (Rx) (Omni-Antenna HC2O)		RFPCA380912IMMB401_A	4.14	3300-4200 MHz	Dipole	ipex(MHF1)
	B77 (Rx) (Semi-Antenna HC1S)		RFPCA474709IMMB401_A	7.98	3300-4200 MHz	Dipole	ipex(MHF1)
	B77 (Rx) (Semi-Antenna HC2S)		RFPCA474709IMMB401_A	8.13	3300-4200 MHz	Dipole	ipex(MHF1)

* The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.
* Only NR n41/48/77 support 2TX/2RX, other bands support 1TX/1RX only.

Antenna No.	RF Chain No.	Brand	Model	Antenna Net Gain (dBi)	Frequency range	Antenna Type	Connector Type
WWAN Antenna (External)	B71	TAOGLAS	ANT1	0.80	663-698 MHz	PIFA	ipex(MHF)
	B71		ANT2	1.50	663-698 MHz	PIFA	ipex(MHF)
	B71		ANT3	1.90	663-698 MHz	PIFA	ipex(MHF)
	B71		ANT4	1.40	663-698 MHz	PIFA	ipex(MHF)
	B12	TAOGLAS	ANT1	1.20	698-716 MHz	PIFA	ipex(MHF)
	B12		ANT2	1.40	698-716 MHz	PIFA	ipex(MHF)
	B12		ANT3	0.80	698-716 MHz	PIFA	ipex(MHF)
	B12		ANT4	0.80	698-716 MHz	PIFA	ipex(MHF)
	B5	TAOGLAS	ANT1	-1.00	824-849 MHz	PIFA	ipex(MHF)
	B5		ANT2	-1.80	824-849 MHz	PIFA	ipex(MHF)
	B5		ANT3	1.50	824-849 MHz	PIFA	ipex(MHF)
	B5		ANT4	-1.70	824-849 MHz	PIFA	ipex(MHF)
	B4/B66	TAOGLAS	ANT1	4.40	1710-1780 MHz	PIFA	ipex(MHF)
	B4/B66		ANT2	3.70	1710-1780 MHz	PIFA	ipex(MHF)
	B4/B66		ANT3	4.60	1710-1780 MHz	PIFA	ipex(MHF)
	B4/B66		ANT4	3.80	1710-1780 MHz	PIFA	ipex(MHF)
	B2/B25	TAOGLAS	ANT1	4.00	1850-1915 MHz	PIFA	ipex(MHF)
	B2/B25		ANT2	3.50	1850-1915 MHz	PIFA	ipex(MHF)
	B2/B25		ANT3	4.60	1850-1915 MHz	PIFA	ipex(MHF)
	B2/B25		ANT4	3.60	1850-1915 MHz	PIFA	ipex(MHF)
	B41	TAOGLAS	ANT1	3.90	2496-2690 MHz	PIFA	ipex(MHF)
	B41		ANT2	3.80	2496-2690 MHz	PIFA	ipex(MHF)
	B41		ANT3	2.90	2496-2690 MHz	PIFA	ipex(MHF)
	B41		ANT4	4.00	2496-2690 MHz	PIFA	ipex(MHF)
	B48	TAOGLAS	ANT1	2.60	3550-3700 MHz	PIFA	ipex(MHF)
	B48		ANT2	2.30	3550-3700 MHz	PIFA	ipex(MHF)
	B48		ANT3	1.70	3550-3700 MHz	PIFA	ipex(MHF)
	B48		ANT4	2.40	3550-3700 MHz	PIFA	ipex(MHF)
	B77	TAOGLAS	ANT1	3.20	3300-4200 MHz	PIFA	ipex(MHF)
	B77		ANT2	2.80	3300-4200 MHz	PIFA	ipex(MHF)
	B77		ANT3	3.80	3300-4200 MHz	PIFA	ipex(MHF)
	B77		ANT4	2.90	3300-4200 MHz	PIFA	ipex(MHF)

* The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.
* Only NR n41/48/77 support 2TX/2RX, other bands support 1TX/1RX only.

3.3 Test Mode Applicability and Tested Channel Detail

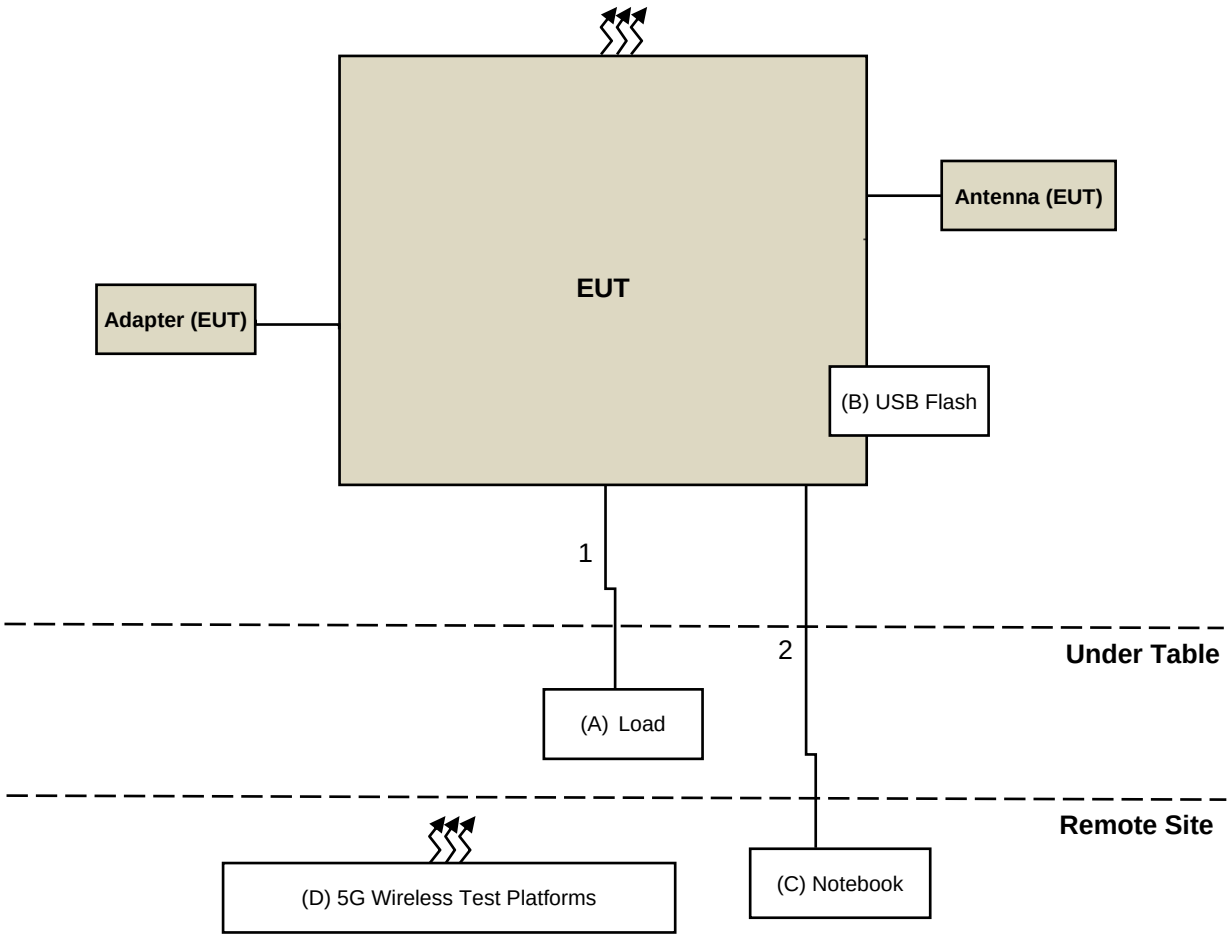
Pre-Scan:	EUT can be used in the following ways: X-axis/ Y-axis/ Z-axis. Pre-scan these ways and find the worst case as a representative test condition.
Worst Case:	X-axis/ Y-axis/ Z-axis Worst Condition: Z-axis

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	637000 (3555.00 MHz) 641666 (3624.99 MHz) 646332 (3694.98 MHz)	10 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	637168 (3557.52 MHz) 641666 (3624.99 MHz) 646166 (3692.49 MHz)	15 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	637334 (3560.01 MHz) 641666 (3624.99 MHz) 646000 (3690.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	638000 (3570.00 MHz) 641666 (3624.99 MHz) 645332 (3679.98 MHz)	40 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
RE Below 1GHz	646000 (3690.00 MHz)	20 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 Radio Communication Analyzer 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	Load	NA	NA	NA	NA	Provided by Lab
B	USB Flash	SanDisk G	SDDDC3-032	NA	NA	Provided by Lab
C	Notebook	Lenovo	80Q7	PF0KUGU6	FCC DoC Approveded	Provided by Lab
D	5G Wireless Test Platforms	Keysight	E7515B	NA	NA	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	RJ-45 Cable	1	1.5	No	0	Provided by Lab
2	RJ-45 Cable	1	10	No	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 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	MY59321376	2023/3/13	2024/3/12
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: 2023/6/2

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	2022/7/27	2023/7/26
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: 2023/5/23

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	2022/7/9	2023/7/8
	EMC102-KM-KM-3000	150929	2022/7/9	2023/7/8
	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: 2023/5/20 ~ 2023/6/7

5 Limits of Test Items

5.1 Maximum EIRP

Device		Maximum EIRP (dBm/10 MHz)
☒	End User Device	23
☐	Category A CBSD	30
☐	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

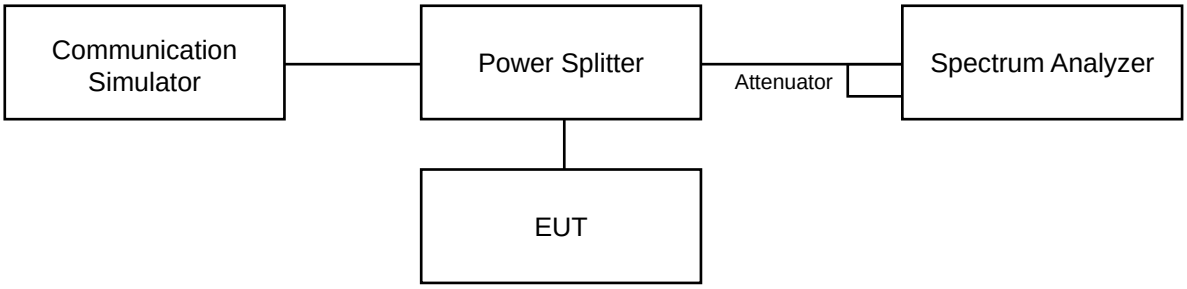
Power of any emissions outside the Fundamental	Limit
Within 0-10MHz above the Assigned Channel	-13 dBm/MHz
Within 0-10MHz below the Assigned Channel	
Greater than 10MHz above the Assigned Channel	-25 dBm/MHz
Greater than 10MHz below the Assigned Channel	
Power of any emission below 3530MHz	-40 dBm/MHz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

$EIRP = P_{Meas} + G_T$

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

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)

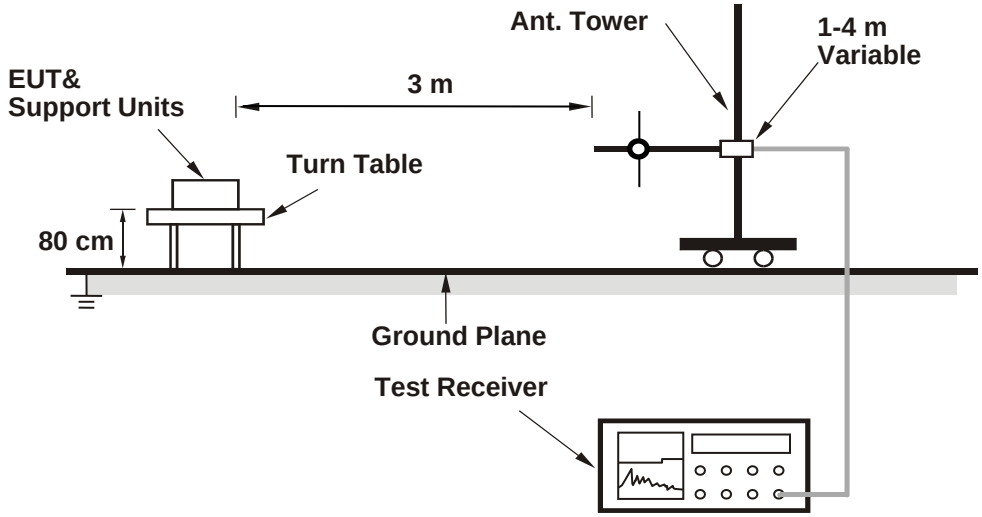
P_{Meas} measured transmitter output power or PSD, in dBm or dBW

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.

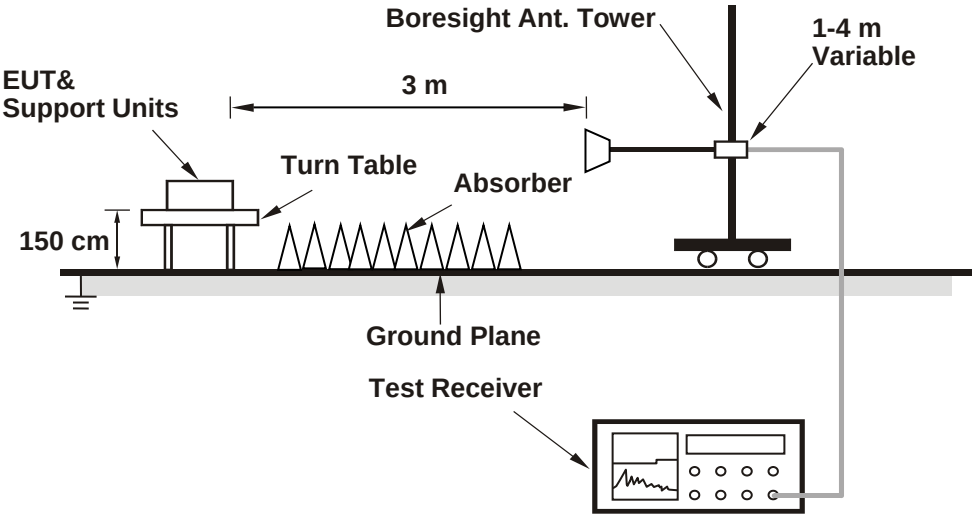
Note:

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 Maximum EIRP

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	22°C, 70% RH	Tested By:	James Yang

7.1.1 NR n48 SCS 15 kHz

SISO

Band	SCS	Bandwidth	Modulation	Channel	RB Configuration	Conducted Output Power (dBm)	EIRP Power (dBm)
NR n48	15	40	DFT-QPSK	L	Inner_1RB_Left	18.2	20.8
NR n48	15	40	DFT-QPSK	L	Inner_1RB_Right	17.94	20.54
NR n48	15	40	DFT-QPSK	L	Outer_Full	17.63	20.23
NR n48	15	40	DFT-16QAM	L	Inner_1RB_Left	16.82	19.42
NR n48	15	40	DFT-16QAM	L	Inner_1RB_Right	16.65	19.25
NR n48	15	40	DFT-16QAM	L	Outer_Full	16.52	19.12
NR n48	15	40	DFT-64QAM	L	Inner_1RB_Left	15.64	18.24
NR n48	15	40	DFT-64QAM	L	Inner_1RB_Right	15.85	18.45
NR n48	15	40	DFT-64QAM	L	Outer_Full	15.71	18.31
NR n48	15	40	DFT-256QAM	L	Inner_1RB_Left	14.69	17.29
NR n48	15	40	DFT-256QAM	L	Inner_1RB_Right	14.14	16.74
NR n48	15	40	DFT-256QAM	L	Outer_Full	14.45	17.05
NR n48	15	40	DFT-QPSK	M	Inner_1RB_Left	18.02	20.62
NR n48	15	40	DFT-QPSK	M	Inner_1RB_Right	17.94	20.54
NR n48	15	40	DFT-QPSK	M	Outer_Full	17.18	19.78
NR n48	15	40	DFT-16QAM	M	Inner_1RB_Left	17.33	19.93
NR n48	15	40	DFT-16QAM	M	Inner_1RB_Right	17.14	19.74
NR n48	15	40	DFT-16QAM	M	Outer_Full	16.25	18.85
NR n48	15	40	DFT-64QAM	M	Inner_1RB_Left	16.32	18.92
NR n48	15	40	DFT-64QAM	M	Inner_1RB_Right	16.18	18.78
NR n48	15	40	DFT-64QAM	M	Outer_Full	15.79	18.39
NR n48	15	40	DFT-256QAM	M	Inner_1RB_Left	14.7	17.3
NR n48	15	40	DFT-256QAM	M	Inner_1RB_Right	14.77	17.37
NR n48	15	40	DFT-256QAM	M	Outer_Full	14.58	17.18
NR n48	15	40	DFT-QPSK	H	Inner_1RB_Left	18.06	20.66
NR n48	15	40	DFT-QPSK	H	Inner_1RB_Right	18.1	20.7
NR n48	15	40	DFT-QPSK	H	Outer_Full	17.68	20.28
NR n48	15	40	DFT-16QAM	H	Inner_1RB_Left	18.02	20.62
NR n48	15	40	DFT-16QAM	H	Inner_1RB_Right	17.92	20.52
NR n48	15	40	DFT-16QAM	H	Outer_Full	17.05	19.65
NR n48	15	40	DFT-64QAM	H	Inner_1RB_Left	16.3	18.9
NR n48	15	40	DFT-64QAM	H	Inner_1RB_Right	16.33	18.93
NR n48	15	40	DFT-64QAM	H	Outer_Full	16.61	19.21
NR n48	15	40	DFT-256QAM	H	Inner_1RB_Left	14.75	17.35
NR n48	15	40	DFT-256QAM	H	Inner_1RB_Right	14.71	17.31
NR n48	15	40	DFT-256QAM	H	Outer_Full	14.65	17.25

Note:

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

MIMO

Band	SCS	Bandwidth	Modulation	Channel	RB Config	Conducted Output Power (dBm)		Total Power (dBm)	EIRP Power (dBm)
						Ant1	Ant2		
NR n48	15	40	CP-QPSK	L	Inner_1RB_Left	14.27	14.29	17.29	19.89
NR n48	15	40	CP-QPSK	L	Inner_1RB_Right	14.29	14.15	17.23	19.83
NR n48	15	40	CP-QPSK	L	Outer_Full	13.37	13.1	16.25	18.85
NR n48	15	40	CP-16QAM	L	Inner_1RB_Left	12.96	13.33	16.16	18.76
NR n48	15	40	CP-16QAM	L	Inner_1RB_Right	12.93	12.97	15.96	18.56
NR n48	15	40	CP-16QAM	L	Outer_Full	13.22	13.22	16.23	18.83
NR n48	15	40	CP-64QAM	L	Inner_1RB_Left	12.6	12.93	15.78	18.38
NR n48	15	40	CP-64QAM	L	Inner_1RB_Right	12.62	12.96	15.80	18.40
NR n48	15	40	CP-64QAM	L	Outer_Full	12.44	12.8	15.63	18.23
NR n48	15	40	CP-256QAM	L	Inner_1RB_Left	9.75	9.81	12.79	15.39
NR n48	15	40	CP-256QAM	L	Inner_1RB_Right	9.67	9.73	12.71	15.31
NR n48	15	40	CP-256QAM	L	Outer_Full	9.9	9.75	12.84	15.44
NR n48	15	40	CP-QPSK	M	Inner_1RB_Left	14.05	14.42	17.25	19.85
NR n48	15	40	CP-QPSK	M	Inner_1RB_Right	14.39	14.13	17.27	19.87
NR n48	15	40	CP-QPSK	M	Outer_Full	12.99	13.26	16.14	18.74
NR n48	15	40	CP-16QAM	M	Inner_1RB_Left	14.25	14.06	17.17	19.77
NR n48	15	40	CP-16QAM	M	Inner_1RB_Right	13.85	14.17	17.02	19.62
NR n48	15	40	CP-16QAM	M	Outer_Full	13.28	12.93	16.12	18.72
NR n48	15	40	CP-64QAM	M	Inner_1RB_Left	12.58	12.67	15.64	18.24
NR n48	15	40	CP-64QAM	M	Inner_1RB_Right	12.87	12.63	15.76	18.36
NR n48	15	40	CP-64QAM	M	Outer_Full	12.48	12.58	15.54	18.14
NR n48	15	40	CP-256QAM	M	Inner_1RB_Left	9.88	9.74	12.82	15.42
NR n48	15	40	CP-256QAM	M	Inner_1RB_Right	9.66	9.68	12.68	15.28
NR n48	15	40	CP-256QAM	M	Outer_Full	9.78	9.57	12.69	15.29
NR n48	15	40	CP-QPSK	H	Inner_1RB_Left	14.3	14.34	17.33	19.93
NR n48	15	40	CP-QPSK	H	Inner_1RB_Right	14.05	14.36	17.22	19.82
NR n48	15	40	CP-QPSK	H	Outer_Full	13.18	13.03	16.12	18.72
NR n48	15	40	CP-16QAM	H	Inner_1RB_Left	14.2	14.27	17.25	19.85
NR n48	15	40	CP-16QAM	H	Inner_1RB_Right	13.96	14	16.99	19.59
NR n48	15	40	CP-16QAM	H	Outer_Full	13.01	13.01	16.02	18.62
NR n48	15	40	CP-64QAM	H	Inner_1RB_Left	12.9	12.72	15.82	18.42
NR n48	15	40	CP-64QAM	H	Inner_1RB_Right	12.6	12.7	15.66	18.26
NR n48	15	40	CP-64QAM	H	Outer_Full	12.72	12.51	15.63	18.23
NR n48	15	40	CP-256QAM	H	Inner_1RB_Left	9.78	9.82	12.81	15.41
NR n48	15	40	CP-256QAM	H	Inner_1RB_Right	9.72	9.83	12.79	15.39
NR n48	15	40	CP-256QAM	H	Outer_Full	9.89	9.62	12.77	15.37

Note:

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

7.1.2 NR n48 SCS 30 kHz

SISO

Band	SCS	Bandwidth	Modulation	Channel	RB Configuration	Conducted Output Power (dBm)	EIRP Power (dBm)
NR n48	30	10	DFT-QPSK	L	Inner_1RB_Left	18.08	20.68
NR n48	30	10	DFT-QPSK	L	Inner_1RB_Right	18.19	20.79
NR n48	30	10	DFT-QPSK	L	Outer_Full	18.14	20.74
NR n48	30	10	DFT-16QAM	L	Inner_1RB_Left	17.97	20.57
NR n48	30	10	DFT-16QAM	L	Inner_1RB_Right	17.84	20.44
NR n48	30	10	DFT-16QAM	L	Outer_Full	17.34	19.94
NR n48	30	10	DFT-64QAM	L	Inner_1RB_Left	16.34	18.94
NR n48	30	10	DFT-64QAM	L	Inner_1RB_Right	16.18	18.78
NR n48	30	10	DFT-64QAM	L	Outer_Full	16.74	19.34
NR n48	30	10	DFT-256QAM	L	Inner_1RB_Left	15.16	17.76
NR n48	30	10	DFT-256QAM	L	Inner_1RB_Right	15.1	17.7
NR n48	30	10	DFT-256QAM	L	Outer_Full	14.71	17.31
NR n48	30	10	DFT-QPSK	M	Inner_1RB_Left	18.14	20.74
NR n48	30	10	DFT-QPSK	M	Inner_1RB_Right	17.9	20.5
NR n48	30	10	DFT-QPSK	M	Outer_Full	17.46	20.06
NR n48	30	10	DFT-16QAM	M	Inner_1RB_Left	17.45	20.05
NR n48	30	10	DFT-16QAM	M	Inner_1RB_Right	17.57	20.17
NR n48	30	10	DFT-16QAM	M	Outer_Full	17.02	19.62
NR n48	30	10	DFT-64QAM	M	Inner_1RB_Left	16.5	19.1
NR n48	30	10	DFT-64QAM	M	Inner_1RB_Right	16.42	19.02
NR n48	30	10	DFT-64QAM	M	Outer_Full	16.74	19.34
NR n48	30	10	DFT-256QAM	M	Inner_1RB_Left	15.1	17.7
NR n48	30	10	DFT-256QAM	M	Inner_1RB_Right	15.08	17.68
NR n48	30	10	DFT-256QAM	M	Outer_Full	14.8	17.4
NR n48	30	10	DFT-QPSK	H	Inner_1RB_Left	18.15	20.75
NR n48	30	10	DFT-QPSK	H	Inner_1RB_Right	17.95	20.55
NR n48	30	10	DFT-QPSK	H	Outer_Full	17.83	20.43
NR n48	30	10	DFT-16QAM	H	Inner_1RB_Left	17.9	20.5
NR n48	30	10	DFT-16QAM	H	Inner_1RB_Right	17.92	20.52
NR n48	30	10	DFT-16QAM	H	Outer_Full	17.12	19.72
NR n48	30	10	DFT-64QAM	H	Inner_1RB_Left	16.54	19.14
NR n48	30	10	DFT-64QAM	H	Inner_1RB_Right	16.24	18.84
NR n48	30	10	DFT-64QAM	H	Outer_Full	16.68	19.28
NR n48	30	10	DFT-256QAM	H	Inner_1RB_Left	15.02	17.62
NR n48	30	10	DFT-256QAM	H	Inner_1RB_Right	14.94	17.54
NR n48	30	10	DFT-256QAM	H	Outer_Full	14.91	17.51

Note:

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

Band	SCS	Bandwidth	Modulation	Channel	RB Configuration	Conducted Output Power (dBm)	EIRP Power (dBm)
NR n48	30	15	DFT-QPSK	L	Inner_1RB_Left	18.12	20.72
NR n48	30	15	DFT-QPSK	L	Inner_1RB_Right	17.87	20.47
NR n48	30	15	DFT-QPSK	L	Outer_Full	17.9	20.5
NR n48	30	15	DFT-16QAM	L	Inner_1RB_Left	17.57	20.17
NR n48	30	15	DFT-16QAM	L	Inner_1RB_Right	17.7	20.3
NR n48	30	15	DFT-16QAM	L	Outer_Full	17.35	19.95
NR n48	30	15	DFT-64QAM	L	Inner_1RB_Left	16.38	18.98
NR n48	30	15	DFT-64QAM	L	Inner_1RB_Right	16.45	19.05
NR n48	30	15	DFT-64QAM	L	Outer_Full	16.7	19.3
NR n48	30	15	DFT-256QAM	L	Inner_1RB_Left	15.12	17.72
NR n48	30	15	DFT-256QAM	L	Inner_1RB_Right	15.08	17.68
NR n48	30	15	DFT-256QAM	L	Outer_Full	14.89	17.49
NR n48	30	15	DFT-QPSK	M	Inner_1RB_Left	18.09	20.69
NR n48	30	15	DFT-QPSK	M	Inner_1RB_Right	17.87	20.47
NR n48	30	15	DFT-QPSK	M	Outer_Full	17.47	20.07
NR n48	30	15	DFT-16QAM	M	Inner_1RB_Left	17.45	20.05
NR n48	30	15	DFT-16QAM	M	Inner_1RB_Right	17.2	19.8
NR n48	30	15	DFT-16QAM	M	Outer_Full	16.44	19.04
NR n48	30	15	DFT-64QAM	M	Inner_1RB_Left	16.16	18.76
NR n48	30	15	DFT-64QAM	M	Inner_1RB_Right	16.54	19.14
NR n48	30	15	DFT-64QAM	M	Outer_Full	16.64	19.24
NR n48	30	15	DFT-256QAM	M	Inner_1RB_Left	14.97	17.57
NR n48	30	15	DFT-256QAM	M	Inner_1RB_Right	15.09	17.69
NR n48	30	15	DFT-256QAM	M	Outer_Full	14.97	17.57
NR n48	30	15	DFT-QPSK	H	Inner_1RB_Left	18.13	20.73
NR n48	30	15	DFT-QPSK	H	Inner_1RB_Right	18.09	20.69
NR n48	30	15	DFT-QPSK	H	Outer_Full	18.02	20.62
NR n48	30	15	DFT-16QAM	H	Inner_1RB_Left	18.01	20.61
NR n48	30	15	DFT-16QAM	H	Inner_1RB_Right	18	20.6
NR n48	30	15	DFT-16QAM	H	Outer_Full	17.2	19.8
NR n48	30	15	DFT-64QAM	H	Inner_1RB_Left	16.52	19.12
NR n48	30	15	DFT-64QAM	H	Inner_1RB_Right	16.44	19.04
NR n48	30	15	DFT-64QAM	H	Outer_Full	16.62	19.22
NR n48	30	15	DFT-256QAM	H	Inner_1RB_Left	14.83	17.43
NR n48	30	15	DFT-256QAM	H	Inner_1RB_Right	14.8	17.4
NR n48	30	15	DFT-256QAM	H	Outer_Full	14.85	17.45

Note:

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

Band	SCS	Bandwidth	Modulation	Channel	RB Configuration	Conducted Output Power (dBm)	EIRP Power (dBm)
NR n48	30	20	DFT-QPSK	L	Inner_1RB_Left	18.34	20.94
NR n48	30	20	DFT-QPSK	L	Inner_1RB_Right	17.98	20.58
NR n48	30	20	DFT-QPSK	L	Outer_Full	18	20.6
NR n48	30	20	DFT-16QAM	L	Inner_1RB_Left	17.96	20.56
NR n48	30	20	DFT-16QAM	L	Inner_1RB_Right	18.11	20.71
NR n48	30	20	DFT-16QAM	L	Outer_Full	17.12	19.72
NR n48	30	20	DFT-64QAM	L	Inner_1RB_Left	16.25	18.85
NR n48	30	20	DFT-64QAM	L	Inner_1RB_Right	16.23	18.83
NR n48	30	20	DFT-64QAM	L	Outer_Full	16.58	19.18
NR n48	30	20	DFT-256QAM	L	Inner_1RB_Left	14.88	17.48
NR n48	30	20	DFT-256QAM	L	Inner_1RB_Right	15.05	17.65
NR n48	30	20	DFT-256QAM	L	Outer_Full	14.75	17.35
NR n48	30	20	DFT-QPSK	M	Inner_1RB_Left	17.94	20.54
NR n48	30	20	DFT-QPSK	M	Inner_1RB_Right	18.21	20.81
NR n48	30	20	DFT-QPSK	M	Outer_Full	17.84	20.44
NR n48	30	20	DFT-16QAM	M	Inner_1RB_Left	18.02	20.62
NR n48	30	20	DFT-16QAM	M	Inner_1RB_Right	17.83	20.43
NR n48	30	20	DFT-16QAM	M	Outer_Full	17.19	19.79
NR n48	30	20	DFT-64QAM	M	Inner_1RB_Left	16.36	18.96
NR n48	30	20	DFT-64QAM	M	Inner_1RB_Right	16.26	18.86
NR n48	30	20	DFT-64QAM	M	Outer_Full	16.56	19.16
NR n48	30	20	DFT-256QAM	M	Inner_1RB_Left	14.94	17.54
NR n48	30	20	DFT-256QAM	M	Inner_1RB_Right	14.74	17.34
NR n48	30	20	DFT-256QAM	M	Outer_Full	14.84	17.44
NR n48	30	20	DFT-QPSK	H	Inner_1RB_Left	17.96	20.56
NR n48	30	20	DFT-QPSK	H	Inner_1RB_Right	17.9	20.5
NR n48	30	20	DFT-QPSK	H	Outer_Full	18.02	20.62
NR n48	30	20	DFT-16QAM	H	Inner_1RB_Left	16.66	19.26
NR n48	30	20	DFT-16QAM	H	Inner_1RB_Right	16.82	19.42
NR n48	30	20	DFT-16QAM	H	Outer_Full	16.66	19.26
NR n48	30	20	DFT-64QAM	H	Inner_1RB_Left	16.3	18.9
NR n48	30	20	DFT-64QAM	H	Inner_1RB_Right	15.99	18.59
NR n48	30	20	DFT-64QAM	H	Outer_Full	16.26	18.86
NR n48	30	20	DFT-256QAM	H	Inner_1RB_Left	14.47	17.07
NR n48	30	20	DFT-256QAM	H	Inner_1RB_Right	14.72	17.32
NR n48	30	20	DFT-256QAM	H	Outer_Full	14.9	17.5

Note:

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

Band	SCS	Bandwidth	Modulation	Channel	RB Configuration	Conducted Output Power (dBm)	EIRP Power (dBm)
NR n48	30	40	DFT-QPSK	L	Inner_1RB_Left	18.29	20.89
NR n48	30	40	DFT-QPSK	L	Inner_1RB_Right	18.09	20.69
NR n48	30	40	DFT-QPSK	L	Outer_Full	17.86	20.46
NR n48	30	40	DFT-16QAM	L	Inner_1RB_Left	16.97	19.57
NR n48	30	40	DFT-16QAM	L	Inner_1RB_Right	16.85	19.45
NR n48	30	40	DFT-16QAM	L	Outer_Full	16.7	19.3
NR n48	30	40	DFT-64QAM	L	Inner_1RB_Left	15.76	18.36
NR n48	30	40	DFT-64QAM	L	Inner_1RB_Right	16.03	18.63
NR n48	30	40	DFT-64QAM	L	Outer_Full	15.88	18.48
NR n48	30	40	DFT-256QAM	L	Inner_1RB_Left	14.84	17.44
NR n48	30	40	DFT-256QAM	L	Inner_1RB_Right	14.4	17
NR n48	30	40	DFT-256QAM	L	Outer_Full	14.66	17.26
NR n48	30	40	DFT-QPSK	M	Inner_1RB_Left	18.1	20.7
NR n48	30	40	DFT-QPSK	M	Inner_1RB_Right	17.91	20.51
NR n48	30	40	DFT-QPSK	M	Outer_Full	17.36	19.96
NR n48	30	40	DFT-16QAM	M	Inner_1RB_Left	17.34	19.94
NR n48	30	40	DFT-16QAM	M	Inner_1RB_Right	17.22	19.82
NR n48	30	40	DFT-16QAM	M	Outer_Full	16.42	19.02
NR n48	30	40	DFT-64QAM	M	Inner_1RB_Left	16.26	18.86
NR n48	30	40	DFT-64QAM	M	Inner_1RB_Right	16.51	19.11
NR n48	30	40	DFT-64QAM	M	Outer_Full	16.02	18.62
NR n48	30	40	DFT-256QAM	M	Inner_1RB_Left	14.85	17.45
NR n48	30	40	DFT-256QAM	M	Inner_1RB_Right	15.01	17.61
NR n48	30	40	DFT-256QAM	M	Outer_Full	14.84	17.44
NR n48	30	40	DFT-QPSK	H	Inner_1RB_Left	18.2	20.8
NR n48	30	40	DFT-QPSK	H	Inner_1RB_Right	18.2	20.8
NR n48	30	40	DFT-QPSK	H	Outer_Full	17.92	20.52
NR n48	30	40	DFT-16QAM	H	Inner_1RB_Left	18.22	20.82
NR n48	30	40	DFT-16QAM	H	Inner_1RB_Right	18.06	20.66
NR n48	30	40	DFT-16QAM	H	Outer_Full	17.24	19.84
NR n48	30	40	DFT-64QAM	H	Inner_1RB_Left	16.51	19.11
NR n48	30	40	DFT-64QAM	H	Inner_1RB_Right	16.19	18.79
NR n48	30	40	DFT-64QAM	H	Outer_Full	16.68	19.28
NR n48	30	40	DFT-256QAM	H	Inner_1RB_Left	14.85	17.45
NR n48	30	40	DFT-256QAM	H	Inner_1RB_Right	14.78	17.38
NR n48	30	40	DFT-256QAM	H	Outer_Full	14.66	17.26

Note:

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

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Band	SCS	Bandwidth	Modulation	Channel	RB Config	Conducted Output Power (dBm)		Total Power (dBm)	EIRP Power (dBm)
						Ant1	Ant2		
NR n48	30	10	CP-QPSK	L	Inner_1RB_Left	14.33	14.33	17.34	19.94
NR n48	30	10	CP-QPSK	L	Inner_1RB_Right	14.41	14.05	17.24	19.84
NR n48	30	10	CP-QPSK	L	Outer_Full	13.02	13.35	16.20	18.80
NR n48	30	10	CP-16QAM	L	Inner_1RB_Left	14.05	14.36	17.22	19.82
NR n48	30	10	CP-16QAM	L	Inner_1RB_Right	13.91	13.93	16.93	19.53
NR n48	30	10	CP-16QAM	L	Outer_Full	12.95	13.22	16.10	18.70
NR n48	30	10	CP-64QAM	L	Inner_1RB_Left	12.74	12.78	15.77	18.37
NR n48	30	10	CP-64QAM	L	Inner_1RB_Right	12.74	12.98	15.87	18.47
NR n48	30	10	CP-64QAM	L	Outer_Full	12.51	12.85	15.69	18.29
NR n48	30	10	CP-256QAM	L	Inner_1RB_Left	9.58	9.7	12.65	15.25
NR n48	30	10	CP-256QAM	L	Inner_1RB_Right	9.56	9.73	12.66	15.26
NR n48	30	10	CP-256QAM	L	Outer_Full	9.59	9.82	12.72	15.32
NR n48	30	10	CP-QPSK	M	Inner_1RB_Left	14.11	14.24	17.19	19.79
NR n48	30	10	CP-QPSK	M	Inner_1RB_Right	14.13	14.37	17.26	19.86
NR n48	30	10	CP-QPSK	M	Outer_Full	13.07	13.31	16.20	18.80
NR n48	30	10	CP-16QAM	M	Inner_1RB_Left	14.05	14.26	17.17	19.77
NR n48	30	10	CP-16QAM	M	Inner_1RB_Right	13.93	14	16.98	19.58
NR n48	30	10	CP-16QAM	M	Outer_Full	13.18	13.27	16.24	18.84
NR n48	30	10	CP-64QAM	M	Inner_1RB_Left	12.58	12.67	15.64	18.24
NR n48	30	10	CP-64QAM	M	Inner_1RB_Right	12.7	12.6	15.66	18.26
NR n48	30	10	CP-64QAM	M	Outer_Full	12.65	12.61	15.64	18.24
NR n48	30	10	CP-256QAM	M	Inner_1RB_Left	9.86	9.95	12.92	15.52
NR n48	30	10	CP-256QAM	M	Inner_1RB_Right	9.79	9.72	12.77	15.37
NR n48	30	10	CP-256QAM	M	Outer_Full	9.63	9.8	12.73	15.33
NR n48	30	10	CP-QPSK	H	Inner_1RB_Left	14.34	14.28	17.32	19.92
NR n48	30	10	CP-QPSK	H	Inner_1RB_Right	14.35	14.07	17.22	19.82
NR n48	30	10	CP-QPSK	H	Outer_Full	13	13.06	16.04	18.64
NR n48	30	10	CP-16QAM	H	Inner_1RB_Left	14.06	14.12	17.10	19.70
NR n48	30	10	CP-16QAM	H	Inner_1RB_Right	13.92	14.04	16.99	19.59
NR n48	30	10	CP-16QAM	H	Outer_Full	13.05	13.22	16.15	18.75
NR n48	30	10	CP-64QAM	H	Inner_1RB_Left	12.9	12.6	15.76	18.36
NR n48	30	10	CP-64QAM	H	Inner_1RB_Right	12.91	12.7	15.82	18.42
NR n48	30	10	CP-64QAM	H	Outer_Full	12.58	12.6	15.60	18.20
NR n48	30	10	CP-256QAM	H	Inner_1RB_Left	9.61	9.74	12.69	15.29
NR n48	30	10	CP-256QAM	H	Inner_1RB_Right	9.45	9.55	12.51	15.11
NR n48	30	10	CP-256QAM	H	Outer_Full	9.65	9.54	12.61	15.21

Note:

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

Band	SCS	Bandwidth	Modulation	Channel	RB Config	Conducted Output Power (dBm)		Total Power (dBm)	EIRP Power (dBm)
						Ant1	Ant2		
NR n48	30	15	CP-QPSK	L	Inner_1RB_Left	14.37	14.39	17.39	19.99
NR n48	30	15	CP-QPSK	L	Inner_1RB_Right	14.02	14.2	17.12	19.72
NR n48	30	15	CP-QPSK	L	Outer_Full	13.22	13.19	16.22	18.82
NR n48	30	15	CP-16QAM	L	Inner_1RB_Left	14.07	14.11	17.10	19.70
NR n48	30	15	CP-16QAM	L	Inner_1RB_Right	14.11	13.95	17.04	19.64
NR n48	30	15	CP-16QAM	L	Outer_Full	12.94	12.98	15.97	18.57
NR n48	30	15	CP-64QAM	L	Inner_1RB_Left	12.66	12.53	15.61	18.21
NR n48	30	15	CP-64QAM	L	Inner_1RB_Right	12.7	12.61	15.67	18.27
NR n48	30	15	CP-64QAM	L	Outer_Full	12.54	12.53	15.55	18.15
NR n48	30	15	CP-256QAM	L	Inner_1RB_Left	9.7	9.74	12.73	15.33
NR n48	30	15	CP-256QAM	L	Inner_1RB_Right	9.61	9.71	12.67	15.27
NR n48	30	15	CP-256QAM	L	Outer_Full	9.61	9.76	12.70	15.30
NR n48	30	15	CP-QPSK	M	Inner_1RB_Left	14.16	14.29	17.24	19.84
NR n48	30	15	CP-QPSK	M	Inner_1RB_Right	14.31	14.1	17.22	19.82
NR n48	30	15	CP-QPSK	M	Outer_Full	12.99	13.3	16.16	18.76
NR n48	30	15	CP-16QAM	M	Inner_1RB_Left	13.97	14.36	17.18	19.78
NR n48	30	15	CP-16QAM	M	Inner_1RB_Right	14.21	14.06	17.15	19.75
NR n48	30	15	CP-16QAM	M	Outer_Full	12.91	13.21	16.07	18.67
NR n48	30	15	CP-64QAM	M	Inner_1RB_Left	12.67	12.75	15.72	18.32
NR n48	30	15	CP-64QAM	M	Inner_1RB_Right	12.83	12.75	15.80	18.40
NR n48	30	15	CP-64QAM	M	Outer_Full	12.56	12.7	15.64	18.24
NR n48	30	15	CP-256QAM	M	Inner_1RB_Left	9.9	9.84	12.88	15.48
NR n48	30	15	CP-256QAM	M	Inner_1RB_Right	9.71	9.66	12.70	15.30
NR n48	30	15	CP-256QAM	M	Outer_Full	9.66	9.65	12.67	15.27
NR n48	30	15	CP-QPSK	H	Inner_1RB_Left	14.08	14.1	17.10	19.70
NR n48	30	15	CP-QPSK	H	Inner_1RB_Right	14.39	14.1	17.26	19.86
NR n48	30	15	CP-QPSK	H	Outer_Full	13.03	13.29	16.17	18.77
NR n48	30	15	CP-16QAM	H	Inner_1RB_Left	14.03	14.17	17.11	19.71
NR n48	30	15	CP-16QAM	H	Inner_1RB_Right	13.98	14.28	17.14	19.74
NR n48	30	15	CP-16QAM	H	Outer_Full	13.31	13.03	16.18	18.78
NR n48	30	15	CP-64QAM	H	Inner_1RB_Left	12.62	12.66	15.65	18.25
NR n48	30	15	CP-64QAM	H	Inner_1RB_Right	12.78	12.81	15.81	18.41
NR n48	30	15	CP-64QAM	H	Outer_Full	12.63	12.59	15.62	18.22
NR n48	30	15	CP-256QAM	H	Inner_1RB_Left	9.49	9.62	12.57	15.17
NR n48	30	15	CP-256QAM	H	Inner_1RB_Right	9.57	9.6	12.60	15.20
NR n48	30	15	CP-256QAM	H	Outer_Full	9.57	9.76	12.68	15.28

Note:

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

Band	SCS	Bandwidth	Modulation	Channel	RB Config	Conducted Output Power (dBm)		Total Power (dBm)	EIRP Power (dBm)
						Ant1	Ant2		
NR n48	30	20	CP-QPSK	L	Inner_1RB_Left	14.1	14.14	17.13	19.73
NR n48	30	20	CP-QPSK	L	Inner_1RB_Right	14.23	14.16	17.21	19.81
NR n48	30	20	CP-QPSK	L	Outer_Full	13.22	13.34	16.29	18.89
NR n48	30	20	CP-16QAM	L	Inner_1RB_Left	14.33	14.17	17.26	19.86
NR n48	30	20	CP-16QAM	L	Inner_1RB_Right	14.16	14.08	17.13	19.73
NR n48	30	20	CP-16QAM	L	Outer_Full	13.11	13.1	16.12	18.72
NR n48	30	20	CP-64QAM	L	Inner_1RB_Left	12.57	12.62	15.61	18.21
NR n48	30	20	CP-64QAM	L	Inner_1RB_Right	12.55	12.84	15.71	18.31
NR n48	30	20	CP-64QAM	L	Outer_Full	12.55	12.48	15.53	18.13
NR n48	30	20	CP-256QAM	L	Inner_1RB_Left	9.84	9.75	12.81	15.41
NR n48	30	20	CP-256QAM	L	Inner_1RB_Right	9.75	9.95	12.86	15.46
NR n48	30	20	CP-256QAM	L	Outer_Full	9.57	9.67	12.63	15.23
NR n48	30	20	CP-QPSK	M	Inner_1RB_Left	14.28	14.23	17.27	19.87
NR n48	30	20	CP-QPSK	M	Inner_1RB_Right	14.03	14.26	17.16	19.76
NR n48	30	20	CP-QPSK	M	Outer_Full	13.17	13.26	16.23	18.83
NR n48	30	20	CP-16QAM	M	Inner_1RB_Left	13.99	14.15	17.08	19.68
NR n48	30	20	CP-16QAM	M	Inner_1RB_Right	14.23	14.03	17.14	19.74
NR n48	30	20	CP-16QAM	M	Outer_Full	12.98	13.09	16.05	18.65
NR n48	30	20	CP-64QAM	M	Inner_1RB_Left	12.85	12.71	15.79	18.39
NR n48	30	20	CP-64QAM	M	Inner_1RB_Right	12.58	12.74	15.67	18.27
NR n48	30	20	CP-64QAM	M	Outer_Full	12.75	12.72	15.75	18.35
NR n48	30	20	CP-256QAM	M	Inner_1RB_Left	9.92	9.98	12.96	15.56
NR n48	30	20	CP-256QAM	M	Inner_1RB_Right	9.6	9.71	12.67	15.27
NR n48	30	20	CP-256QAM	M	Outer_Full	9.66	9.8	12.74	15.34
NR n48	30	20	CP-QPSK	H	Inner_1RB_Left	14.24	14.27	17.27	19.87
NR n48	30	20	CP-QPSK	H	Inner_1RB_Right	14.17	14.39	17.29	19.89
NR n48	30	20	CP-QPSK	H	Outer_Full	13.03	13.19	16.12	18.72
NR n48	30	20	CP-16QAM	H	Inner_1RB_Left	14.12	14.08	17.11	19.71
NR n48	30	20	CP-16QAM	H	Inner_1RB_Right	14.14	14.07	17.12	19.72
NR n48	30	20	CP-16QAM	H	Outer_Full	13.18	12.99	16.10	18.70
NR n48	30	20	CP-64QAM	H	Inner_1RB_Left	12.58	12.78	15.69	18.29
NR n48	30	20	CP-64QAM	H	Inner_1RB_Right	12.84	12.72	15.79	18.39
NR n48	30	20	CP-64QAM	H	Outer_Full	12.53	12.62	15.59	18.19
NR n48	30	20	CP-256QAM	H	Inner_1RB_Left	9.64	9.76	12.71	15.31
NR n48	30	20	CP-256QAM	H	Inner_1RB_Right	9.6	9.67	12.65	15.25
NR n48	30	20	CP-256QAM	H	Outer_Full	9.63	9.67	12.66	15.26

Note:

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

Band	SCS	Bandwidth	Modulation	Channel	RB Config	Conducted Output Power (dBm)		Total Power (dBm)	EIRP Power (dBm)
						Ant1	Ant2		
NR n48	30	40	CP-QPSK	L	Inner_1RB_Left	14.35	14.38	17.38	19.98
NR n48	30	40	CP-QPSK	L	Inner_1RB_Right	14.31	14.4	17.37	19.97
NR n48	30	40	CP-QPSK	L	Outer_Full	13.09	13.09	16.10	18.70
NR n48	30	40	CP-16QAM	L	Inner_1RB_Left	13.3	13.35	16.34	18.94
NR n48	30	40	CP-16QAM	L	Inner_1RB_Right	12.6	13.28	15.96	18.56
NR n48	30	40	CP-16QAM	L	Outer_Full	13.3	12.91	16.12	18.72
NR n48	30	40	CP-64QAM	L	Inner_1RB_Left	12.88	12.62	15.76	18.36
NR n48	30	40	CP-64QAM	L	Inner_1RB_Right	12.67	12.72	15.71	18.31
NR n48	30	40	CP-64QAM	L	Outer_Full	12.49	12.63	15.57	18.17
NR n48	30	40	CP-256QAM	L	Inner_1RB_Left	9.62	9.9	12.77	15.37
NR n48	30	40	CP-256QAM	L	Inner_1RB_Right	9.64	9.7	12.68	15.28
NR n48	30	40	CP-256QAM	L	Outer_Full	9.75	9.74	12.76	15.36
NR n48	30	40	CP-QPSK	M	Inner_1RB_Left	14.42	14.06	17.25	19.85
NR n48	30	40	CP-QPSK	M	Inner_1RB_Right	14.06	14.16	17.12	19.72
NR n48	30	40	CP-QPSK	M	Outer_Full	13.12	13.1	16.12	18.72
NR n48	30	40	CP-16QAM	M	Inner_1RB_Left	14.21	14.21	17.22	19.82
NR n48	30	40	CP-16QAM	M	Inner_1RB_Right	14.04	13.94	17.00	19.60
NR n48	30	40	CP-16QAM	M	Outer_Full	13.16	13.14	16.16	18.76
NR n48	30	40	CP-64QAM	M	Inner_1RB_Left	12.81	12.75	15.79	18.39
NR n48	30	40	CP-64QAM	M	Inner_1RB_Right	12.95	12.77	15.87	18.47
NR n48	30	40	CP-64QAM	M	Outer_Full	12.74	12.72	15.74	18.34
NR n48	30	40	CP-256QAM	M	Inner_1RB_Left	9.79	9.96	12.89	15.49
NR n48	30	40	CP-256QAM	M	Inner_1RB_Right	9.68	9.58	12.64	15.24
NR n48	30	40	CP-256QAM	M	Outer_Full	9.83	9.47	12.66	15.26
NR n48	30	40	CP-QPSK	H	Inner_1RB_Left	14.22	14.19	17.22	19.82
NR n48	30	40	CP-QPSK	H	Inner_1RB_Right	14.37	14.21	17.30	19.90
NR n48	30	40	CP-QPSK	H	Outer_Full	13.24	13.12	16.19	18.79
NR n48	30	40	CP-16QAM	H	Inner_1RB_Left	14.3	14.14	17.23	19.83
NR n48	30	40	CP-16QAM	H	Inner_1RB_Right	13.97	13.95	16.97	19.57
NR n48	30	40	CP-16QAM	H	Outer_Full	13.19	13.08	16.15	18.75
NR n48	30	40	CP-64QAM	H	Inner_1RB_Left	12.8	12.82	15.82	18.42
NR n48	30	40	CP-64QAM	H	Inner_1RB_Right	12.62	12.72	15.68	18.28
NR n48	30	40	CP-64QAM	H	Outer_Full	12.48	12.65	15.58	18.18
NR n48	30	40	CP-256QAM	H	Inner_1RB_Left	9.78	9.82	12.81	15.41
NR n48	30	40	CP-256QAM	H	Inner_1RB_Right	9.78	9.83	12.82	15.42
NR n48	30	40	CP-256QAM	H	Outer_Full	9.66	9.9	12.79	15.39

Note:

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

7.2 Radiated Spurious Emissions below 1GHz

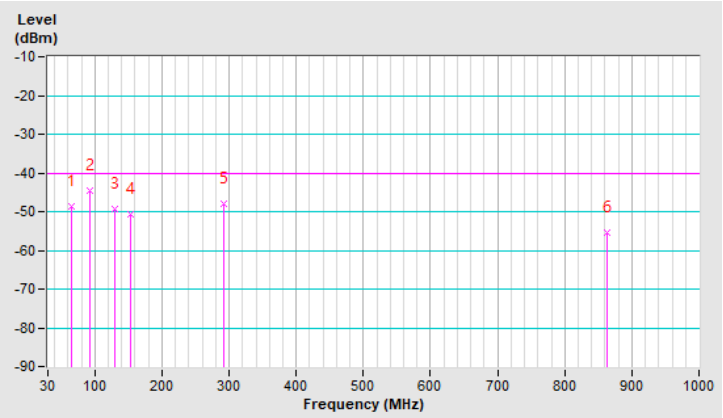
7.2.1 NR n48 SCS 30 kHz (SISO)

RF Mode	NR n48 Channel Bandwidth: 20MHz	Channel	CH 646000：3690.00 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°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	64.92	-48.78	-40.00	-8.78	2.00 H	240	60.22	-109.00
2	92.08	-44.58	-40.00	-4.58	1.50 H	92	68.46	-113.04
3	128.94	-49.23	-40.00	-9.23	1.00 H	112	59.59	-108.82
4	153.19	-50.60	-40.00	-10.60	2.00 H	81	57.13	-107.73
5	291.90	-47.98	-40.00	-7.98	1.50 H	14	59.23	-107.21
6	863.23	-55.50	-40.00	-15.50	1.00 H	347	41.29	-96.79

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 EIRP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

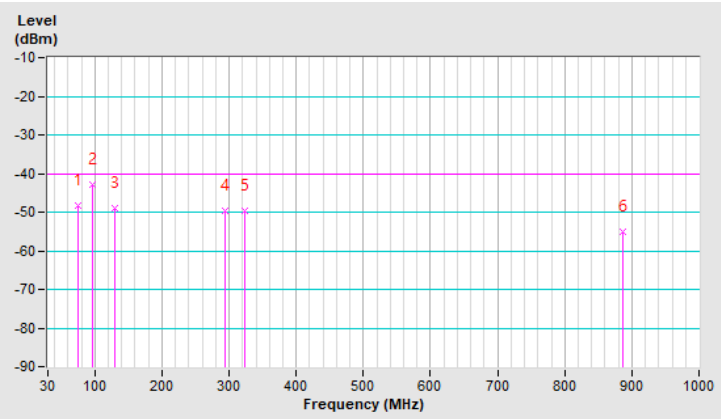


RF Mode	NR n48 Channel Bandwidth: 20MHz	Channel	CH 646000：3690.00 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70% RH
Tested By	Thomas Cheng		

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	74.62	-48.33	-40.00	-8.33	1.00 V	150	62.24	-110.57
2	**95.96**	**-42.98**	**-40.00**	**-2.98**	**1.00 V**	**176**	**69.71**	**-112.69**
3	129.91	-48.87	-40.00	-8.87	2.00 V	189	59.80	-108.67
4	293.84	-49.78	-40.00	-9.78	1.50 V	26	57.39	-107.17
5	323.91	-49.57	-40.00	-9.57	2.00 V	48	56.83	-106.40
6	887.48	-55.15	-40.00	-15.15	2.00 V	2	41.27	-96.42

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 EIRP levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



7.3 Radiated Spurious Emissions above 1GHz

7.3.1 NR n48 SCS 30 kHz (SISO)

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)
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70.3% 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	7110.00	-43.84	-40.00	-3.84	1.23 H	267	54.41	-98.25
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	-45.02	-40.00	-5.02	2.54 V	116	53.23	-98.25

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 n48 Channel Bandwidth: 10MHz	Channel	CH 641666：3624.99 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70.3% 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	7249.98	-43.37	-40.00	-3.37	2.52 H	163	54.69	-98.06
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	-44.60	-40.00	-4.60	3.24 V	178	53.46	-98.06

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 n48 Channel Bandwidth: 10MHz	Channel	CH 646332：3694.98 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70.3% 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	7389.96	-43.48	-40.00	-3.48	3.41 H	116	54.28	-97.76
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	-44.35	-40.00	-4.35	1.62 V	208	53.41	-97.76

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 n48 Channel Bandwidth: 20MHz	Channel	CH 637334：3560.01 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70.3% 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	7120.02	-43.68	-40.00	-3.68	3.49 H	302	54.56	-98.24
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	-44.53	-40.00	-4.53	1.81 V	210	53.71	-98.24

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 n48 Channel Bandwidth: 20MHz	Channel	CH 641666：3624.99 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70.3% 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	7249.98	-43.57	-40.00	-3.57	2.90 H	117	54.49	-98.06
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	-44.44	-40.00	-4.44	1.12 V	279	53.62	-98.06

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 n48 Channel Bandwidth: 20MHz	Channel	CH 646000：3690.00 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70.3% 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	7380.00	-42.97	-40.00	-2.97	2.50 H	38	54.79	-97.76
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	-43.95	-40.00	-3.95	2.44 V	156	53.81	-97.76

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 n48 Channel Bandwidth: 40MHz	Channel	CH 638000：3570.00 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70.3% 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	7140.00	-41.82	-40.00	-1.82	2.03 H	154	56.43	-98.25
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	-43.84	-40.00	-3.84	1.25 V	263	54.41	-98.25

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 n48 Channel Bandwidth: 40MHz	Channel	CH 641666：3624.99 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70.3% 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	7249.98	-41.85	-40.00	-1.85	1.85 H	252	56.21	-98.06
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	-43.64	-40.00	-3.64	1.52 V	155	54.42	-98.06

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 n48 Channel Bandwidth: 40MHz	Channel	CH 645332：3679.98 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 70.3% 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	**7359.96**	**-41.64**	**-40.00**	**-1.64**	**1.23 H**	**157**	**56.13**	**-97.77**
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	-43.45	-40.00	-3.45	2.46 V	35	54.32	-97.77

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.

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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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