

Report No.: FYCR220400011404

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### RF Exposure Evaluation Report

**Application No.:** FYCR2204000114AT **Applicant:** Mavenir Systems, Inc.

Address of Applicant: 1700 International Parkway, Suite 200, Richardson, TX 75081 USA

Manufacturer: Mavenir Systems, Inc.

Address of Manufacturer: 1700 International Parkway, Suite 200, Richardson, TX 75081 USA

Factory: Kunshan luxshare RF Techonology Co., Ltd.

Address of Factory: No.99 Xubang Road, Wuzhong District, Suzhou City 215324 Jiangsu P.R.

China

**Equipment Under Test (EUT):** 

**EUT Name:** Remote Radio Unit

Model No.: MU44UA

FCC ID: 2AWAS-MU44UA

Standard(s): 47 CFR Part 1.1307

47 CFR Part 1.1310 47 CFR Part 2.1091

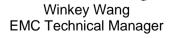
**Date of Receipt:** 2022-04-27

**Date of Test:** 2022-09-05 to 2022-09-14

**Date of Issue:** 2022-09-15

Test Result: Pass\*

\* In the configuration tested, the EUT complied with the standards specified above.



WinkeyWang



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#### 2 Version

Revision Record						
Version	Chapter	Date	Modifier	Remark		
01		2020-09-15		Original		

Authorized for issue by:		
	Tree 2han	
	Tree Zhan/Project Engineer	
	WinkeyWarg	
	Winkey Wang/Reviewer	



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#### 4 General Information

#### 4.1 General Description of EUT

Power supply:	Rated Input Voltage of -48V DC, Power Consumption<=140W
Test voltage:	DC -48V
Sample Type:	Remote Radio Unit
5G NR Operation Frequency Band:	N48
Frequency range:	3550-3700 MHz
NR Modulation Type:	QPSK/16QAM/64QAM/256QAM
NR Max Radiated Power:	37dBm/MHz
NR Radio Output Power:	Maximum 37dBm (5W) per port
CA Capability MIMO:	DL 6CC 4X4 MIMO DL 5CC 4X4 MIMO DL 4CC 4X4 MIMO DL 3CC 4X4 MIMO
	DL 2CC 4X4 MIMO DL 1CC 4X4 MIMO UL 2CC 4X4 MIMO UL 1CC 4X4 MIMO Support Intra-band contiguous/non-contiguous CA and support UL MIMO
Antenna Type:	Sector Antenna Ant 4: TX & RX Ant 3: TX & RX Ant 2: TX & RX Ant 1: TX & RX
Antenna Gain:	Range 4dBi ~ 18dBi



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#### 4.2 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc. Shenzhen branch.

Fuyong lab. Xinlong TechnoPark, Fengtang Road, Fuyong Subdistrict, Bao' an, Shenzhen, China

Tel: +86 755 8866 3988 Fax: +86 755 2671 0594

No tests were sub-contracted.

#### 4.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

A2LA (Certificate No. 6606.01)

Compliance Certification Services (Kunshan) Inc. Shenzhen branch is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6606.01.

FCC –Designation Number: CN1322

Compliance Certification Services (Kunshan) Inc. Shenzhen branch has been recognized as an accredited testing laboratory.

Designation Number: CN1322. Test Firm Registration Number: 718073

• Innovation, Science and Economic Development Canada

Compliance Certification Services (Kunshan) Inc. Shenzhen branch has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0129.

IC#: 28189.

#### 4.4 Deviation from Standards

None.

#### 4.5 Abnormalities from Standard Conditions

None

#### 4.6 Other Information Requested by the Customer

None.



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#### 5 RF Exposure Evaluation

#### 5.1 RF Exposure Compliance Requirement

#### **5.1.1 Limits**

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

Table 1—Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm²)	Averaging time (minutes)				
(A) Limits for Occupational/Controlled Exposures								
0.3–3.0 3.0–30 30–300 300–1500 1500–100,000	614 1842/f 61.4	1.63 4.89/f 0.163	*(100) *(900/f²) 1.0 f/300 5	6 6 6 6				
(B) Limits	for General Populati	on/Uncontrolled Exp	oosure					
0.3–1.34	614	1.63	*(100)	30				
1.34–30	824/f	2.19/f	*(180/f <sup>2</sup> )	30				
30–300	27.5	0.073	0.2	30				
300-1500			f/1500	30				
1500-100,000			1.0	30				

F= Frequency in MHz

Friis Formula

Friis transmission formula: Pd = (Pout\*G)/(4\* Pi \* R2)

Where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

For Uncontrolled Environment, the MPE limit of 1500MHz to 100000MHz is 1.0 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

#### 5.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.



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#### 5.1.3 EUT RF Exposure Evaluation

#### 1) Test Results

For NR Band 48:

The max tune-up tolerance power Into Antenna & RF Exposure Evaluation Distance:

For NR:

Antenna	EIRP	EIRP	MPE	Distance(cm)	Limit	Result
	(dBm)	(mW)	(mW/cm <sup>2</sup> )	Distance(citi)	(mW/cm <sup>2</sup> )	Nesuit
Ant1+2+3+4	57.42	552077.44	0.996	210	1.0	PASS

Note: Refer to report No. FYCR2204000114AT or EUT test Max Conducted Output Power value. To comply with FCC RF exposure requirement the minimum distance should be 210cm from user.

Since the SAR Exclusion Threshold Level is well below the SAR low threshold level, so the EUT is considered to comply with SAR requirement without testing.

- End of the Report -



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