



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

Winkey Wang
EMC Technical Manager



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Compliance Certification Services (Kunshan) Inc.
Shenzhen Branch

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Compliance Certification Services (Kunshan) Inc. Shenzhen Branch

Report No.: FYCR220400011404

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2 Version

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

Authorized for issue by:				
				
		Tree Zhan/Project Engineer		
				
		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
LTE Operation Frequency Band:	B48
Frequency range:	3550-3700 MHz
LTE Modulation Type:	QPSK/16QAM/64QAM/256QAM/1024QAM
LTE Max Radiated Power:	37dBm/MHz
LTE 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/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f ²)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	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: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

For Uncontrolled Environment, the MPE limit of 1500MHz to 100000MHz is 1.0 mW/cm². 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 LTE Band 48:

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

For LTE:

Antenna	EIRP (dBm)	EIRP (mW)	MPE (mW/cm ²)	Distance(cm)	Limit (mW/cm ²)	Result
Ant1+2+3+4	57.72	591561.63	0.973	220	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 220cm 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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