RF Exposure Evaluation Declaration

FCC ID: 2AWAS-910-00085

APPLICANT: Mavenir Systems, Inc.

Application Type: Certification

Product: B12 4T4R 160W Radio Unit

Model No.: MR44EA

Trademark: MAVENIR

Test Procedure(s): KDB 447498 D01v06

Reviewed By: Jame Yuan

Approved By: Robin Wu

Revision History

Report No.	Version	Description	Issue Date	Note
2108RSU044-U2	Rev. 01	Initial Report	09-10-2021	Invalid
2108RSU044-U2	Rev. 02	Update some information	09-17-2021	Valid

1. Product Information

Product Name	B12 4T4R 160W Radio Unit
Model No.	MR44EA
Test Device Serial No.	JW2126CTN-AA005
Hardware Version	2.2
Software Version	MD4.5
Voltage Range	-48 VDC
LTE Operating Band (s)	FDD Band 12
Modulation Type	QPSK, 16QAM, 64QAM, 256QAM
T_X Frequency Range	Band 12: 729 ~ 745 MHz
R_X Frequency Range	Band 12: 699 ~ 715 MHz
Max Antenna Gain	15dBi

Note: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.

2. RF Exposure Evaluation

2.1. Test Limit

According to FCC 1.1310: 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 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f= Frequency in MHz

Calculation Formula: $Pd = (Pout*G)/(4*pi*r^2)$

Where
Pd = power density in mW/cm^2
Pout = output power to antenna in mW
G = gain of antenna in linear scale
Pi = 3.1416
r = distance between observation point and center of the radiator in cm

Pd is the limit of MPE, $1mW/cm^2$. 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.

2.2. Test Result

Product	B12 4T4R 160W Radio Unit
Test Item	RF Exposure Evaluation

Test Mode	Frequency Band (MHz)	Maximum Radiated Power (dBm)	Compliance Distance (cm)	Power Density (mW/cm^2)	Limit of Power Density (mW/cm^2)
LTE Band 12	729 ~ 745	67.54	1213	0.4854	0.486

Note 1: Maximum turn-up output power is 46.52 dBm per each port declared by the manufacturer.

Maximum Radiated Power = 46.52 + 10*log(4) + 15.0 = 67.54 dBm.

Note 2: The max Power Density at R (1213 cm) = 0.4854 mW/cm^2 < 0.486 mW/cm^2.

Therefore, the Min Compliance Distance is 1213 cm.

The End

Appendix - EUT Photograph

Refer to “2108RSU044-UE” file.