



RF Exposure Evaluation Declaration

FCC ID: 2AWAS-910-00085

APPLICANT: Mavenir Systems, Inc.

Application Type: Certification

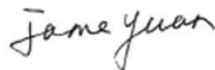
Product: B12 4T4R 160W Radio Unit

Model No.: MR44EA

Trademark: 

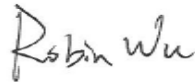
Test Procedure(s): KDB 447498 D01v06

Reviewed By:



Jame Yuan

Approved By:



Robin Wu



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

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 | Invalid |
| 2108RSU044-U2 | Rev. 03 | Update some information | 10-12-2021 | 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: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

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

r = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1mW/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.

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 | 1000 | 0.452 | 0.486 |

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

Maximum Radiated Power = $46.52 + 10 \cdot \log(4) + 15.0 = 67.54$ dBm.

Note 2: The Min Compliance Distance is 1000 cm declared by the manufacturer.

Therefore, the Power Density at R (1000 cm) = $0.452 \text{ mW/cm}^2 < 0.486 \text{ mW/cm}^2$.

_____ The End _____

Appendix - EUT Photograph

Refer to "2108RSU044-UE" file.