

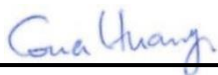
# RF EXPOSURE EVALUATION REPORT

FCC ID : 2ARF9CSM64  
Equipment : Cloud Services Modem  
Brand Name : Versa Networks   
Model Name : CSM64  
Marketing Name : Cloud Services Modem  
Applicant : Versa Networks  
2550 GREAT AMERICA WAY SUITE 350 SANTA CLARA, CA  
95054  
Manufacturer : Versa Networks  
2550 GREAT AMERICA WAY SUITE 350 SANTA CLARA, CA  
95054  
Standard : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part2.1091 and it complies with applicable limit.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 3786) and the FCC designation No. TW3786 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Laboratory, the test report shall not be reproduced except in full.



Approved by: Cona Huang / Deputy Manager



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## History of this test report

| Report No.  | Version | Description             | Issued Date  |
|-------------|---------|-------------------------|--------------|
| FA461443-01 | Rev. 01 | Initial issue of report | May 14, 2025 |
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## 1. Description of Equipment Under Test (EUT)

| Product Feature & Specification         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EUT Type                                | Cloud Services Modem                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Brand Name                              | <br>Versa Networks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Model Name                              | CSM64                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Marketing Name                          | Cloud Services Modem                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| FCC ID                                  | 2ARF9CSM64                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Wireless Technology and Frequency Range | WCDMA Band II: 1850 MHz ~ 1910 MHz<br>WCDMA Band IV: 1710 MHz ~ 1755 MHz<br>WCDMA Band V: 824 MHz ~ 849 MHz<br>LTE Band 2: 1850 MHz ~ 1910 MHz<br>LTE Band 4: 1710 MHz ~ 1755 MHz<br>LTE Band 5: 824 MHz ~ 849 MHz<br>LTE Band 7: 2500 MHz ~ 2570 MHz<br>LTE Band 12: 699 MHz ~ 716 MHz<br>LTE Band 13: 777 MHz ~ 787 MHz<br>LTE Band 14: 788 MHz ~ 798 MHz<br>LTE Band 17: 704 MHz ~ 716 MHz<br>LTE Band 25: 1850 MHz ~ 1915 MHz<br>LTE Band 26: 814 MHz ~ 849 MHz<br>LTE Band 30: 2305 MHz ~ 2315 MHz<br>LTE Band 38: 2570 MHz ~ 2620 MHz<br>LTE Band 41: 2496 MHz ~ 2690 MHz<br>LTE Band 42: 3450 MHz ~ 3550 MHz, 3550 MHz ~ 3600 MHz<br>LTE Band 43: 3600 MHz ~ 3700 MHz<br>LTE Band 48: 3550 MHz ~ 3700 MHz<br>LTE Band 66: 1710 MHz ~ 1780 MHz<br>LTE Band 71: 663 MHz ~ 698 MHz<br>5G NR n2 : 1850 MHz ~ 1910 MHz<br>5G NR n5 : 824 MHz ~ 849 MHz<br>5G NR n7 : 2500 MHz ~ 2570 MHz<br>5G NR n12: 699 MHz ~ 716 MHz<br>5G NR n13: 777 MHz ~ 787 MHz<br>5G NR n14: 788 MHz ~ 798 MHz<br>5G NR n25 : 1850 MHz ~ 1915 MHz<br>5G NR n26: 814 MHz ~ 849 MHz<br>5G NR n30 : 2305 MHz ~ 2315 MHz<br>5G NR n38 : 2570 MHz ~ 2620 MHz<br>5G NR n41 : 2496 MHz ~ 2690 MHz<br>5G NR n48 : 3550 MHz ~ 3700 MHz<br>5G NR n66 : 1710 MHz ~ 1780 MHz<br>5G NR n71 : 663 MHz ~ 698 MHz<br>5G NR n77: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3980 MHz<br>5G NR n78: 3450 MHz ~ 3550 MHz, 3700 MHz ~ 3800 MHz |
| Mode                                    | RMC 12.2Kbps<br>HSDPA<br>HSUPA<br>DC-HSDPA<br>LTE: QPSK, 16QAM, 64QAM, 256QAM<br>5G NR: DFT-s-OFDM/CP-OFDM, Pi/2 BPSK/QPSK/16QAM/64QAM/256QAM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| HW                                      | 1.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| SW                                      | M0R.000003                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| EUT Stage                               | Identical Prototype                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

**Reviewed by: Jason Wang**

**Report Producer: Paula Chen**

## 2. Maximum RF average output power among production units

| Mode  |         | Maximum Average power(dBm) |
|-------|---------|----------------------------|
| WCDMA | Band 2  | 24.5                       |
|       | Band 4  | 24.5                       |
|       | Band 5  | 24.5                       |
| LTE   | Band 2  | 24                         |
|       | Band 4  | 24                         |
|       | Band 5  | 24                         |
|       | Band 7  | 24                         |
|       | Band 12 | 24                         |
|       | Band 13 | 24                         |
|       | Band 14 | 24                         |
|       | Band 17 | 24                         |
|       | Band 25 | 24                         |
|       | Band 26 | 24                         |
|       | Band 30 | 23                         |
|       | Band 38 | 24                         |
|       | Band 41 | 26.5                       |
|       | Band 42 | 22.5                       |
|       | Band 43 | 22.5                       |
|       | Band 48 | 22.5                       |
|       | Band 66 | 24                         |
|       | Band 71 | 24                         |
| 5G NR | n2      | 24.5                       |
|       | n5      | 24.5                       |
|       | n7      | 24.5                       |
|       | n12     | 24                         |
|       | n13     | 24                         |
|       | n14     | 24                         |
|       | n25     | 24.5                       |
|       | n26     | 24                         |
|       | n30     | 23                         |
|       | n38     | 25                         |
|       | n41     | 27.5                       |
|       | n48     | 22.5                       |
|       | n66     | 24.5                       |
|       | n71     | 24.5                       |
|       | n77     | 27.5                       |
|       | n78     | 27.5                       |

### **3. RF Exposure Limit Introduction**

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

| Frequency range (MHz)                                          | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm <sup>2</sup> ) | Averaging time (minutes) |
|----------------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| <b>(A) Limits for Occupational/Controlled Exposures</b>        |                               |                               |                                     |                          |
| 0.3-3.0                                                        | 614                           | 1.63                          | *(100)                              | 6                        |
| 3.0-30                                                         | 1842/f                        | 4.89/f                        | *(900/f <sup>2</sup> )              | 6                        |
| 30-300                                                         | 61.4                          | 0.163                         | 1.0                                 | 6                        |
| 300-1500                                                       |                               |                               | f/300                               | 6                        |
| 1500-100,000                                                   |                               |                               | 5                                   | 6                        |
| <b>(B) Limits for General Population/Uncontrolled Exposure</b> |                               |                               |                                     |                          |
| 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                       |

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna

## 4. Radio Frequency Radiation Exposure Evaluation

**General Note:**

1. The device support DPS (Dynamic Power Share) function to achieve higher uplink data rate keeping the total power unchanged in 5G NR NSA EN-DC mode according to 3GPP 38.213, when the equipment has a dynamic power sharing capability, it adjusts the LTE or NR transmission power so that the instantaneous total power does not exceed the specified value, when the maximum transmission power of NR (P<sub>LTE</sub>, P<sub>NR</sub>) and the specified total power (P<sub>total</sub>) have been set and the instantaneous calculated total transmission power exceeds P<sub>total</sub>, the NR transmission power is reduced so that the actual transmission power of the user equipment will not exceed P<sub>total</sub> power. So if the LTE and NR standalone SAR is testing at total power level, the EN-DC combine MPE(LTE+NR) will not higher than the each standalone LTE and NR MPE, therefore, the simultaneous transmission analysis is used standalone MPE at total power level to show compliance.

| Band         | Antenna Gain (dBi) | Maximum Power (dBm) | Maximum EIRP (dBm) | Maximum PG (mW) | Power Density at 20cm (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) | Power Density / Limit |
|--------------|--------------------|---------------------|--------------------|-----------------|---------------------------------------------|-----------------------------|-----------------------|
| WCDMA Band 2 | 3.08               | 24.50               | 27.6               | 572.80          | 0.114                                       | 1.000                       | 0.114                 |
| WCDMA Band 4 | 3.34               | 24.50               | 27.8               | 608.14          | 0.121                                       | 1.000                       | 0.121                 |
| WCDMA Band 5 | 2.28               | 24.50               | 26.8               | 476.43          | 0.095                                       | 0.536                       | 0.177                 |
| LTE Band 2   | 3.08               | 24.00               | 27.1               | 510.50          | 0.102                                       | 1.000                       | 0.102                 |
| LTE Band 4   | 3.34               | 24.00               | 27.3               | 542.00          | 0.108                                       | 1.000                       | 0.108                 |
| LTE Band 5   | 2.28               | 24.00               | 26.3               | 424.62          | 0.085                                       | 0.549                       | 0.154                 |
| LTE Band 7   | 3.40               | 24.00               | 27.4               | 549.54          | 0.109                                       | 1.000                       | 0.109                 |
| LTE Band 12  | 3.04               | 24.00               | 27.0               | 505.82          | 0.101                                       | 0.466                       | 0.216                 |
| LTE Band 13  | 2.99               | 24.00               | 27.0               | 500.03          | 0.100                                       | 0.518                       | 0.192                 |
| LTE Band 14  | 2.20               | 24.00               | 26.2               | 416.87          | 0.083                                       | 0.525                       | 0.158                 |
| LTE Band 17  | 3.04               | 24.00               | 27.0               | 505.82          | 0.101                                       | 0.469                       | 0.215                 |
| LTE Band 25  | 3.08               | 24.00               | 27.1               | 510.50          | 0.102                                       | 1.000                       | 0.102                 |
| LTE Band 26  | 2.28               | 24.00               | 26.3               | 424.62          | 0.085                                       | 0.543                       | 0.156                 |
| LTE Band 30  | 0.94               | 23.00               | 23.9               | 247.74          | 0.049                                       | 1.000                       | 0.049                 |
| LTE Band 38  | 3.33               | 24.00               | 27.3               | 540.75          | 0.108                                       | 1.000                       | 0.108                 |
| LTE Band 41  | 3.61               | 26.50               | 30.1               | 1025.65         | 0.204                                       | 1.000                       | 0.204                 |
| LTE Band 42  | 0.44               | 22.50               | 22.9               | 196.79          | 0.039                                       | 1.000                       | 0.039                 |
| LTE Band 43  | 0.42               | 22.50               | 22.9               | 195.88          | 0.039                                       | 1.000                       | 0.039                 |
| LTE Band 48  | 0.44               | 22.50               | 22.9               | 196.79          | 0.039                                       | 1.000                       | 0.039                 |
| LTE Band 66  | 3.34               | 24.00               | 27.3               | 542.00          | 0.108                                       | 1.000                       | 0.108                 |
| LTE Band 71  | 2.80               | 24.00               | 26.8               | 478.63          | 0.095                                       | 0.442                       | 0.216                 |
| 5G NR n2     | 3.08               | 24.50               | 27.6               | 572.80          | 0.114                                       | 1.000                       | 0.114                 |
| 5G NR n5     | 2.28               | 24.50               | 26.8               | 476.43          | 0.095                                       | 0.549                       | 0.173                 |
| 5G NR n7     | 3.40               | 24.50               | 27.9               | 616.60          | 0.123                                       | 1.000                       | 0.123                 |
| 5G NR n12    | 3.04               | 24.00               | 27.0               | 505.82          | 0.101                                       | 0.466                       | 0.216                 |
| 5G NR n13    | 2.99               | 24.00               | 27.0               | 500.03          | 0.100                                       | 0.518                       | 0.192                 |
| 5G NR n14    | 2.20               | 24.00               | 26.2               | 416.87          | 0.083                                       | 0.525                       | 0.158                 |
| 5G NR n25    | 3.08               | 24.50               | 27.6               | 572.80          | 0.114                                       | 1.000                       | 0.114                 |
| 5G NR n26    | 2.28               | 24.00               | 26.3               | 424.62          | 0.085                                       | 0.543                       | 0.156                 |
| 5G NR n30    | 0.94               | 23.00               | 23.9               | 247.74          | 0.049                                       | 1.000                       | 0.049                 |
| 5G NR n38    | 3.33               | 25.00               | 28.3               | 680.77          | 0.136                                       | 1.000                       | 0.136                 |
| 5G NR n41    | 3.61               | 27.50               | 31.1               | 1291.22         | 0.257                                       | 1.000                       | 0.257                 |
| 5G NR n48    | 0.44               | 22.50               | 22.9               | 196.79          | 0.039                                       | 1.000                       | 0.039                 |
| 5G NR n66    | 3.34               | 24.50               | 27.8               | 608.14          | 0.121                                       | 1.000                       | 0.121                 |
| 5G NR n71    | 2.80               | 24.50               | 27.3               | 537.03          | 0.107                                       | 0.442                       | 0.242                 |
| 5G NR n77    | 2.28               | 27.50               | 29.8               | 950.60          | 0.189                                       | 1.000                       | 0.189                 |
| 5G NR n78    | 1.19               | 27.50               | 28.7               | 739.61          | 0.147                                       | 1.000                       | 0.147                 |

## Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.