# RF Exposure Evaluation Report

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|---|---|---|
| **APPLICANT** | : | **Codium Networks LLC** |
| **EQUIPMENT** | : | **Outdoor CPE** |
| **BRAND NAME** | : | **Codium** |
| **MODEL NAME** | : | **OCBX12** |
| **FCC ID** | : | **2AWJHOCBX12** |
| **STANDARD** | : | **47 CFR Part 2.1091**<br>**FCC KDB 447498 D01 v06** |

**The product evaluation date was started from Oct. 25, 2024 and completed on Oct. 25, 2024. We, Sporton International Inc. (Kunshan), would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091 and FCC KDB 447498 D01 v06, and pass the limit. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.**

Si Zhang

**Approved by: Si Zhang**

ACCREDITED Cert #5145.02

***Sporton International Inc. (Kunshan)***
***No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300***
***People's Republic of China***

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## Revision History

| REPORT NO. | VERSION | DESCRIPTION | ISSUED DATE |
|---|---|---|---|
| FA492703-01 | Rev. 01 | Initial issue of report. | Oct. 25, 2024 |
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# 1. Administration Data

## 1.1. Testing Laboratory

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

| Testing Laboratory | | | |
|---|---|---|---|
| Test Firm | Sporton International Inc. (Kunshan) | | |
| Test Site Location | No. 1098, Pengxi North Road, Kunshan Economic Development Zone<br>Jiangsu Province 215300 People's Republic of China<br>TEL : +86-512-57900158 | | |
| Test Site No. | Sporton Site No. | FCC Designation No. | FCC Test Firm Registration No. |
| | SAR01-KS | CN1257 | 314309 |

| Applicant | |
|---|---|
| Company Name | Codium Networks LLC |
| Address | 3410 GALT OCEAN DRAPT 1601N Fort Lauderdale, FL 33308 United States |

| Manufacturer | |
|---|---|
| Company Name | Codium Networks LLC |
| Address | 3410 GALT OCEAN DRAPT 1601N Fort Lauderdale, FL 33308 United States |

## 2. Description of Equipment Under Test (EUT)

| Product Feature & Specification | |
|---|---|
| **EUT Type** | Outdoor CPE |
| **Brand Name** | Codium |
| **Model Name** | OCBX12 |
| **FCC ID** | 2AWJHOCBX12 |
| **Wireless Technology and Frequency Range** | LTE Band 42: 3550 MHz ~ 3600 MHz<br>LTE Band 43: 3600 MHz ~ 3700MHz<br>LTE Band 48: 3550 MHz ~ 3700 MHz |
| **Mode** | LTE: QPSK, 16QAM, 64QAM |
| **Antenna Gain** | LTE Band 42/43/48 : 19.42 dBi |
| **Antenna Type** | Panel Antenna |
| **HW Version** | V1.0 |
| **SW Version** | OCB12_FW_V2.0.5M |
| **EUT Stage** | Identical Prototype |
| **Remark:**<br>1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.<br>2. This is a change FCC ID report. Since no changes have been made to this device, therefore, all the results were leveraged from original report (FCC ID: 2AU8HSRU410, Sporton Report Number FA492703). | |

| Comments and Explanations: |
|---|
| 1. The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.<br>2. The maximum RF output tune up power, antenna gain also the safe distance used for evaluate RF exposure were declared by manufacturer. |

## 3. Maximum RF Tune Up power among production units

**<LTE>**

| Mode | | Maximum Average power(dBm) |
|---|---|---|
| LTE | Band 42/43/48 | 25.00 |

# 4. 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 ($mW/cm^2$) | 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/f2) | 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/f2) | 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 **48 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

# 5. Radio Frequency Radiation Exposure Evaluation

## 5.1. Standalone Power Density Calculation

| Band | Frequency (MHz) | Antenna Gain (dBi) | Maximum Power (dBm) | Maximum EIRP (dBm) | Maximum EIRP (W) | Average EIRP (mW) | Power Density at 48cm (mW/cm^2) | Limit (mW/cm^2) |
|---|---|---|---|---|---|---|---|---|
| LTE Band 48 | 3552.5 | 19.42 | 25.00 | 44.420 | 27.669 | 27669.416 | 0.956 | 1.000 |

**Note:**
1. For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.
2. Chose the maximum power density to do MPE analysis.
3. LTE band 42/43 covered by LTE band 48 with the same power level, so only chose LTE band 48 to perform standalone power density calculation.

## Conclusion:

According to 47 CFR §2.1091, the equipment at least 48 cm to show compliance with the power density limit, the RF exposure analysis concludes that the RF Exposure is FCC compliant.

------THE END------