# Exhibit: RF Exposure – IC/ FCC

**FCC ID: RV7-5G1100 / TMB-OSDI4W1**
**IC: 6028A-5G1100 / 6028A-OSDI4W1**

Report File #: 7169003034-002

# *RF Exposure – IC / FCC*

## Purpose

The purpose of this test is to ensure that the RF energy intentionally transmitted, in terms of power density emitted from the EUT at a stated operating distance does not exceed the limits listed below as defined in the applicable test standard, as calculated based upon readings obtained during testing. This helps protect human exposure to excessive RF fields.

## Limit(s) and Method

The EUT is a fixed device intended to be used in such a way that a separation distance of 1meter as stated by the manufacturer is maintained between the transmitter's radiating structure and the body of the user or nearby persons during normal operation.

- The limits, as defined FCC 1.1310 Table 1 (B) limits for general public exposure was applied. The limits for the frequency ranges 1.5 GHz to 100 GHz was applied. The limit is 1.0 mW / $cm^2$.

- For RSS 102, section 3. Evaluation Methods: Devices that have a radiating element normally operating at or below 6 GHz, with a separation distance greater than 20cm between the user and/or bystander and the device shall undergo an RF exposure evaluation. One of the accepted test methods is the FCC exposure KDB 447498 procedure as notes in note (3).
  The limit is also 1.0mW /$cm^2$ .

## Results

## Calculations

The power density formula is given by:

$$P_d = (P_{out}*G) / (4*pi*R^2)$$

Where,
$P_d$ = Power density in $mW/cm^2$
$P_{out}$ = Conducted output power to antenna in mW
G = Numeric Antenna Gain
Pi = 3.1416
R = Separation distance in cm, in our case 100cm

2.4 GHz band:
$P_{out}$ = 918mW
Antenna max gain: 6dBi or $10^{6/10}$ = 3.981 numeric gain

$P_d = (918 \times 3.981 \text{ mW}) / (4*3.1416*100^2 \text{ cm}^2)$

$P_d = (3654.558 \text{ mW}) / (125664 \text{ cm}^2)$
**$P_d = 0.029 \text{ mW/cm}^2$**

5 GHz band:
$P_{out}$ = 993mW
Antenna max gain: 17dBi or $10^{17/10}$ = 50.119 numeric gain

$P_d = (993 \times 50.119 \text{ mW}) / (4*3.1416*100^2 \text{ cm}^2)$

$P_d = (49768.167 \text{ mW}) / (125664 \text{ cm}^2)$
**$P_d = 0.396 \text{ mW/cm}^2$**

Collocated transmitters:

| | | |
|---|---|---|
| Frequency band | 2.4GHz | 5GHz |
| Time Averaging: | 100% | 100% |
| Prediction distance: | 100cm | 100cm |
| MPE limit for uncontrolled exposure at prediction frequency: | 1 $mW/cm^2$ | 1 $mW/cm^2$ |
| Power density at prediction frequency: | 0.029 $mW/cm^2$ | 0.396 $mW/cm^2$ |
| Margin of compliance: | -15.4 dB | -4 dB |
| Margin of compliance %: | 2.9 % | 39.6 % |
| **Total Margin of Compliance:** | **42.5 %** | |

The device passes the requirement.