

MPE Calculation / RF Exposure

Product: WAVE RSU

Applicant: IT TELECOM Co., Ltd.

Model: ITT-V2X-RSU-N2

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FCC ID: ZO9ITT-V2X-RSU-N2

The FCC requires that the calculated MPE be equal to or less than a given limit dependent on frequency at a distance of 20 cm from the device to the body of the user. The equation for the calculation is given in 47 CFR FCC Part 2 Subpart J, section 2.1091 as,

$$S = EIRP / 4 \pi R^2$$

Where

S = Power density

EIRP = Effective Isotropically Radiated Power

R = distance to the centre of radiation of the antenna

Values

S = 1.0 mW/cm² for General population uncontrolled exposure (FCC Part 1.1310 Radiofrequency radiation exposure limits)

$$S = 1.0 \text{ mW/cm}^2$$

PT = 20.6 dBm (114.82 mW) : measured maximum output power including tune-up tolerance. ^{*note}

G = Antenna gain = 5.8 dBi (3.802 in linear terms)

$$EIRP = PT \times G$$

R = 20 cm

Calculation

$$EIRP = 114.82 \times 3.802 = 436.52 \text{ mW}$$

$$S = 436.52 / 12.56 \times (20)^2$$

$$S = 0.0868 \text{ mW/cm}^2$$

Conclusion

This confirms compliance to the required FCC Part 1.1310 Radiofrequency radiation exposure limit of 1.0m W/cm² at 20 cm operation.

Note: Measured maximum output power : 19.10 dBm / Tune-up tolerance : 18 dBm ± 1.5 dB