DISRUPTIVE
TECHNOLOGIES

RF Exposure and Transmitter Power Considerations for the Cloud Connector US

FCC ID: 2ATFX-100590

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 a device to the body of a user.

The Cloud Connector US equipment operates in the 902 MHZ – 928 MHz band.

The following FCC Rule Parts and procedures are applicable:

Part 1.1310 – Radiofrequency radiation exposure limits

Part 2.1091 – Radiofrequency radiation exposure evaluation: mobile devices

MPE CALCULATIONS

The MPE calculation used to calculate the safe operating distance for the user is:

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

Where S = Power density

EIRP = Effective Isotropic Radiated Power (EIRP = P x G)

P = Conducted Transmitter Power

G = Antenna Gain (relative to an isotropic radiator)

R = distance to the centre of radiation of the antenna (safe operating distance)

Values:

Transmitter frequency range = 902 MHZ – 928 MHz

Power = 25 dBm (316.2 mW)

G = 0 dBi

EIRP = 25 dBm (316.2 mW)

R = 20cm

Power Density Requirement

From table 1 (b) - Limits for General Population/ Uncontrolled Exposure of

FCC Rule Part 1.1310 for 902 – 928 MHz

$S = f/1500$ mW/cm^2 (f = operating frequency)

$S_{req} = 902/1500 = 0.60$ mW/cm^2

Calculation:

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

$S = 316.2 \,/(12.56 \times 20^2)$

$S = 316.2 \,/(5024)$

$S = 0.063$ mW/ cm^2 (<0.60 mW/cm^2)

This equates to a safe operating distance of 6.5 cm

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