

US Tech Test Report:
FCC ID:
Test Report Number:
Issue Date:
Customer:
Model:

FCC Part 15.247 Certification
2BFVO-CAPMDRAD
25-0028
May 7, 2025
GE Grid Solutions
CapMD Radio

Maximum Public Exposure to RF (MPE) CFR 15.247 (i), CFR 1.1310 (e)

The maximum exposure level to the public from the RF power of the EUT shall not exceed a power density, **S**, as per the respective limits in Table 1 below, at a distance, **d**, of 20 cm (Mobile condition) from the EUT.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

| Frequency range (MHz) | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm ²) | Averaging time (minutes) |
|--|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| Limits for General Population/Uncontrolled Exposure | | | | |
| 0.3-1.34 | 614 | 1.63 | *100 | 30 |
| 1.34-30 | 824/f | 2.19/f | *180/f ² | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1,500 | | | f/1500 | 30 |
| 1,500-100,000 | | | 1.0 | 30 |

f = frequency in MHz * = Plane-wave equivalent power density

Therefore, for:

MPE for 2400 MHz – 2483.5 MHz:

Limit: 1.0 mW/cm²

Peak Power (dBm) = +4 dBm (rated)

Peak Power (Watts) = 0.0025 W

Gain of Transmit Antenna = +4.5 dB_i = 2.818 numeric (Highest Gain)

d = Distance = 20 cm = 0.2 m

$$\begin{aligned} \mathbf{S} &= (\mathbf{P}\mathbf{G} / 4\pi\mathbf{d}^2) = \mathbf{EIRP}/4\mathbf{A} = 0.0025 \text{ (2.818)}/4\pi\cdot0.2\cdot0.2 \\ &= 0.01465/0.5030 = 0.0104 \text{ W/m}^2 \\ &= (0.02913 \text{ W/m}^2) (1\text{m}^2/\text{W}) (0.1 \text{ mW/cm}^2) \\ &= 0.002913 \text{ mW/cm}^2 \end{aligned}$$

which is << less than S = 1.0 mW/cm²

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Simultaneous Transmission Collocation considerations:

In certain installations the radio module may be installed in a host device collocated with a second identical radio module for redundancy. Although the radios are not designed to simultaneously transmit, that condition is being evaluated in this section of the RF exposure report to address KDB 447498 D01 v06 section 7.2. The calculations are presented below.

Calculations provide for transmitters that do simultaneously broadcast at the same frequency band, 2400-2483.5 MHz.

Calculations for simultaneous transmission per KDB 447498 D01 v06 section 7.2 is provided here to show that Simultaneous transmission MPE test exclusion applies since the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0 .

Total Sum of MPE:

Sum of the total MPE for both frequency bands =
 $0.002913/1 \text{ mW/cm}^2 + 0.002913/1.0 \text{ mW/cm}^2 = 0.0058$ which is << less than 1.0