

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

FCC Part 15 Certification/ RSS 247
WPEUWL02G
8031A-UWL02G
23-0221
May 9, 2024
Copeland Cold Chain LP
UWL02G

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 902-928 MHz Radio Device

Limit: 0.61 mW/cm² @ 915 MHz
Peak Power (dBm) = 7.11 dBm
Peak Power (Watts) = 0.005 W
Gain of Transmit Antenna = 0 dBi = 1, numeric(Highest Gain Antenna)
d = Distance = 20 cm = 0.2 m

$$\begin{aligned}
\mathbf{S} &= (\mathbf{PG} / 4\pi\mathbf{d}^2) = \mathbf{EIRP} / 4\mathbf{A} = 0.005(1.0) / 4 * \pi * 0.2 * 0.2 \\
&= 0.005 / 0.5030 = 0.010 \text{ W/m}^2 \\
&= (0.010 \text{ W/m}^2) (1\text{m}^2/\text{W}) (0.1 \text{ mW/cm}^2) \\
&= 0.0010 \text{ mW/cm}^2
\end{aligned}$$

which is << less than S = 0.61 mW/cm²

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RF Exposure Evaluation – IC

According to RSS-102, 2.5.2 Exemption Limits for Routine Evaluation

At or above 300 MHz and below 6 GHz and the source based time averaged maximum EIRP of the device is equal to or less than $1.31 \times 10^{-2} \times f^{0.6834}$ in Watts (adjusted for tune up tolerance where applicable), where f = frequency in MHz

For 902-928 MHz Band:

$$\text{Limit} = 1.31 \times 10^{-2} \times 915^{0.6834} = 1.4 \text{ Watts}$$

$$\text{Max EIRP for WiFi} = 7.11 \text{ dBm} + 0 \text{ dBi} = 7.11 \text{ dBm} = 5 \text{ mW} \ll 1400 \text{ mW}$$