

FCC ID:
 IC:
 Test Report Number:
 Issue date:
 Customer:
 Model:

SM6-MINODE6A
 9235A-MINODE6A
 24-0031
 March 20, 2024
 Mueller Systems, LLC
 MINODE6A

Maximum Permissible Exposure to RF (MPE),

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 MHz - 928 MHz:

Limit: 0.61 mW/cm²

Peak Power (dBm) = 28.38 dBm (conducted output measurement)

Peak Power (Watts) = 0.689 W

Gain of Transmit Antenna = +4.0 dB_i = 2.51 numeric

d = Distance = 20 cm = 0.2 m

$$\begin{aligned}
 S &= (PG / 4\pi d^2) = EIRP / 4A = 0.689 * (2.51) / 4 * \pi * 0.2^2 \\
 &= 1.7294 / 0.5030 = 3.4381 \text{ W/m}^2 \\
 &= (3.4381 \text{ W/m}^2) (1\text{m}^2/\text{W}) (0.1 \text{ mW/cm}^2) \\
 &= \underline{0.3438 \text{ mW/cm}^2}
 \end{aligned}$$

which is << less than S = 0.61 mW/cm²

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RSS-102

All transmitters are exempt from routine SAR and RF exposure evaluations provided that they comply with the requirements of sections 2.5.1 or 2.5.2. If the equipment under test (EUT) meets the requirements of sections 2.5.1 or 2.5.2, applicants are only required to submit a properly signed declaration of compliance (see Annex C).

RSS-102, 2.5.2 compliance for 902 MHz – 928 MHz:

RF Exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates: At or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;

In this case $f = 902$ MHz

Limit = $1.31 \times 10^{-2} \times 902^{0.6834} = \underline{1.37}$ Watts

Max EIRP = 28.4 dBm (0.691 W) + 4.0 dBi (0.0025 W) x SBTA = 0.694 W << 1.37 W
SBTA = source-base time-average = 1.0

All calculations performed by:

Test Engineer: George Yang

Date: March 20, 2024

Signature: 