

EXHIBIT 10 –FCC RF EXPOSURE (MPE) REPORT

In accordance with FCC 47 CFR §1.1307(b), “In addition to the actions listed in paragraph (a) of this section, Commission actions granting construction permits, licenses to transmit or renewals thereof, equipment authorizations or modifications in existing facilities, require the preparation of an Environmental Assessment (EA) if the particular facility, operation or transmitter would cause human exposure to levels of radiofrequency radiation in excess of the limits in §§1.1310 and 2.1093 of this chapter.”

FCC 47 CFR §1.1310				
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)
(A) Limits for Occupational/Controlled Exposure				
0.3 - 3.0	614	1.63	*100	6
3.0 - 30	1842/ f	4.89/ f	*900/ f ²	6
30 - 300	61.4	0.163	1.0	6
300 - 1,500	-	-	f /300	6
1,500-100,000	-	-	5	6
(B) 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	30

f = Frequency om MHz

* = Plane-wave equivalent power density

Duty Cycle Evaluation:

In actual use, this device has a non-user-adjustable transmit duty cycle as follows:

Transmission Duration: 260ms (0.26s)

Transmission Interval: 5s

$$\text{Duty Cycle} = 0.26\text{s}/5\text{s} = 0.052 = 5.2\%$$

The transmit duty cycle is considered in the MPE Calculation.

**Prediction of MPE Limit
47 CFR § 2.1091**

$$S_{20} = \frac{P_A G_N}{4\pi R_{20}^2}$$

$$S_C = \frac{P_A G_N}{4\pi R_C^2}$$

$$R_C = \sqrt{\frac{P_A G_N}{4\pi S_L}}$$

$$S_L = \frac{f}{1500} \text{ (mW/cm}^2\text{)}$$

S₂₀ = Power Density of the Device at 20cm

S_L = Power Density Limit

S_C = Power Density of the Device at the Compliance Distance R_C

R₂₀ = 20cm

R_C = Minimum Distance to the Radiating Element to Meet Compliance

P_T = Power Input to Antenna

P_A = Adjust Power

G_N = Numeric Gain of the Antenna

f = Transmit Frequency

Transmit Duty Cycle = 5%

Use Group = General Population

Transmit Duty Cycle:	5.20	(%)
Tx Frequency (f):	400.00	(MHz)
RF Power at Antenna Input Port (P _T):	500.00	(mW)
Antenna Gain:	6.00	(dBi)
Numeric Antenna Gain (G _N):	3.98	(numeric)
Cable or Other Loss:	0.00	(dB)
Duty Cycle/Loss Adjusted Power (P _A):	26.00	(mW)

S_L =	0.267	(mW/cm ²)
S₂₀ at 20cm =	0.021	(mW/cm ²)
R_C =	5.6	(cm)
S_C =	0.27	(mW/cm ²)

RESULT PASS