

Company: Kollmorgen

Evaluation of: 188449-01E

To: FCC CFR 47 Part 1.1310

Report No.: KOLL01-U11_MPE Rev A

MPE/RF EXPOSURE EVALUATION



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Evaluation of: Kollmorgen 188449-01E

To: FCC CFR 47 Part 1.1310

Evaluation Report Serial No.: KOLL01-U11_MPE Rev A

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1. MAXIMUM PERMISSABLE EXPOSURE

Assessment

There are no MPE limits specified in FCC Title 47 §1.1310 for devices operating below 300 kHz. The following is an assessment based on taking the limit at 300 kHz.

96.8 dBµV/m is maximum field strength measured at 125 kHz. Measured at a distance of 3 meters.

§2.1093

(b) For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.

To convert to the field strength at 20cm we apply the following equation;-

$$E_{\text{limit}} = E_{\text{measured}} + 40 \log (d_{\text{measured}} / d_{\text{spec limit}}) \text{ Ref FCC §15.31(f)(2)}$$

$$= 96.8 + 40 \log(300/20) = 96.8 + 47.05 = 143.84 \text{ dBµV/m @ 20 cm} = 15.56 \text{ V/m (limit is 614 V/m)}$$

The Limits for Maximum Permissible Exposure (MPE) of §1.1310 are shown in the table below;

Per the requirements for the Limits for General Population/Uncontrolled Exposure the maximum permissible Electric Field Strength at 20 cm = 614 V/m.

Specification - Maximum Permissible Exposure Limits

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	--	--	1.0	30

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

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