

MPE CALCULATION

Applicant : NIDEC INSTRUMENTS CORPORATION
Equipment : NFC Card Reader
Model No. : MCM252-2RM033
FCC ID : 2BOKGMCM252001A

RF Exposure Evaluation

According to KDB 447498 D04 Interim General RF Exposure Guidance v01

1. 1-mW Test Exemption

Per § 1.1307(b)(3)(i)(A), a single RF source is exempt RF device (from the requirement to show data demonstrating compliance to RF exposure limits, as previously mentioned) if the available maximum time-averaged power is no more than 1 mW, regardless of separation distance.

This exemption applies to all operating configurations and exposure conditions, for the frequency range 100 kHz to 100 GHz, regardless of fixed, mobile, or portable device exposure conditions. This is a standalone exemption, and it cannot be applied in conjunction with any other test exemption.

2 Calculation:

Frequency (MHz)	Electric Field Strength *		ERP (mW)	Limit (mW)
	(dBuV/m)	(V/m)		
13.56	54.5	0.000530884	0.00005156	1.0

*The highest field strength reading from Intertek Report No. 26030313JTC-002. 13.56 MHz is 54.5 dBuV/m @ 3 m.

According to ANSI C63.10 Annex G.2

$$\text{EIRP} = \text{pt} \times \text{gt} = (E \times d)^2 / 30$$

$$\text{ERP} = \text{EIRP} / 1.64 = (E \times d)^2 / 49.2$$

Where;

pt is the transmitter output power in watts

gt is the numeric gain of the transmitting antenna (dimensionless)

E is the electric field strength in V/m

d is the measurement distance in meters (m)

$$V/m = 10^{(((\text{dBuV/m}) - 120) / 20)}$$

4 Results:

Per KDB 447498 D04 Interim General RF Exposure Guidance v01 with the maximum time-averaged power is less than 1 mW, the RF exposure evaluation is not required.

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Signature



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Signature



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