

RF EXPOSURE EVALUATION

Applicant	NEID CO.,LTD.
Applicant Address	1363, Hyohaeng-ro, Hwaseong-si, Gyeonggi-do, Republic of Korea
FCC ID	2BB8X-SPRECHECKER
Product Description	RFID Reader for PR-STL (NA-Prechecker)
Basic model(HVIN)	RFID Reader for PR-STL (NA-Prechecker)
Variant Model name	-
Operating Frequency	13.56 MHz
Antenna type	PCB Antenna
Power Source	DC 5 V

**** RF Exposure Evaluation ****

Limits for FCC RF Exposure Evaluation

Determination of exemption (FCC Part 1, Subpart I, §1.1307 (b)(3))

(i) For single RF sources (*i.e.*, any single fixed RF source, mobile device, or portable device:

A single RF source is exempt if:

(A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance.

This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);

Calculation

$$P = \frac{P_t G_t}{4\pi r^2} = \frac{V^2}{Z_0} = \frac{E_{rms}^2}{120\pi}$$

Where
 P = Electrical energy in watts
 V = Voltage in V
 Z₀ : Impedance in free space

$$E = \frac{\sqrt{30P_t G_t}}{r} = \frac{\sqrt{30EIRP(W)}}{r}$$

Where
 P_t = transmitter output power in watts
 G_t = numeric gain of the transmitting antenna (unitless)
 E = electric field strength in V/m
 r = measurement distance in meters (m)

$$20\log(E) = 10\log(30) + 10\log(EIRP) - 20\log(r)$$

$$E(\text{dBV}) = EIRP(\text{dBW}) - 20\log(r) + 14.77$$

$$EIRP(\text{dBm}) = E(\text{dBuV}) + 20\log(r) - 104.77$$

Evaluation results : SAR test is exempt as shown in the table below.

Mode	Frequency [MHz]	Measured power (dBuV/m@3m)	Maximum power		FCC Exemption
			[dBm]	[mW]	
RFID	13.56	53.0	-42.2	0.000 06	Below 1 mW

* Safety distance : 5 mm