RF EXPOSURE INFORMATION

Arc Mobile Control Adapter
HW version: 1.0
SW version: 1.0

Version 1.0 Draft
6.3.2015

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1 MPE limit for uncontrolled exposure at prediction frequency

For Bluetooth 1 mW/cm2 , frequency range 1.5 – 100 GHz

For NFC $S = \frac{180}{f[\mathrm{MHz}]^2} = \frac{180}{13.56^2} = 0.98\ \mu\mathrm{W/cm^2}$, frequency 13.56 MHz

Reference to OET Bulletin 65, ed. 97-01, page 73
Appendix A, Table 1, B, page 67
(B) Limits for General Population/Uncontrolled Exposure

2 Prediction of MPE limit at a given distance for Bluetooth

2.1 Power density

Product category ”Mobile device”

$$S = \frac{EIRP}{4\pi r^2}$$

where

EIRP	9.5 dBm = 8.9 mW
Prediction distance r	0.20 m
Time averaging	100 %
Prediction frequency	2450 MHz
Power density at prediction frequency	0.018 W/m^2
equals to	**0.0018 mW/cm^2**
MPE limit for uncontrolled exposure	1 mW/cm^2

2.2 Duty cycle and duty factor

According to manufacturer’s test specification:

	Duty cycle	Duty factor
Basic rate	77.93 %	1.08 dB
EDR	77.87 %	1.09 dB

3 Prediction of MPE limit at a given distance for NFC

3.1 Power density

$$S = \frac{EIRP}{4\pi r^2}$$

where

EIRP		4.9 dBµA/m@10m
	equals to	-28.4 dBm
	equals to	0.0015 mW
Prediction distance r		0.20 m
Time averaging		100 %
Prediction frequency		13.56 MHz
Power density at prediction frequency		2.98 µW/m^2
	equals to	**0.298 nW/cm^2**
MPE limit for uncontrolled exposure		97.9 µW/cm^2

3.2 E/H field strength

H-field strength		4.9 dBµA/m@10m
	equals to	**1.8 µA/m**
E-field strength		56.4 dBµV/m@10m
	equals to	**661 µV/m**
Prediction frequency		13.56 MHz
Time averaging		100%

MPE limit for uncontrolled exposure

H-field limit = 2.19/f =	162 mA/m
E-field limit = 824/f =	60.8 V/m

Reference to OET Bulletin 65, ed. 97-01, page 73
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