MPE Analysis Report

The Equipment Under Test (EUT) is a POS device (point of sale device). It supports reading magnetic stripe credit card, EMV smart credit card and passive RFID tag credit card. It can be connected to PC via USB port and operated by a corresponding software. The magnetic head is for reading data from credit card tape swiping. The embedded EMV chip interface are used for reading EMV smart credit card data. The EUT contains 13.56MHz NFC tag reader for contactless payment card transaction. The EUT is powered by USB port (5VDC).

NFC Portion (13.56MHz single channel)
Antenna Type: Internal, Integral
Antenna Gain: 0dBi
Maximum conducted RF power: 0dBm
Maximum allowed production tolerance: +0dB / -50dB

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For Maximum Permissible Exposure (MPE) evaluation of the unit, the maximum power density at 20 cm from this transmitter shall be less than the General Population / Uncontrolled MPE limit in OET Bulletin 65 and meet the requirement listed in KDB447498.

For the NFC portion of the EUT, the measured powers among all the measured channels were within its production tolerance. The antenna gain is 0 dBi = 1 (num gain) and its maximum source-based time-averaging duty factor is 100%. From these data and its operating configuration, the exposed power density at a distance (R) of 20cm from the center of radiation of the antenna can be calculated according to OET Bulletin 65 as follow:

> The EIRP radiated power
> = conducted power (with maximum tolerance) + antenna gain
> = 0 dBm + 0 dBi
> = 0 dBm (1 mW)
>
> The radiated (EIRP) source-based time-averaging output power
> = (1 * 1) mW
> = 1 mW
>
> The power density at 20 cm from the antenna
> = EIRP / $4\pi R^2$
> = 0.0002 mW cm-2

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