technology that matters

Groenlo, 26 Augustus 2015

Declaration on radiation safety standard conformance

Return address: PO Box 6, 7140 AA Groenlo, The Netherlands

American Certification Body
Certification Department
6731 Whittier Avenue, Suite C110
McLean, Virginia 22101
USA

We, N.V. Nederlandsche Apparatenfabriek "Nedap", declare that the following product:

Description	: Long-range vehicle and driver identification reader operating on 2.45 GHz, 433 MHz and 120 kHz. This calculation is for the 2.45 GHz part.
FCC ID	: CGDTRANSITULTI
Manufacturer	: N.V. Nederlandsche Apparatenfabriek "Nedap"
Brand	: Nedap
Model	: TRANSIT ULTIMATE

The measured field strength at 2.45 GHz is 110.78 dBµV/m @ 3 m distance.

E_{lim} = 20 x $\log_{10}(\frac{\sqrt{30P_{lim}}}{d})$ + 120

Where

E_{lim} = electric field strength limit, in dB (µV/m)
P_{lim} = EIRP limit, in watts
d = measurement distance, in meters

110.78 = 20 $\log_{10}(\frac{\sqrt{30P_{lim}}}{3})$ + 120 >>>> – 9.22 = 20 $\log_{10}(\frac{\sqrt{30P_{lim}}}{3})$ --0.461 = $\log_{10}(\frac{\sqrt{30P_{lim}}}{3})$

0.345 = $\frac{\sqrt{30P_{lim}}}{3}$ »»»» $Plim = 36\ mW$

The power density at 20 cm distance can be calculated as follows :

S = Ppeak/4*π * R^2 (power density)

Ppeak = 36 mW

S = Ppeak / 4*π * R^2 = 3104 / 4*π*$(20cm)^2$ = 0.01 mW/cm^2 The limit is 1.0 mW/cm^2

This means that according to OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01), the equipment fulfills the requirements on power density for general population/uncontrolled exposure and therefore fulfills the requirements of 47 CFR Part 15.247 (b)(5).

N.V. Nederlandsche Apparatenfabriek "Nedap"

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Approbation Officer

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