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Cards and personal identification

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Identification cards — Contactless integrated circuit(s) cards — Proximity cards — Part 2: Radio frequency power and signal interface

AMENDMENT 3: Limits of electromagnetic disturbance levels

Cartes d'identification — Cartes à circuit(s) intégré(s) sans contact — Cartes de proximité — Partie 2: Interface radio fréquence et des signaux de communication

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AMENDEMENT 3: Limites de niveaux de perturbation électromagnétique

Document type: International Standard
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Amendment 3 to ISO/IEC 14443-2:2009 was prepared by Technical Committee ISO/IEC/TC JTC 1, *Information technology*, Subcommittee SC 17, Cards and personal identification.

Identification cards — Contactless integrated circuit(s) cards — Proximity cards — Part 2: Radio frequency power and signal interface

AMENDMENT 3: Limits of electromagnetic disturbance levels

Page 2, clause 3

Insert the following new definition 3.9 after definition 3.8:

Electromagnetic disturbance (EMD)
electromagnetic radiation which is emitted by electrical circuits carrying rapidly changing signals, as a by-product of their normal operation, and which causes unwanted signals to be induced in other circuits.

Page 5, clause 4

Insert the following new symbols at the end of the clause:

$V_{E,PICC}$ EMD limit, PICC

$V_{E,PCD}$ EMD limit, PCD

Page 22

Insert the following new clause 10 after clause 9:

10 Electromagnetic disturbance levels

10.1 PCD limits

The PCD shall not detect any load-modulation amplitude below $V_{E,PCD}$ at a field strength H, when measured as described in ISO/IEC 10373-6/Amendment 8. $V_{E,PCD}$ shall be:

— $2/3 + 3/H^2$ in mV (peak) for $H_{min} \leq H \leq 4{,}5$ A/m (rms)

— 0,81 mV (peak) for 4,5 A/m (rms) $< H \leq H_{max}$

NOTE H is the (rms) value of magnetic field strength in A/m.

10.2 PICC limits

The EMD level before PICC data transmission shall be below $V_{E,PICC}$ at a field strength H for at least the duration of the low EMD time $t_{E,PICC}$, when measured as described in ISO/IEC 10373-6/Amendment 8. $V_{E,PICC}$ shall be:

— $2/3 + 3/H^2$ in mV (peak) for $H_{min} \leq H \leq 4{,}5$ A/m (rms)

— 0,81 mV (peak) for 4,5 A/m (rms) < $H \leq H_{max}$

During this low EMD time, the EMD level may exceed $V_{E,PICC}$ during one short period of 16/*fc* if it never exceeds 4 times $V_{E,PICC}$.

NOTE 1 *H* is the (rms) value of magnetic field strength in A/m.

NOTE 2 The low EMD time $t_{E,PICC}$ is defined in ISO/IEC 14443-3/Amendment 4.