INTERNATIONAL STANDARD

ISO/IEC 14443-1

Second edition
2008-06-15

AMENDMENT 1
2012-05-01

Identification cards — Contactless integrated circuit cards — Proximity cards —

Part 1: Physical characteristics

AMENDMENT 1: Additional PICC classes

Cartes d'identification — Cartes à circuit(s) intégré(s) sans contact — Cartes de proximité —

Partie 1: Caractéristiques physiques

AMENDEMENT 1: Classes de PICC additionnelles

Reference number
ISO/IEC 14443-1:2008/Amd.1:2012(E)

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Published in Switzerland

Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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Amendment 1 to ISO/IEC 14443-1:2008 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Cards and personal identification*.

Identification cards — Contactless integrated circuit cards — Proximity cards —

Part 1: Physical characteristics

AMENDMENT 1: Additional PICC classes

Page 1, Normative references

Replace “ISO/IEC 10373-6” with “ISO/IEC 10373-6:2011”.

Add the following normative reference:

“ISO/IEC 14443-2, *Identification cards — Contactless integrated circuit cards — Proximity cards — Part 2: Radio frequency power and signal interface*”

Page 2, 4.4

Replace the paragraph with the following:

“If the PICC meets the requirements of one particular class as specified in Annex A, then the PICC, whichever form the PICC has according to 4.1, shall continue to operate as intended after continuous exposure to a magnetic field of an average level of 4/3 times H_{max} at 13,56 MHz as specified in ISO/IEC 14443-2:2010/Amd.2:—[1)], 6.2 for this class. The averaging time is 30 seconds and the maximum level of the magnetic field is limited to 8/5 times H_{max}.

If the PICC does not claim to meet the requirements of one particular class as specified in Annex A, then the PICC, whichever form the PICC has according to 4.1, shall continue to operate as intended after continuous exposure to a magnetic field of an average level of 10 A/m (rms) at 13,56 MHz. The averaging time is 30 seconds and the maximum level of the magnetic field is limited to 12 A/m (rms).”

Page 3, Annex A

Replace Annex A with the following:

1) To be published.

Annex A
(normative)

PICC class definitions

A.1 "Class 1"

A "Class 1" PICC shall fulfil the requirements in A.1.1 and A.1.2. The support of "Class 1" PICCs is mandatory for PCDs.

A.1.1 Antenna location

The antenna of a "Class 1" PICC shall be located within a zone defined by two rectangles, as specified in Figure A.1:

— external rectangle: 81 mm × 49 mm;

— internal rectangle: 64 mm × 34 mm, centered in the external rectangle, with 3 mm corner radii;

except for the connections to the ends of the antenna coil, with a maximum area of 300 mm^2.

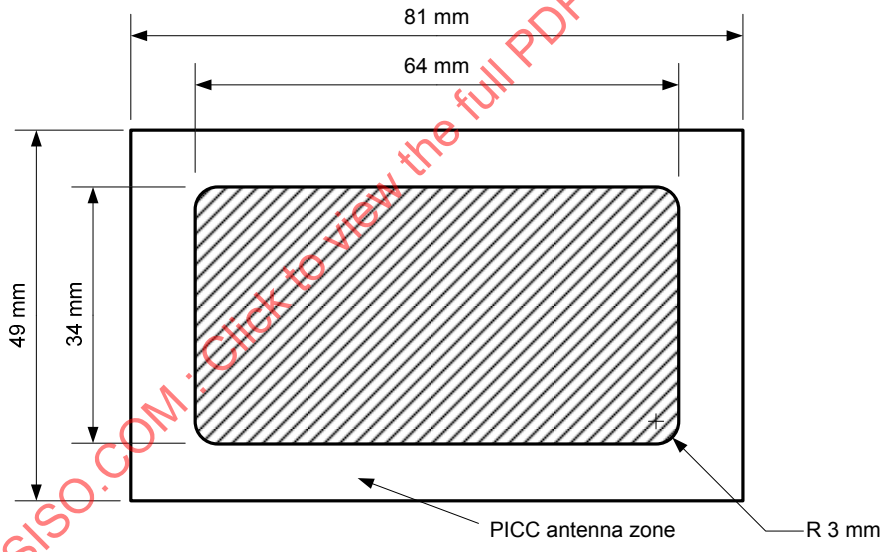

Figure A.1 — Location of the antenna of the "Class 1" PICC

The antenna of a PICC with ID-1 dimensions (as defined in ISO/IEC 7810 or ISO/IEC 15457-1) should be centered.

A.1.2 Electrical requirement

The "Class 1" PICC shall also pass the PICC maximum loading effect test defined in ISO/IEC 10373-6:2011/Amd.1:2012, 7.2.4.

A.2 “Class 2”

A “Class 2” PICC shall fulfil the requirements in A.2.1 and A.2.2. The support of “Class 2” PICCs is mandatory for PCDs.

A.2.1 Antenna location

The antenna of a “Class 2” PICC shall be located within a zone defined by two rectangles, as specified in Figure A.2:

— external rectangle: 81 mm × 27 mm;

— internal rectangle: 51 mm × 13 mm, located at 7 mm and 8,5 mm from the external rectangle, with 3 mm corner radii;

except for the connections to the ends of the antenna coil, with a maximum area of 300 mm^2.

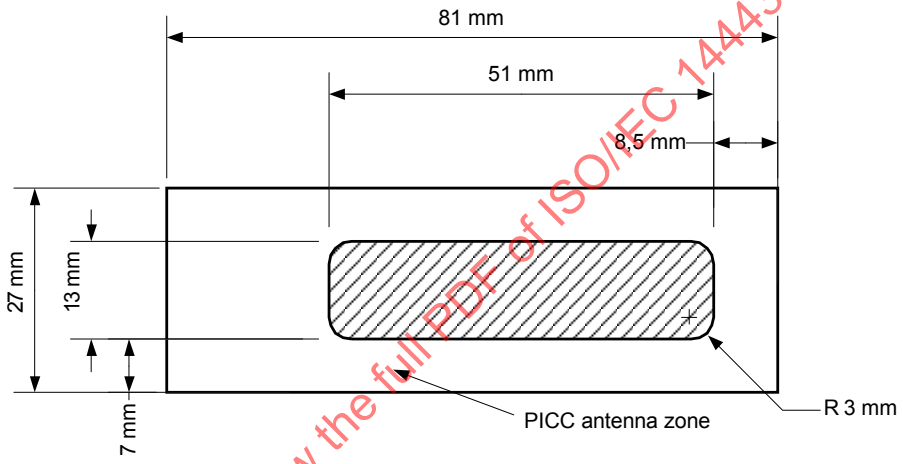

Figure A.2 — Location of the antenna of the “Class 2” PICC

A.2.2 Electrical requirement

The “Class 2” PICC shall also pass the PICC maximum loading effect test defined in ISO/IEC 10373-6:2011/Amd.1:2012, 7.2.4.

A.3 “Class 3”

A “Class 3” PICC shall fulfil the requirements in A.3.1 and A.3.2. The support of “Class 3” PICCs is mandatory for PCDs.

A.3.1 Antenna location

The antenna of a “Class 3” PICC shall be located within a zone defined by either:

— external rectangle: 50 mm × 40 mm;

— internal rectangle: 35 mm × 24 mm, centered in the external rectangle, with 3 mm corner radii;

or

— external circle with diameter 50 mm;

— internal circle with diameter 32 mm, concentric with the external circle;

as specified in Figure A.3, except for the connections to the ends of the antenna coil, with a maximum area of 300 mm^2.

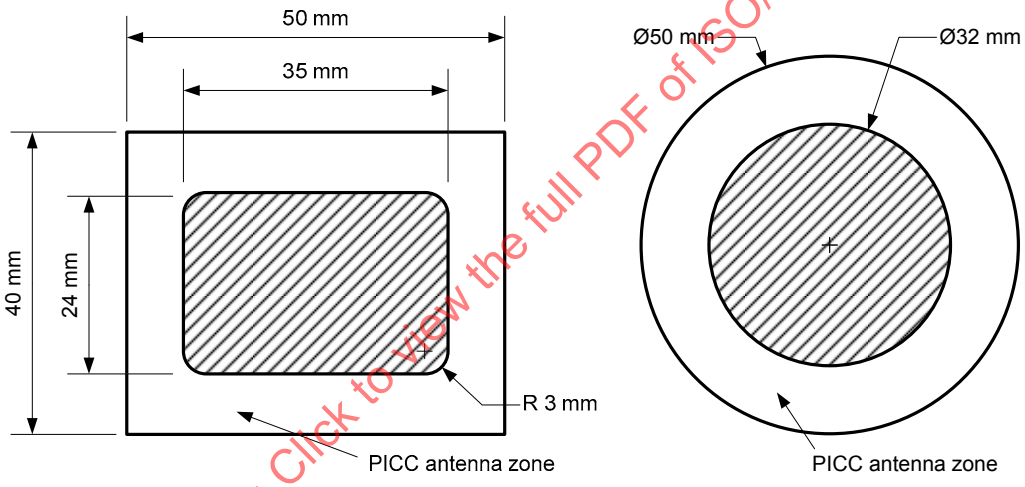

Figure A.3 — Location of the antenna of the “Class 3” PICC

A.3.2 Electrical requirement

The “Class 3” PICC shall also pass the PICC maximum loading effect test defined in ISO/IEC 10373-6:2011/Amd.1:2012, 7.2.4.

A.4 “Class 4”

A “Class 4” PICC shall fulfil the requirements in A.4.1 and A.4.2. The support of “Class 4” PICCs is optional for PCDs.

A.4.1 Antenna Location

The antenna of a “Class 4” PICC shall be located within a zone defined by either:

— external rectangle: 50 mm × 27 mm;

— internal rectangle: 35 mm × 13 mm, centered in the external rectangle, with 3 mm corners radii;

or

— external circle with diameter 41 mm;

— internal circle with diameter 24 mm, concentric with the external circle;

as specified in Figure A.4, except for the connections to the ends of the antenna coil, with a maximum area of 300 mm^2.

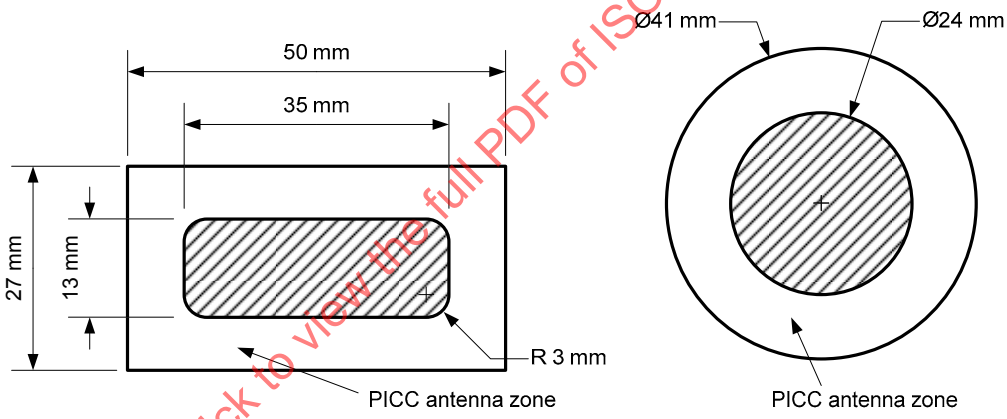

Figure A.4 — Location of the antenna of the “Class 4” PICC

A.4.2 Electrical requirement

The “Class 4” PICC shall also pass the PICC maximum loading effect test defined in ISO/IEC 10373-6:2011/Amd.1:2012, 7.2.4.