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Information technology — Radio frequency identification for item management — RFID Emblem

La technologie d'information — l'identification de radiofréquence pour la direction d'article — RFID Emblème

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

Technical Committee ISO/IEC JTC 1/SC 31, *Automatic identification and data capture techniques*, Working Group 4, *Radio frequency identification* prepared ISO/IEC 29160.

Information technology — Radio frequency identification for item management — RFID Emblem

1 Scope

RFID is a technology that touches all aspects of the Supply Chain from manufacturing all the way to the end use consumer. It is important that for industrial users, retailers and consumers to know when an RFID tag is present. To this end this International Standard prescribes an easily identified visual guide or emblem that indicates the presence of RFID. The emblem provides the public a readily identifiable method to inform users of the presence of RFID. Additionally the wide range of RFID tags (frequency, protocol and data structure) adds a complication that is addressed by the inclusion of an RFID index that provides specific information about compliant tags and interrogators. Successful reading of RFID tags requires knowledge the frequency, protocol and data structure information provided by the RFID index.

The RFID emblem provides a visible identification of RFID transponders, interrogators, and tagged items. Visible signs inform consumers, whether an item or product contains an RFID tag. Therefore this meets one of the main requirements for consumer privacy protection.

The emblem is a public domain object intended to augment rather than replace other emblems and logos such as recycling and CE. The RFID emblem requires no fee for use nor does it have any membership or other use restriction or requirement, other than compliance with this International Standard.

This International Standard addresses the design and use of the RFID Emblem. It does not address location of the Emblem on a label. Specific placement requirements are left to application standards developers.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 7816-5, *Identification cards -- Integrated circuit cards -- Part 5: Registration of application providers*

ISO/IEC 14443 (all parts), *Identification cards - Contactless integrated circuit(s) cards - Proximity cards*

ISO/IEC 15693 (all parts), *Identification cards -- Contactless integrated circuit cards -- Vicinity cards*

ISO 17363, *Supply chain applications of RFID - Freight containers*

ISO 17364, *Supply chain applications of RFID - Returnable transport items*

ISO 17365, *Supply chain applications of RFID - Transport units*

ISO 17366, *Supply chain applications of RFID - Product packaging*

ISO 17367, *Supply chain applications of RFID - Product tagging*

ISO/IEC 18000-2, *Information technology — Radio frequency identification for item management — Part 2: Parameters for air interface communications below 135 kHz*

ISO/IEC 18000-3, Information technology — *Radio frequency identification for item management — Part 3: Parameters for air interface communications at 13,56 MHz*

ISO/IEC 18000-6, Information technology — *Radio frequency identification for item management — Part 6: Parameters for air interface communications at 860 MHz to 960 MHz*

ISO/IEC 18000-7, Information technology — *Radio frequency identification for item management — Part 7: Parameters for active air interface communications at 433 MHz*

ISO/IEC 19762-1, *Information technology — AIDC techniques — Harmonized vocabulary — Part 1: General terms relating to Automatic Identification and Data Capture (AIDC)*

ISO/IEC 19762-3, *Information technology — AIDC techniques — Harmonized vocabulary — Part 3: Radio-Frequency Identification (RFID)*

AIM Global Standard for the use of the AIM RFID Emblem™ and Index to identify RFID-enabled labels

EPCglobal™ Tag Data Standards

3 Terms and definitions

For the purposes of this document the terms and definitions, abbreviations, and symbols given in ISO/IEC 19762, *Information Technology – AIDC techniques – Harmonized vocabulary (Parts 1 and 3)* apply.

4 The RFID Emblem

The RFID Emblem's genesis was the AIM RFID Emblem, developed by the AIM Global RFID Experts Group (REG). The RFID Emblem consists of a unique, public domain Emblem with a two-character code (RFID Index) to indicate the frequency range and in certain cases, the data structure contained within the encoded RFID transponder. A generic emblem without the RFID Index is permitted. Due to the incompatibility of different types of RFID the use of the generic emblem is discouraged.

The RFID Emblem may be used in conjunction with other logos or indicia that indicate specific applications of RFID.

4.1 RFID Index

Two-character codes are used to identify the frequency, the air interface protocol, the defining agency for the data, and the data on the tag. This is referred to as the RFID Index. The first character defines the frequency, air interface protocol and defining authority, the second character defines the data structure.

To help installation planners identify encoding or reading equipment suitable for a particular frequency and data structure, a "generic" code with an asterisk (*) as the second character is assigned for each grouping. This code shall only be used on interrogators and shall not be used on labels or tags. Annex A shows currently assigned two character codes in Annex A. Codes not currently assigned are reserved for future use.

4.2 Representation

The two representations of the RFID Emblem are dark-on-light and light-on-dark as illustrated below. Examples of the RFID Emblem for use on RFID-enabled printers/encoders and interrogators, and for use on labels are also illustrated.

Figure 1 illustrates the RFID Emblem. Earlier forms and representations of the emblem are not compliant with this International Standard.

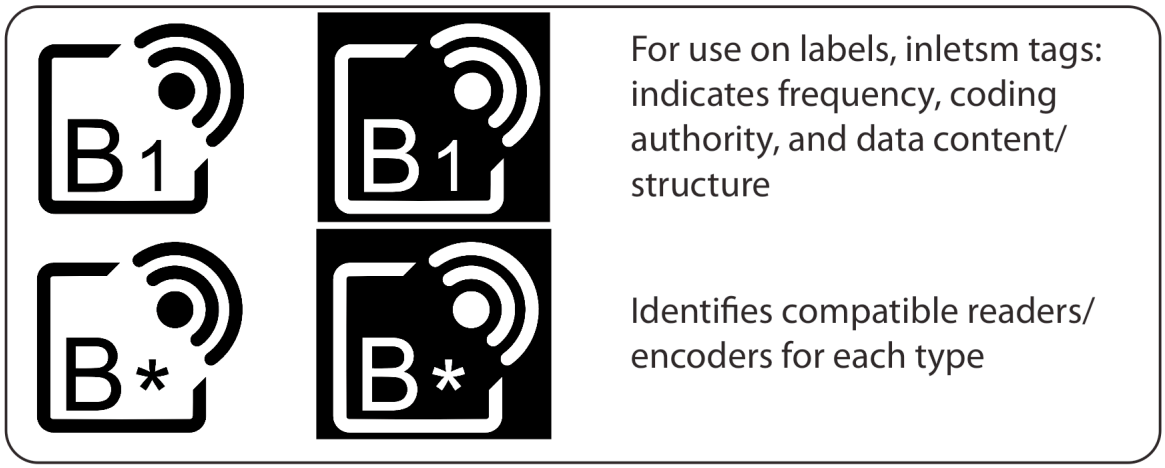

Figure 1 – Examples of the RFID Emblem

Either form of the emblem may be used; the form which most visually striking on the printed RFID-enabled label material or tag should be used.

The RFID Emblem may also be engraved or embossed in the covering of an RFID tag or item containing an RFID transponder.

As described in Clause 4.5 and Figure 2 a generic emblem with the characters “RFID” is also defined for transponders and interrogators with not standardised communication protocols and/or not standardised data structures.

4.3 Size

The Emblem should be printed no smaller then 14 mm by 13 mm, in any colour. There shall be a minimum 3 mm clear, unprinted area around the Emblem. If direct marking on small components/products a smaller emblem may be used but in no case shall the emblem be smaller than 5 mm square. When represented in a low contrast form, it should be large enough to be easily recognizable under typical use conditions.

Design graphics for the RFID emblem are shown in Annex B.

4.4 Placement

Placement of the RFID Emblem shall be determined by an appropriate application standard. In the absence of an appropriate application standard, the Emblem shall be placed such that it is easily visible to those trying to read the RFID tag or label. To improve readability, the RFID Emblem should be located near the actual transponder.

4.5 Using the RFID Emblem

The RFID Emblem is free to use by any RFID label, tag, encoder or interrogator manufacturer and companies printing or using RFID labels and tags who self-certify their compliance to the assignments of Table A.1.

Manufacturers of RFID equipment who do not comply with the Table A.1 assignments are free to use the following graphic to denote “RFID Inside”.

Figure 2 – Graphic for generic RFID equipment

Large, high-quality (300 dpi) graphics of the RFID Emblem for all current assignments are available at: https://www.aimglobal.org/estore/ProductDetails.aspx?productID=286. These graphics may be resized to meet user needs.

Graphic files are available in bmp, jpg, eps and pcx formats. Additional formats will be made available upon request.

4.6 Restrictions on use

The RFID Emblem shall not be modified in any way.

Ad hoc and "internal use only" assignments of two-character codes in conjunction with the RFID Emblem are prohibited.

5 Maintenance

As more standards and user applications evolve, additional index assignments will be made. Corresponding graphics will be made available for download from the AIM Global website.

The ANSI Accredited Standards Committee, AIM Global, through its RFID Experts Group (REG) serves as the registrar for this International Standard.

5.1 Requesting an Index Assignment

Anyone may request additional index assignments by submitting the application form shown in Annex C. Requests should be addressed to ISO_IEC_29160_RegistrationAuthority@aimglobal.org.

The completed information from Annex C shall be provided for all requests.

5.2 Criteria for Additional Index Assignments

- The technology standard(s) shall be stable.
- The issuer of the technology standard(s) shall be an internationally recognized standards-setting organization.
- The data authority shall be a widely recognized coding authority.
- There is a demonstrated need for the assignment.

Annex A
(normative)

RFID Index

Table A.1 – Two character code assignments for the RFID Emblem

2-Character Printed Code	Transponder Frequency	Air Interface Protocol	Data Structure Defining Agency	Data Structure
RFID	Mutually agreed	Mutually agreed	Mutually agreed	Indicates transponders and interrogators
A*	433 MHz	ISO/IEC 18000-7	ISO JWG	Indicates compatible interrogators
A0	433 MHz	ISO/IEC 18000-7	(RFU)	Reserved for future use
A1	433 MHz	ISO/IEC 18000-7	ISO 17363	License plate ID plus optional application data
A2	433 MHz	ISO/IEC 18000-7	(RFU)	Reserved for future use
A3	433 MHz	ISO/IEC 18000-7	(RFU)	Reserved for future use
Not Listed	433 MHz	OTHER APPLICATION AND AIR INTERFACE NOT LISTED		
B*	860-960 MHz	ISO/IEC 18000-6 C	ISO JWG	Indicates compatible interrogators
B0	860-960 MHz	ISO/IEC 18000-6 C	(RFU)	Reserved for future use
B1	860-960 MHz	ISO/IEC 18000-6 C	ISO 17364	License plate ID plus optional application data
B2	860-960 MHz	ISO/IEC 18000-6 C	(RFU)	Reserved for future use
B3	860-960 MHz	ISO/IEC 18000-6 C	ISO 17365	License plate ID plus optional application data
B4	860-960 MHz	ISO/IEC 18000-6 C	(RFU)	Reserved for future use
B5	860-960 MHz	ISO/IEC 18000-6 C	ISO 17366	License plate ID plus optional application data
B6	860-960 MHz	ISO/IEC 18000-6 C	(RFU)	Reserved for future use
B7	860-960 MHz	ISO/IEC 18000-6 C	ISO 17367	License plate ID plus optional application data
B8	860-960 MHz	ISO/IEC 18000-6 C	ISO 17363	License plate ID plus optional application data
Not Listed	860-960 MHz	OTHER APPLICATION AND AIR INTERFACE NOT LISTED		
E*	860-960 MHz	ISO/IEC 18000-6 C	EPCglobal †	Indicates compatible interrogators
E0	860-960 MHz	ISO/IEC 18000-6 C	EPCglobal †	GID General Identifier
E1	860-960 MHz	ISO/IEC 18000-6 C	EPCglobal †	SGTIN Serialized GTIN
E2	860-960 MHz	ISO/IEC 18000-6 C	EPCglobal †	SSCC Serial Shipping Container Code
E3	860-960 MHz	ISO/IEC 18000-6 C	EPCglobal †	SGLN Serialized Global Location Number
E4	860-960 MHz	ISO/IEC 18000-6 C	EPCglobal †	GRAI Global Returnable Asset Identifier
E5	860-960 MHz	ISO/IEC 18000-6 C	EPCglobal †	GIAI Global Individual Asset Identifier
E6	860-960 MHz	ISO/IEC 18000-6 C	EPCglobal †	Reserved for future use
E7	860-960 MHz	ISO/IEC 18000-6 C	EPCglobal †	Reserved for future use
Not Listed	860-960 MHz	OTHER APPLICATION AND AIR INTERFACE NOT LISTED		

Table A,1 – Two character code assignments for the RFID Emblem (continued)

2-Character Printed Code	Transponder Frequency	Air Interface Protocol	Data Structure Defining Agency	Data Structure
H*	13.56 MHz	ISO/IEC 18000-3 M3	ISO JWG	Indicates compatible interrogators
H0	13.56 MHz	ISO/IEC 18000-3 M3	ISO 17364	License plate ID plus optional application data
H1	13.56 MHz	ISO/IEC 18000-3 M3	ISO 17365	License plate ID plus optional application data
H2	13.56 MHz	ISO/IEC 18000-3 M3	ISO 17366	License plate ID plus optional application data
H3	13.56 MHz	ISO/IEC 18000-3 M3	ISO 17367	License plate ID plus optional application data
Not Listed	13.56 MHz	OTHER APPLICATION AND AIR INTERFACE NOT LISTED		
L*	<135 kHz	ISO/IEC 18000-2	ISO JWG	Indicates compatible interrogators
L0	<135 kHz	ISO/IEC 18000-2	ISO 17364	License plate identification only
L1	<135 kHz	ISO/IEC 18000-2	(RFU)	Reserved for future use
L2	<135 kHz	ISO/IEC 18000-2	ISO 17367	License plate identification only
L3	<135 kHz	ISO/IEC 18000-2	(RFU)	Reserved for future use
Not Listed	<135 kHz	OTHER APPLICATION AND AIR INTERFACE NOT LISTED		
M*	860-960 MHz	ISO/IEC 18000-6 C	US DoD	Indicates compatible interrogators
M0	860-960 MHz	ISO/IEC 18000-6 C	(RFU)	Reserved for future use
M1	860-960 MHz	ISO/IEC 18000-6 C	US DoD	CAGE plus serial number
M2	860-960 MHz	ISO/IEC 18000-6 C	(RFU)	Reserved for future use
N*	13.56 MHz	ISO/IEC 14443	ISO/IEC 7816	Indicates compatible interrogators
N0	13.56 MHz	ISO/IEC 14443	ISO/IEC 7816	Application Specific
N1	13.56 MHz	ISO/IEC 14443-2 Type A	ISO/IEC 7816	Application Specific
N2	13.56 MHz	ISO/IEC 14443-2 Type B	ISO/IEC 7816	Application Specific
P*	13.56 MHz	ISO/IEC 15693	ISO/IEC 7816	Indicates compatible interrogators
P0	13.56 MHz	ISO/IEC 15693-2	ISO/IEC 7816	Application Specific
Not Listed	OTHER FREQUENCY, APPLICATION AND AIR INTERFACE NOT LISTED			

† See EPC™ Tag Data Standards Version 1.3

NOTE: All assignments not otherwise indicated are reserved for future use.

Please refer to the AIM Global website (https://www.aimglobal.org/estore/ProductDetails.aspx?productID=286) for the complete list of current assignments and downloadable graphics.

Annex B
(normative)

Drawings

Dimensions in millimetres

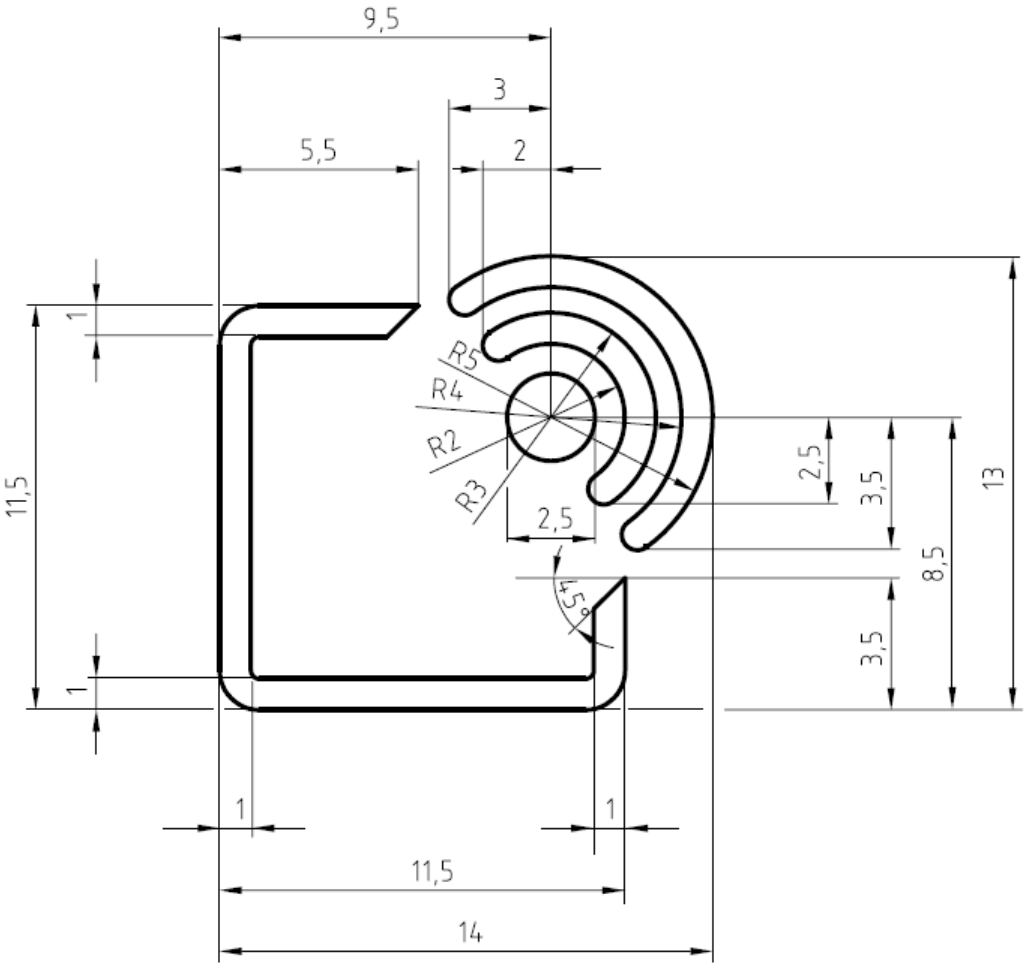

Figure B.1 – Construction of RFID emblem's frame (cited unit of measurement is millimetres)

Dimensions in millimetres

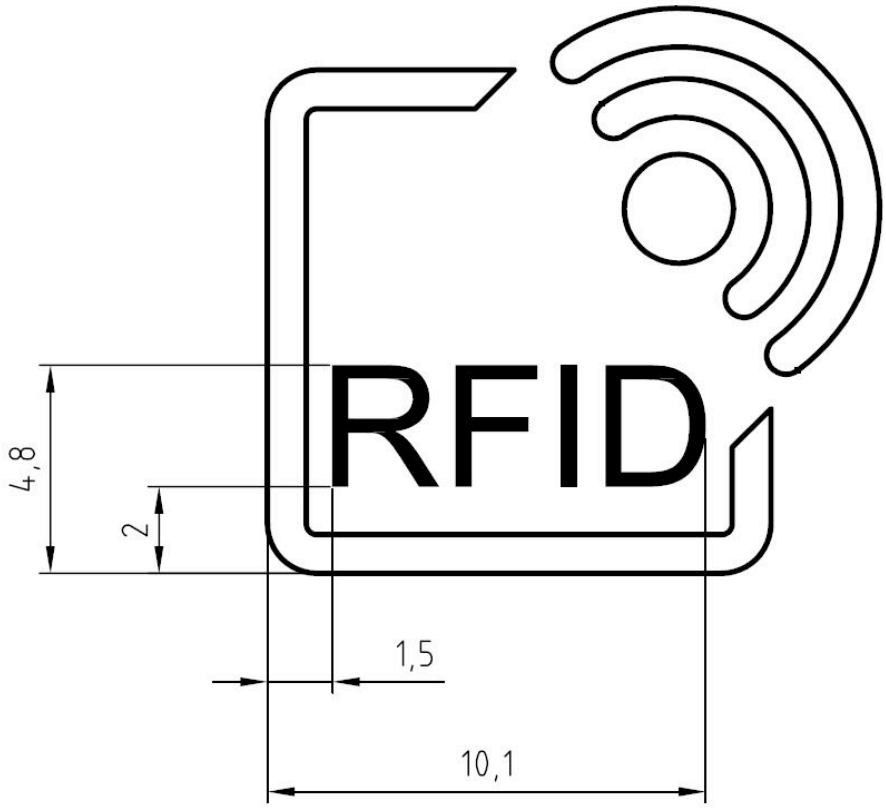

Figure B.2 – General purpose RFID emblem (cited unit of measurement is millimetres)

Figure B.3 – Filled general purpose RFID emblem

NOTE: Font is Arial. Character size for *RFID* is 2.8 mm.

Dimensions in millimetres

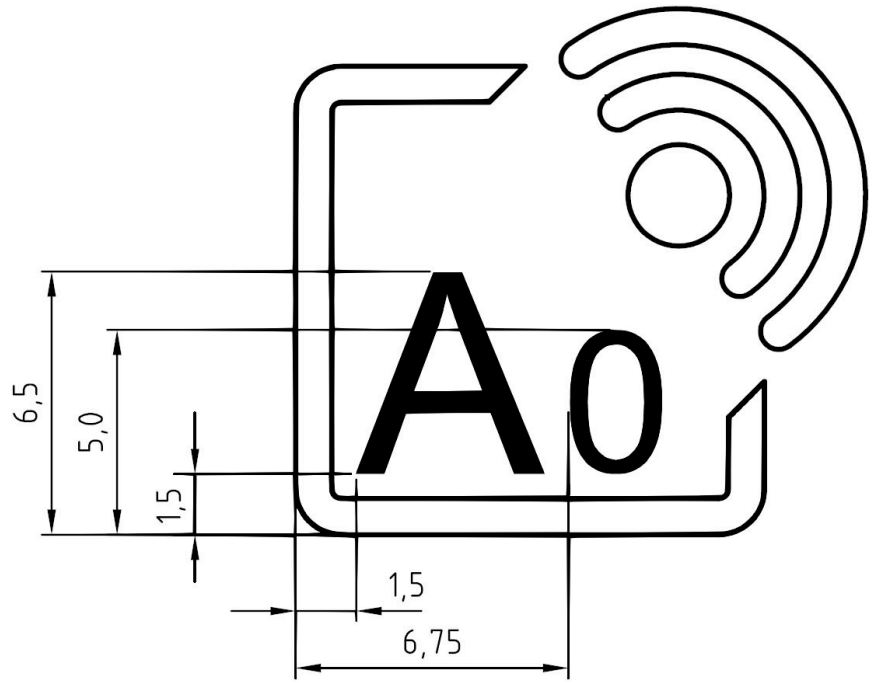

Figure B.4 – RFID emblem with two-character code (cited unit of measurement is millimetres)

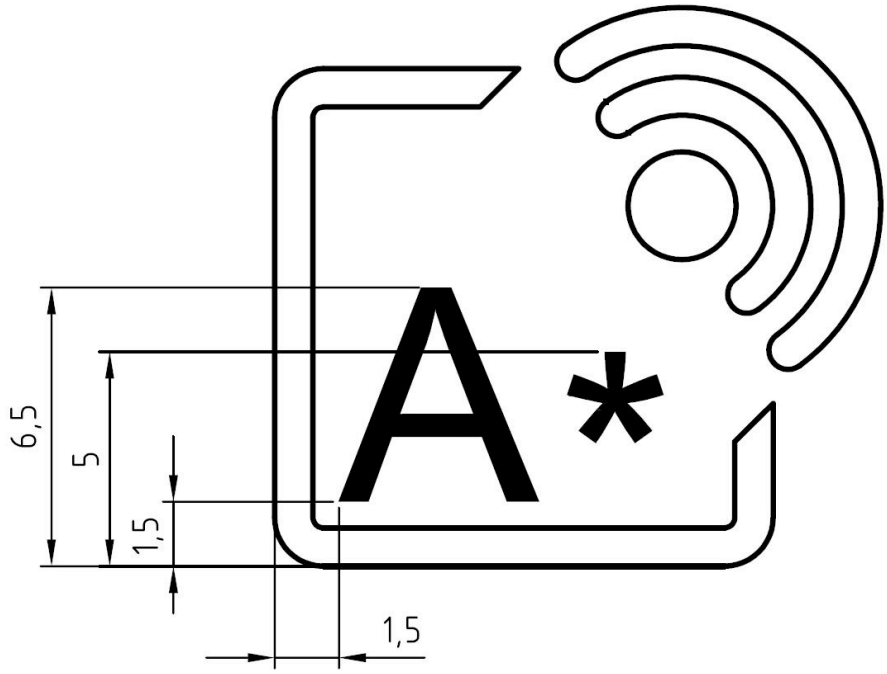

Figure B.5 – RFID emblem with interrogator code (cited unit of measurement is millimetres)

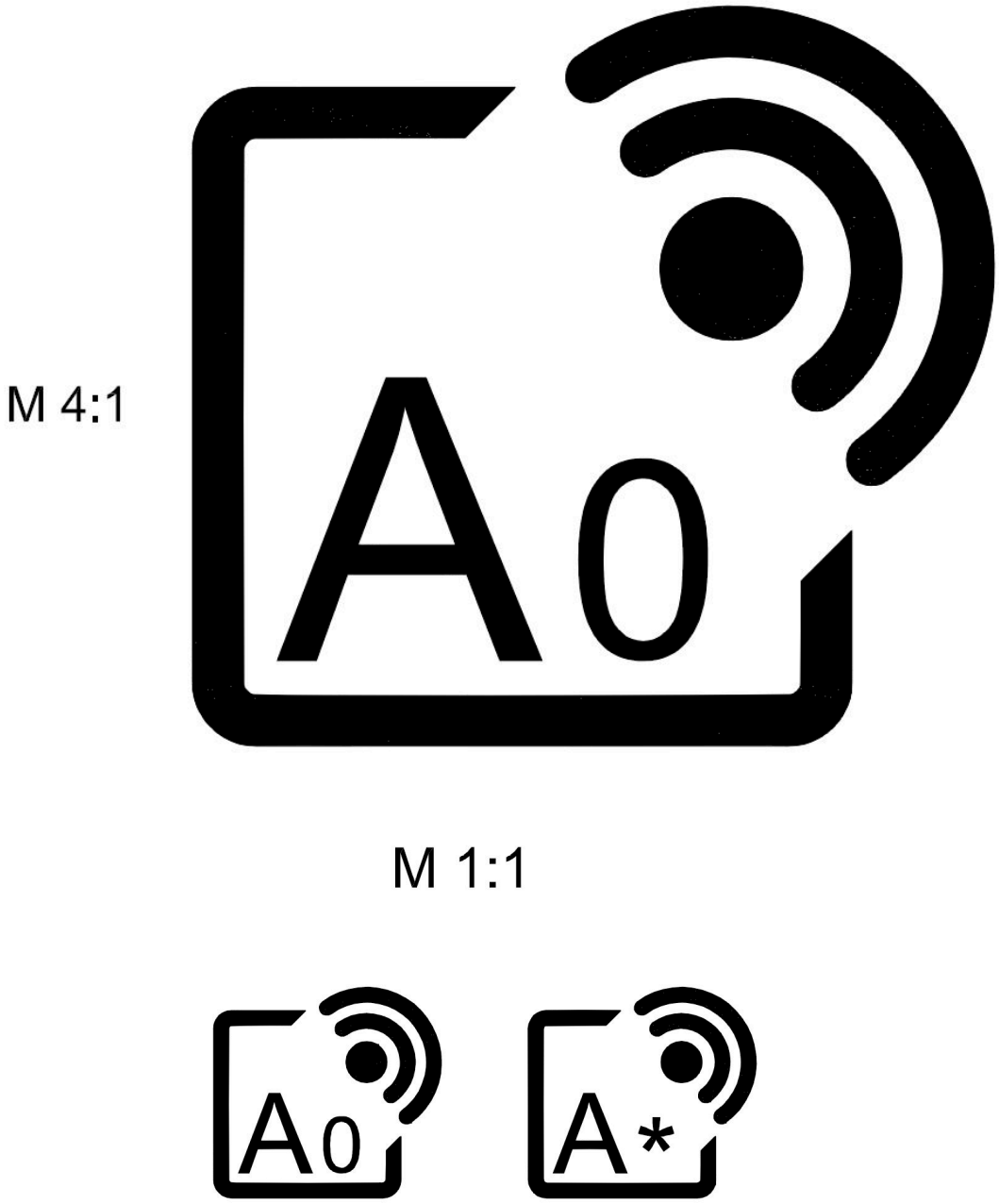

Figure B.6 – Filled RFID emblem with two-character code

Annex C
(normative)

RFID Index assignment request form

A. TO BE COMPLETED BY APPLICANT (Application Administrator)

Name of organisation (maximum 40 characters). Abbreviate where necessary.		
Address (maximum 60 characters), starting street, city. Abbreviate where necessary.		
Principal contact in organisation		Position
E-mail	Telephone number	Fax number
Legal status of organisation		
Full address for correspondence/billing		
Define the frequency/frequencies (or frequency range) of the tag/interrogator technology		
Define whether the tag/interrogator technology is active, passive, or battery-assisted passive.		
Define the air interface protocol standard		
Identify the data structure defining agency.		
Define the data content/data structure standard(s) (including section references)		
Define the data content size in terms of the number of bits in the data content		
Describe the nature of the data content		
Describe why the assignment(s) is needed (e.g. where will this tag type and data content be used and who will use it).		

We hereby apply for the assignment identified above to be included within the RFID Index, and state that the use of the RFID Emblem will be in accordance with ISO/IEC 29160.

Signature/date

Please return application to:

The ISO/IEC 29160 Registration Authority

(E): ISO_IEC_29160_RegistrationAuthority@aimglobal.org

Annex D
(informative)

Other RFID markings

D.1 Industry-specific marking

Certain industry programs have adopted programs based upon organizational membership, e.g. EPCglobal, NFC, and others. Others have been approved by governmental entities, e.g. JAISA. Details of one of these organization's markings are shown below. Other organizations interested in being included in this annex should contact JTC 1/SC 31/WG 4.

Markings other than the RFID Emblem do not announce RFID for any others than those participating in their programs. The RFID Emblem does not require any organizational membership. These other RFID markings are not replacements for the RFID Emblem.

D.2 EPCglobal

D.2.1 EPCglobal seal

The use of the EPCglobal seal is shown in Figure D.1 and is restricted to EPCglobal subscribers. The use of the EPCglobal seal is to inform that an EPC tag is present on or within the packaging of the object(s). The EPCglobal seal is provided by EPCglobal Inc, an independent, not-for-profit standards organisation for use by EPCglobal Subscribers. EPCglobal Inc promotes responsible use of RFID and EPC technologies by working with Subscriber companies, such as the retail-outlet/store who is selling the product and the manufacturer who made the product.

To ensure visibility on the EPCglobal Network™, subcontracted manufacturers shall subscribe to EPCglobal.

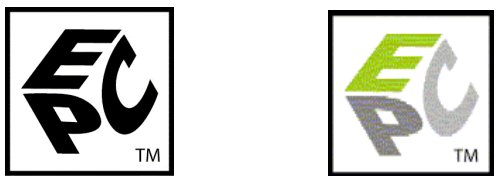

Figure D.1 –EPCglobal seal

Use on tagged objects: The EPCglobal seal may be used commercially when its use complies with ALL of the following conditions:

a. the EPCglobal seal is affixed to a logistics unit containing (or possibly containing) EPC/RFID tags,

b. the EPC/RFID tag contains a valid EPC Manager Number,

c. the valid EPC Manager Number belongs to an active subscriber to any global EPCglobal Member Organization and

d. the tag encoding is based on the published EPCglobal Tag Data Standard.

Also, if the seal is used with a supply chain supported by GSMP standards, the placement of the seal on the logistics unit shall comply with the published GS1 General Specification.

The EPCglobal Tag Notification Brand Guidelines are available upon request and focus on the responsible use of the EPC and RFID technology for consumer items. Under the auspices of EPCglobal Inc, these Guidelines have been followed since January 1, 2005 and will continue to evolve as advances in EPC and its applications are made and consumer research is conducted. As EPC evolves, so too will new issues. EPC participants are committed to addressing these issues and engaging in a dialogue about them with interested parties.

The guidelines are as follows:

1. Consumer Notice

Consumers will be given clear notice of the presence of EPC on products or their packaging and will be informed of the use of EPC technology. This notice will be given through the use of an EPC logo or identifier on the products or packaging.

2. Consumer Choice

Consumers will be informed of the choices that are available to discard or remove or in the future disable EPC tags from the products they acquire. It is anticipated that for most products, the EPC tags would be part of disposable packaging or would be otherwise discardable. EPCglobal, among other supporters of the technology, is committed to finding additional efficient, cost effective and reliable alternatives to further enable customer choice.

3. Consumer Education

Consumers will have the opportunity easily to obtain accurate information about EPC and its applications, as well as information about advances in the technology. Companies using EPC tags at the consumer level will cooperate in appropriate ways to familiarise consumers with the EPC logo and to help consumers understand the technology and its benefits. EPCglobal would also act as a forum for both companies and consumers to learn of and address any uses of EPC technology in a manner inconsistent with these Guidelines.

4. Record Use, Retention and Security

The Electronic Product Code does not contain, collect or store any personally identifiable information. As with conventional barcode technology, data, which is associated with EPC will be collected, used, maintained, stored and protected by the EPCglobal member companies in compliance with applicable laws. Companies will publish, in compliance with all applicable laws, information on their policies regarding the retention, use and protection of any personally identifiable information associated with EPC use.

Information on EPCglobal seal can be secured at http://www.epcglobalinc.org/public/ppsc_guide/. Information about the EPCglobal seal for consumers can be secured at: http://www.discoverrfid.org.

D.2.2 EPC Certification (Hardware and Software)

The EPCglobal Certification Program is a standards-based compliance and interoperability-testing program, developed by the EPCglobal community to provide a neutral and authoritative source for testing hardware and software products and providing information regarding certified products, and the vendors who manufacture them. The purpose of this program is to enable end-users to easily access reliable information regarding Electronic Product Code™ (EPC) hardware including Radio Frequency Identification (RFID) silicon chips, interrogators, interrogator modules, and interrogators with embedded reader modules and software programs that comply with one or more of the EPCglobal data format and interface standards. End-users can be confident that the certified products, which they implement, will work in predictable ways as defined by EPCglobal Standards, such as the UHF Gen 2 Air Interface Protocol Standard.

The EPCglobal compliance testing verifies that EPC hardware and software products comply with EPCglobal Standards. The interoperability program builds on the compliance program.

Hardware devices participating in the interoperability testing shall use components that are certified for compliance. The EPCglobal hardware interoperability testing demonstrates the ability of different compliance-certified tags to work with different compliance-certified interrogators or printer/encoders.

Hardware and software carrying the EPCglobal Certification Mark, see Figure D.2, has been rigorously tested by an independent laboratory and is certified to comply with EPCglobal Standards and/or interoperates with other certified products, thus assuring that the Certified Product will work predictably in a pilot or implementation.

Products that have been certified by EPCglobal will bear the EPCglobal Compliance Certification Mark and/or the EPCglobal Interoperability Certification Mark.

Each EPCglobal Certification Mark is assigned to a specific hardware or software product and includes an 18-digit Global Service Relation Number (GSRN) that is unique to that product and the exact test that it successfully completed. Information on EPCglobal certification can be secured at http://www.epcglobalinc.org/certification/

Figure D.2 –EPCglobal RFID compliance emblem

D.3 Japan Automatic Identification Systems Association (JAISA)

D.3.1 RFID Interrogators used in general environment

D.3.1.1 Background and purpose

The Ministry of Internal Affairs and Communications (MIAC) Japan has published “The guidelines about influence of electric waves on medical devices” based on the following research and feasibility study.

— Influence of mobile phones (2001)

— Influence of contactless card systems and EAS (2002)

— Influence of EAS, wireless LAN, gate type RFID interrogator and handy type RFID interrogator (2003)

After the submission of MIAC guidelines, Japan Automatic Identification Systems Association (JAISA) started their own study and published the guideline for installing RFID systems in the industries to prevent the influence of RFID interrogator electric waves on medical devices.

This guideline is already published and used in Japanese industries.

D.3.1.2 Operational guideline for RFID interrogators used in general environment

D.3.1.2.1 Terms and definitions

(1) Gate type RFID interrogators: One or more antennae is used to read information in the RF tag when items pass through the gate.

(2) Handheld type RFID interrogators: The user holds the RFID interrogator in their hand and operates it, regardless of the shape. This category includes card type interrogators that function when inserted into a slot in a personal computer or a handheld terminal on the PDA (Personal Digital Assistant) or similar

(3) Stationary type RFID interrogators: Basically used where they are not required to be moved frequently. Gate type RFID interrogators are not included in this category.

(4) Module type RFID interrogators: Function when they are built into a data writer, printer, etc.

D.3.1.2.2 Product labelling

Specialized companies shall attach a sticker as shown in Figure D.3 to an externally visible location on the gate type RFID interrogators and other RFID interrogators to clearly indicate them to persons carrying medical devices.

NOTE 1: This marking (sticker) is intended to indicate RFID interrogators, not RF tags.

NOTE 2: Two marking design is prepared and selection of marking is depend on the users.

Type A Type B

Figure D.3 − JAISA Sticker

D.3.1.2.3 Applicable persons

“Designers/manufacturers” that design and manufacture RFID interrogators and “specialized companies” that undertake sales, installation, operation, and maintenance of RFID interrogators are subject to this Operational Guideline.

D.3.1.2.4 Basic concept

Designers/manufacturers and specialized companies are responsible for operation of this Operational Guideline based on self-management.

Designers/manufacturers shall instruct specialized companies so that this Operational Guideline is thoroughly implemented.

D.3.1.2.5 Notification for specialized companies

Designers/manufacturers shall notify the specialized companies of the guideline issued by MIC and this Operational Guideline.

D.3.1.2.6 Communication

Designers/manufacturers, specialized companies, and JAISA shall mutually communicate to ensure safety of RFID interrogators and to improve reliability. Information to be shared shall include problems found in the current operation.

D.3.2 RFID Interrogators Used in Controlled area

D.3.2.1 Background and purpose

“Special RFID interrogators for controlled areas” indicate RFID interrogators used only in controlled and restricted areas where general persons are not allowed to enter, such as production processes in a plant and warehouses where products are stored or shipped.

As it is basically inconceivable that persons carrying implantable medical devices will unconsciously approach the special RFID interrogators for controlled areas, descriptions of these interrogators are separated from the main text, and prepared as reference material for designers/manufacturers and specialized companies.

Influences from special RFID interrogators for controlled areas on implantable medical devices are described in the report issued by MIC as a reference material.

D.3.2.2 Operational Guideline for RFID Interrogators Used in Controlled area

D.3.2.2.1 Product labelling

Specialized companies shall attach a type C sticker as shown in Figure D.4 to an externally visible location on the special RFID interrogators for controlled areas to clearly indicate their presence.

Figure D.4 – Type C JAISA Sticker in Controlled area

D.3.2.2.2 Notification for specialized companies

Designers/manufacturers shall notify the specialized companies of the guidelines issued by MIC and this reference material. Both parties shall manage the special RFID interrogators for controlled areas to prevent them being taken out of the controlled areas and used in general environment.

D.3.2.2.3 Communication

Designers/manufacturers, specialized companies, and JAISA shall mutually communicate to ensure safety of RFID interrogators and to improve reliability. Information to be shared shall include problems found in the current operation.

Bibliography

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[2] ISO 10241, *International terminology standards — Preparation and layout*

[3] ISO 128-30, *Technical drawings — General principles of presentation — Part 30: Basic conventions for views*

[4] ISO 128-34, *Technical drawings — General principles of presentation — Part 34: Views on mechanical engineering drawings*

[5] ISO 128-40, *Technical drawings — General principles of presentation — Part 40: Basic conventions for cuts and sections*

[6] ISO 128-44, *Technical drawings — General principles of presentation — Part 44: Sections on mechanical engineering drawings*

[7] ISO 31 (all parts), *Quantities and units*

[8] IEC 60027 (all parts), *Letter symbols to be used in electrical technology*

[9] ISO 1000, *SI units and recommendations for the use of their multiples and of certain other units*

[10] *EPC™ Radio Frequency Identity Protocol Class-1 Generation-2 UHF RFID Protocol for Communications at 860 MHz – 960 MHz*