ISO/IEC JTC 1/SC 17
Cards and personal identification
Secretariat: BSI (United Kingdom)

Document type: Disposition of Comments Report

Title: Disposition of comments: FCD ISO/IEC 14443-2:2010/FPDAM3 - Identification cards - Contactless integrated circuit(s) cards - Proximity cards - Part 2: Radio frequency power and signal interface - AMENDMENT 3: Limits of electromagnetic disturbance levels parasitically generated by the PICC

Status:

BACKWARD POINTER: N 3720, N 3721, N 3823, N 3847, N 3849, N 3892, N 3931, N 3932 and N 4044.

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Date of document: 2010-12-23

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Committee URL: http://isotc.iso.org/livelink/livelink/open/jtc1sc17

Disposition of comments on:
FCD ISO/IEC 14443-2:2010/FPDAM3 - Identification cards - Contactless integrated circuit(s) cards - Proximity cards - Part 2: Radio frequency power and signal interface - AMENDMENT 3: Limits of electromagnetic disturbance levels parasitically generated by the PICC

Reference documents:

Ballot is in SC17 N 3932 = WG8 N 1706
Ballot Result is in SC17 N 4044 = WG8 N 1730

Project Editor:
Reinhard Meindl, Austria

The following pages provide the details of the comments and detailed information about their resolutions, how WG8 had resolved each received comment from the FCD Ballot (FPDAM) at the WG8 meeting, held in Takamatsu, Japan, on 2010-09-29/10-01.

WG8 decided by WG8 Resolution 48.07 (contained in WG8 N 1737 = SC17 N 4xxx) to issue the new text of 14443-2/AM3, i.e. WG8 N 1746 R1, for FDIS (FDAM) balloting.

Date: 2010-09-14	Document: **N3932**

1	2	(3)	4	5	(6)	(7)
MB[1]	**Clause No./ Subclause No./ Annex** (e.g. 3.1)	**Paragraph/ Figure/Table/ Note** (e.g. Table 1)	**Type of com-ment**[2]	**Comment (justification for change) by the MB**	**Proposed change by the MB**	**Secretariat observations** on each comment submitted
NL1	10.1		te	Define EMD limits for all classes, in order to make sure not to run into inconsistencies. e.g. EMD limit for class 1 is close to LMA requirements for class 6	Ask PCD manufacturers for EMD limits for classes 2 to 6	Resolved by FR4
NL2	10.2		te	Define EMD limits for all classes, in order to make sure not to run into inconsistencies. e.g. EMD limit for class 1 is close to LMA requirements for class 6	Ask PICC manufacturers for EMD limits for classes 2 to 6	Resolved by FR4

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2 **Type of comment:** **ge** = general **te** = technical **ed** = editorial

NOTE Columns 1, 2, 4, 5 are compulsory.

Template for comments and secretariat observations

Date: 2010-07-13	Document: **SC17 N 3932** **ISO/IEC 14443-2/AMD3 FPDAM (EMD)**

1	2	(3)	4	5	(6)	(7)
MB[1]	**Clause No./ Subclause No./ Annex** (e.g. 3.1)	**Paragraph/ Figure/Table/ Note** (e.g. Table 1)	**Type of com-ment**[2]	**Comment (justification for change) by the MB**	**Proposed change by the MB**	**Secretariat observations** on each comment submitted
JP1	Whole documents		GE	It is not clear at FCD ballot stage whether there are any known patents regarding this specification. Even though ISO/IEC takes no position concerning the evidence, validity and scope of the patents, the patents known at this time should be disclosed by the proposer(s) of EMD.	Disclose the patent list regarding this proposal.	Resolved by Inquiry via WG8 resolution
JP2	Foreword	Last Paragraph	ed	For correction.	Replace “Technical Committee ISO/IEC/TC JTC 1” by “Joint Technical Committee ISO/IEC JTC 1”.	Accepted
JP3	Introduction	1st Paragraph	ed	“GSM”, “UMTS” and “Bluetooth” are trademarks and the trademark notice should be described.	Replace “GSM”, “UMTS” and “Bluetooth” by “GSM®”, “UMTS™” and “Bluetooth®”, respectively and insert the following NOTE at the end of Introduction. NOTE: GSM is a registered trademark of GSM Association. UMTS is a trademark of ETSI (European Telecommunications Standards Institute). Bluetooth is a registered trademark of Bluetooth SIG, Inc.	Resolved by deletion of introduction
JP4	Introduction	2nd Paragraph	ed	For consistency.	Replace “Electro-Magnetic Disturbance” by “electromagnetic disturbance”.	Resolved by JP3
JP5	Cover	Title	ed	For consistency.	Replace “Contactless integrated circuit(s) cards” by “Contactless integrated circuit cards”.	accepted
JP6	Cover	Sub title	ed	For consistency.	Replace “AMENDMENT 3: Limits of electromagnetic disturbance levels” by “AMENDMENT 3: Limits of electromagnetic disturbance levels parasitically generated by the PICC”.	accepted
JP7	10.1, 10.2	Note	ed	For the unit of A/m, (rms) is moved to after A/m (twice)	Replace “*H* is the (rms) value of magnetic field strength in A/m.“ by “*H* is the value of magnetic field strength in A/m (rms).”.	Accepted

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Template for comments and secretariat observations

Date: 2010-07-13	Document: **SC17 N 3932** **ISO/IEC 14443-2/AMD3 FPDAM (EMD)**

1	2	(3)	4	5	(6)	(7)
MB[1]	**Clause No./ Subclause No./ Annex** (e.g. 3.1)	**Paragraph/ Figure/Table/ Note** (e.g. Table 1)	**Type of com-ment**[2]	**Comment (justification for change) by the MB**	**Proposed change by the MB**	**Secretariat observations** on each comment submitted
JP8	10.1		te	$V_{E,PCD}$ is changed without the consensus of SC17/WG8 members. According to the 2ndCD 14443-2:2009/PDAM3.2, $V_{E,PCD}$ was – 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) < $H \leq H_{max}$ But this time, "$V_{E,PCD}$ = 2/3 + 3/H^2 in mV (peak)" is written on ISO/IEC 14443-2:2010/FPDAM 3.	Return to the PCD limit on "2ndCD 14443-2:2009/PDAM3.2"	Accepted
JP9	10.2		te	$V_{E,PICC}$ is changed without the consensus of SC17/WG8 members. According to the 2ndCD 14443-2:2009/PDAM3.2, $V_{E,PICC}$ was – 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) < $H \leq H_{max}$ But this time, "$V_{E,PICC}$ = 2/3 + 3/H^2 in mV (peak)" Is written on ISO/IEC 14443-2:2010/FPDAM 3.	Return to the PICC limit on "2ndCD 14443-2:2009/PDAM3.2"	Accepted
JP10	10.2	2nd Paragraph	te	JNB is afraid that there is a divided interpretation regarding more than two short periods of 16/*fc*. Is the EMD level allowed to exceed $V_{E,PICC}$ during three or more short periods of 16/fc ?	Confirm that the EMD level may exceed $V_{E,PICC}$ during three or more short periods of 16/*fc*.	Resolved by Modified text and adding a illustration of Japan

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DE comments on ISO/IEC 14443-2:2010/FPDAM3 as submitted in sc17n3932

Date: 2010-09-10	Document: **ISO/IEC 14443-2 FPDAM 3**

1	2	(3)	4	5	(6)	(7)
MB[1]	**Clause No./ Subclause No./ Annex** (e.g. 3.1)	**Paragraph/ Figure/Table/ Note** (e.g. Table 1)	**Type of com-ment**[2]	**Comment (justification for change) by the MB**	**Proposed change by the MB**	**Secretariat observations** on each comment submitted
DE 1	Introduction	all paragraphs	ED	Introduction was deleted in PDAM 3.2	Delete Introduction	Resolved by JP
DE2	Titel		ED	Wrong amendment title on page 1.	Delete: ...."parasitically generated by the PICC"	Resolved by JP
DE 3	Symbols	new symbols	te	The limits shall apply for "Class 1" PICCs only.	Replace symbols for EMD limits by: "$V_{E,PICC1}$ EMD limit, "Class 1" PICC $V_{E,PCD1}$ EMD limit, PCD supporting "Class 1"	Resolved by FR4
DE 4	10.1	first paragraph	te	PCD limits of PDAM3.2 shall be used and apply for Class 1.	Replace paragraph by: "The PCD shall not detect any load modulation amplitude below $V_{E,PCD1}$ at a field strength H, when measured as described in ISO/IEC 10373-6/Amd.9. $V_{E,PCD1}$ 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) < $H \leq H_{max}$"	Resolved by JP8
DE 5	10.2	first paragraph	te	PICC limits of PDAM3.2 shall be used and apply for Class 1.	Replace clause by: "The EMD level before PICC data transmission shall be below $V_{E,PICC1}$ 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/Amd.9. $V_{E,PICC1}$ 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) < $H \leq H_{max}$"	Resolved by JP9

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AT comments to ISO/IEC 14443-2:2010/FPDAM3 as submitted in sc17n3932

Date: 16.08.2010	Document: **xxx**

1	2	(3)	4	5	(6)	(7)
MB[1]	**Clause No./ Subclause No./ Annex** (e.g. 3.1)	**Paragraph/ Figure/Table/ Note** (e.g. Table 1)	**Type of com-ment**[2]	**Comment (justification for change) by the MB**	**Proposed change by the MB**	**Secretariat observations** on each comment submitted
AT 1	Introduction	all paragraphs	ED	No introduction for amendments	Delete Introduction	Resolved by JP
AT2	Titel		ED	Wrong amendment title on page 1.	Delete: ...."parasitically generated by the PICC"	Resolved by JP
AT3	Symbols	new symbols	te	EMD limits are requirements for Class 1	Replace symbols for EMD limits by: "$V_{E,PICC1}$ EMD limit, "Class 1" PICC $V_{E,PCD1}$ EMD limit, PCD supporting "Class 1"	Resolved by FR4
AT4	10.1	first paragraph	te	PCD limits of PDAM3.2 shall be used.	Replace paragraph by: "The PCD shall not detect any load modulation amplitude below $V_{E,PCD1}$ at a field strength H, when measured as described in ISO/IEC 10373-6/Amd.9. $V_{E,PCD1}$ 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) < $H \leq H_{max}$"	Resolved by JP8
AT5	10.2	first paragraph	te	PICC limits of PDAM3.2 shall be used.	Replace clause by: "The EMD level before PICC data transmission shall be below $V_{E,PICC1}$ 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/Amd.9. $V_{E,PICC1}$ 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) < $H \leq H_{max}$"	Resolved by JP9

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SC17N3932, ISO/IEC 14443-2:2010/FPDAM 3

Date: 2010-09-07	Document: **SC17N3932**

1	2	(3)	4	5	(6)	(7)
MB[1]	**Clause No./ Subclause No./ Annex** (e.g. 3.1)	**Paragraph/ Figure/Table/ Note** (e.g. Table 1)	**Type of com-ment**[2]	**Comment (justification for change) by the MB**	**Proposed change by the MB**	**Secretariat observations** on each comment submitted
US	10 Electromag-netic disturbance levels	10.1 PCD Limits	T	The US accepts the fact that the ISO/IEC 14443-2 2010 standard with Admendment-3 places an upper limit on the “spurious” signals opposed to the existing standard. However, The US delegation is requesting additional language within Section 10 that addresses why such 1.1usec signals are integrated and averaged over time that performs no negative effects on operations and interoperability.		Resolved by explanation: Few signal spikes are filtered automatically and inherently do not disturb PCD receivers

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Template for comments and secretariat observations

Date: 2010-09-23	Document: **WG8N1693 14443-2:2010/FPDAM3**

1	2	(3)	4	5	(6)	(7)
MB[1]	**Clause No./ Subclause No./ Annex** (e.g. 3.1)	**Paragraph/ Figure/Table/Note** (e.g. Table 1)	**Type of comment**[2]	**Comment (justification for change) by the MB**	**Proposed change by the MB**	**Secretariat observations** on each comment submitted
FR1	10.1		ED	PCD limit values has been modified from previous version: 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) < $H \leq H_{max}$	Reintroduce same limits definition as in previous version.	Resolved by JP8
FR2	10.1		TE	With standard Test equipment, it is possible to achieve the noise floor requirement but with no margin at high field strength. At 7,5 A/m the noise floor is measured too close to the limit to allow precise EMD measurement.	Add a margin to the value at high field to allow standard equipment use in EMD test: Value to be discussed in Takamatsu	Resolved by modifying requirements in the test methods: the noise floor test is passed if the noise standard deviation is at least 2 times smaller than the EMD limit
FR3	10.1		ed	Consistency with ISO/IEC FDIS 14443-2:2010: - "2" not in italics in 3/H^2 - protected spaces in formulas and before the unit - mV (peak) in brackets - H explanation in the sentence (not in a note)	Replace The PCD shall not detect any load modulation amplitude below VE,PCD = 2/3 + 3/H² in mV (peak), when measured as described in ISO/IEC 10373-6/Amd.9. NOTE H is the (rms) value of magnetic field strength in A/m. with The PCD shall not detect any load modulation amplitude below $V_{E,PCD}$ = 2/3 + 3/H^2 [mV (peak)] when measured as described in ISO/IEC 10373-6/Amd.9, where H is the (rms) value of magnetic field strength in A/m.	Resolved

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Date: 2010-09-23	Document: **WG8N1693 14443-2:2010/FPDAM3**

1	2	(3)	4	5	(6)	(7)
MB[1]	**Clause No./ Subclause No./ Annex** (e.g. 3.1)	**Paragraph/ Figure/Table/Note** (e.g. Table 1)	**Type of comment**[2]	**Comment (justification for change) by the MB**	**Proposed change by the MB**	**Secretariat observations** on each comment submitted
FR4	10.2		ED	PICC limit values has been modified from previous version 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) < $H \leq H_{max}$	Reintroduce same limits definition as in previous version.	Resolved by JP9
FR5	10.2		TE	With standard Test equipment, it is possible to achieve the noise floor requirement but with no margin at high field strength. At 7,5 A/m the noise floor is measured too close to the limit to allow precise EMD measurement.	Add a margin to the value at high field to allow standard equipment use in EMD test: Value to be discussed in Takamatsu	Resolved by FR2
FR6	10.2		TE	Class of the PICC is not mentioned.	Limits for other classes need to be defined.	Resolved
FR7	10.2		ed	Consistency with ISO/IEC FDIS 14443-2:2010: - "2" not in italics in 3/H^2 - protected spaces in formulas and before the unit - mV (peak) in brackets - H explanation in the sentence	Replace The EMD level before PICC data transmission shall be below VE,PICC = 2/3 + 3/H² in mV (peak) for at least the duration of the low EMD time tE,PICC, when measured as described in ISO/IEC 10373-6/Amd.9. with The EMD level before PICC data transmission shall be below $V_{E,PICC}$ = 2/3 + 3/H^2 [mV (peak)] for at least the duration of the low EMD time $t_{E,PICC}$, when measured as described in ISO/IEC 10373-6/Amd.9, where H is the (rms) value of magnetic field strength in A/m. Delete NOTE 1 Change "NOTE 2" to "NOTE"	accepted

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