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Identification cards — Integrated circuit cards —

Part 3:
Cards with contacts — Electrical interface and transmission protocols

AMENDMENT 1: Additional voltage classes

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Cards and security devices for personal identification*.

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Identification cards — Integrated circuit cards —

Part 3:
Cards with contacts — Electrical interface and transmission protocols

AMENDMENT 1: Additional voltage classes

Clause 4, second line

Replace "A, B, C" by "A, B, C, D"

5.1.3, paragraph 1

Replace "three classes" by "four classes", and add a 4th dash with content: "1,2 V for class D."

5.2.1, Table 1

Replace Table 1 with the following:

Table 1 — Electrical characteristics of VCC under normal operating conditions

Symbol	Condition	Minimum	Maximum	Unit
U_{CC}	Class A (5,0 V nominal) Class B (3,0 V nominal) Class C (1,8 V nominal) Class D (1,2 V nominal)	4,5 2,7 1,62 1,10	5,5 3,3 1,98 1,30	V
I_{CC} [a]	Class A, at maximum allowed frequency Class B, at maximum allowed frequency Class C, at maximum allowed frequency Class D, at maximum allowed frequency When the clock is stopped, see 6.3.2		60 50 30 60 0,5	mA
[a] The current value is averaged over 1 ms.				

5.2.1, Table 2

In the second column replace "nA.s" by "nA s" (i.e. remove the dot between nA and s).

5.2.1, Table 2

Add another row to Table 2 immediately below the rows for Class C with the following content:

D	12 nA s	400 ns	60 mA

5.2.3, Table 4

In the second column, row three, replace "Class C" by "Class C and class D".

5.2.5, Table 5

Replace the row for U_{OL} in Table 5 by the following and add table footnote b:

U_{OL}	I_{OL} = 1 mA for class A [a] and class B [a] I_{OL} = 500 µA for class C [a]	0	0,15 U_{CC}	V
	I_{OL} = 1 mA for class D	0 [b]	0,2	V
[b] To allow for overshoot the voltage on I/O shall remain between −0,3 V and U_{CC} + 0,3 V during dynamic operation.				

6.2.1, paragraph 1

Replace "A, B or C" by "A, B, C or D".

8.3

Replace the paragraph above Table 9, the indented paragraph between Table 9 and Table 10, and Table 10 with the following text:

The first TA for T=15 encodes the clock stop indicator (X) and the class indicator (Y) as specified in Table 9. The default values are X = "clock stop not supported" and Y = "only class A supported". For the use of clock stop, see 6.3.2. For the use of the classes of operating conditions, see 6.2.1 and 6.2.4.

Replace Table 9 with the following:

Table 9 — Clock stop indicator (X) and class indicator (Y)

b8	b7	b6	b5	b4	b3	b2	b1	Value
x	x	-	-	-	-	-	-	**Clock stop indicator (X)**
0	0	-	-	-	-	-	-	Clock stop not supported (default value)
0	1	-	-	-	-	-	-	State L
1	0	-	-	-	-	-	-	State H
1	1	-	-	-	-	-	-	No preference
-	-	x	x	x	x	x	x	**Class indicator (Y)**
-	-	0	0	0	0	0	1	Only class A supported
-	-	0	0	0	0	1	0	Only class B supported
-	-	0	0	0	1	0	0	Only class C supported
-	-	0	0	1	0	0	0	Only class D supported
-	-	0	0	0	0	1	1	Only classes A and B supported
-	-	0	0	0	1	1	0	Only classes B and C supported
-	-	0	0	1	1	0	0	Only classes C and D supported
-	-	0	0	0	1	1	1	Only classes A, B and C supported
Any other value								RFU