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Contact Card – Transients on Current drawn from VCC

This Specification Bulletin adds requirements to limit transients (spikes) on current drawn from VCC.

Applicability

This Specification Bulletin applies to:

- *EMV Integrated Circuit Card Specifications for Payment Systems, Book 1 - Application Independent ICC to Terminal Interface Requirements, Version 4.3, November 2011.*

Related Documents

- *None*

Description

This bulletin defines the measurement method for the I_{cc} current by averaging the value of the current (over 1 ms) in the Table 7 – Section 5.3.6 to align with ISO/IEC 7816-3. In order to ensure interoperability this bulletin also places a restriction on the transients on I_{cc} that an ICC is permitted to cause to ensure that they remain below the limits a terminal is required to accommodate.

Specification Change

Change Table 7 and add text and Table 7a below Table 7 as follows:

Symbol	Conditions	Minimum	Maximum	Unit
V_{CC}	Class A Class B Class C	4.50 2.70 1.62	5.50 3.30 1.98	V
I_{CC}	Class A Class B Class C		50 50 30	mA
The maximum current consumptions shown apply when operating at any frequency within the range specified in section 5.3.4. The current value is averaged over 1 ms.				

new card values from January 2014; see Table 1.

Table 7: Classes of Operation

While the supply power is maintained within the voltage range defined in Table 7, the Icc current transients shall not exceed the values defined in Table 7a.

Class	Maximum charge [a]	Maximum duration	Maximum variation [b] of I_{CC}
A	20 nA.s	400 ns	100 mA
B	10 nA.s	400 ns	50 mA
C	6 nA.s	400 ns	30 mA
a The maximum charge is half the product of the maximum duration and the maximum variation. b The maximum variation is the difference between the peak transient Icc current and the average value of the Icc current over 1 ms measured for the ICC at the time of the transient.			

Table 7a — Transients on I_{cc} current

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