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**Identification cards — Test methods —**  
**Part 8:**  
**USB-ICC**

*Cartes d'identification — Méthodes d'essai —*  
*Partie 8: USB-ICC*

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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 and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 10373-8 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Cards and personal identification*.

ISO/IEC 10373 consists of the following parts, under the general title *Identification cards — Test methods*:

- *Part 1: General characteristics*
- *Part 2: Cards with magnetic stripes*
- *Part 3: Integrated circuit cards with contacts and related interface devices*
- *Part 5: Optical memory cards*
- *Part 6: Proximity cards*
- *Part 7: Vicinity cards*
- *Part 8: USB-ICC*
- *Part 9: Optical memory cards: Holographic recording method*

## Introduction

The USB-ICC is a complex device supporting the USB protocol. The layered structure of the USB protocol involves setting the USB-ICC in different testing configurations when a card manufacturer needs to set forth a Validation Plan. In addition, any USB device belongs to a USB Class. Therefore, the comprehensive testing of any USB device involves carefully developing a Test Plan that includes three different groups of Tests:

- 1) evaluation of the Electrical, Physical features;
- 2) effective execution of the USB protocol;
- 3) execution of Tests designed to prove the compliance of the USB device with its specific Class.

These High-Level Groups of Test are made up of a series of individual Test Scenarios. These scenarios challenge the device, and are designed so that any non-compliance of the card could be disclosed. The final objective is to guarantee the compatibility of the USB-ICC with other USB-compliant devices.

Figure 1 summarizes the Validation Test Framework for the USB-ICC that this part of ISO/IEC 10373 suggests for the USB-ICC.

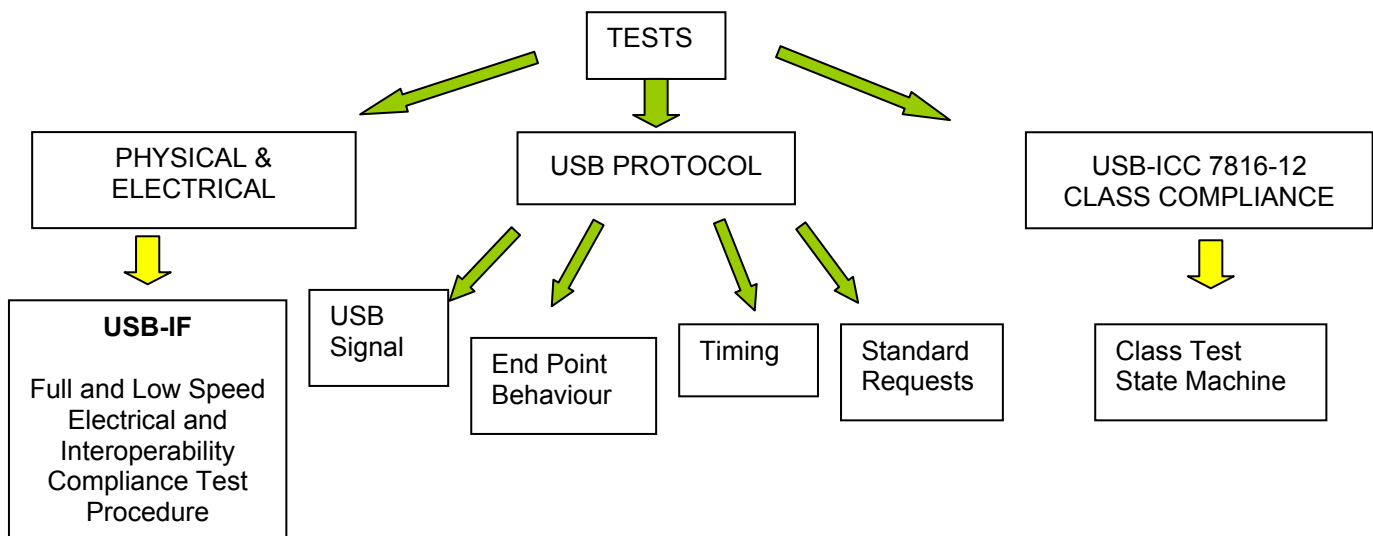


Figure 1 — Compliance test overview

According to ISO/IEC 7816-12, the USB-ICC is required to comply with the USB Specification 2.0 at physical and electrical levels. This specification is common to all USB devices; it is published by the USB Implementers Forum, which has also published some Compliance Test Procedures that can be used to test some of the functionalities of the card. Note that ISO/IEC 7816-12 actually describes the USB-ICC Device Class, and testing procedures specific to the USB-ICC Class are not available.

# Identification cards — Test methods —

## Part 8: USB-ICC

### 1 Scope

This part of ISO/IEC 10373 describes a Test Methodology and a list of Test Scenarios to evaluate the compliance of a card with ISO/IEC 7816-12.

Specifically, this part of ISO/IEC 10373:

- addresses USB 2.0 physical layer measurements and electrical compliance testing;
- discusses issues relative to the Test Tools to analyse USB bus traffic and provides guidance for the Test Scenarios given in this part of ISO/IEC 10373;
- proposes a classification of Test Scenarios given in this part of ISO/IEC 10373, along with validation criteria;
- discusses Test Cases for compliance with the USB CCID Class Device.

NOTE Compliance means cards that are called USB-ICC products are designed to match the description in ISO/IEC 7816-12.

### 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 7816-12:2005, *Identification cards — Integrated circuit cards — Part 12: Cards with contacts — USB electrical interface and operating procedures* [RE1 in Test Tags in this part of ISO/IEC 10373]

*Universal Serial Bus specification – Revision 2.0*, 27 April 2000 [RE2 in this part of ISO/IEC 10373]