



American National Standard for Financial Services

ANSI X9.100-30–2011

Formerly part of X9.7 - 1999 (R2007)

Optical Background Measurement for MICR Documents



Developed by
Accredited Standards Committee X9, Incorporated
Financial Industry Standards

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American National Standards Institute

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Foreword

Approval of an American National Standard requires verification by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by the standards developer.

Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made toward their resolution.

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Introduction

NOTE: The user's attention is called to the possibility that compliance with this standard may require use of an invention covered by patent rights.

By publication of this standard, no position is taken with respect to the validity of this claim or of any patent rights in connection therewith. The patent holder has, however, filed a statement of willingness to grant a license under these rights on reasonable and nondiscriminatory terms and conditions to applicants desiring to obtain such a license. Details may be obtained from the standards developer.

It has been approximately eighteen years since the first publication of this standard as ANS X9.7 including its Annexes which provide for the optical measurement methodologies of reflectance and PCS. New commercial technologies for printing checks have emerged over that time period. In addition to the older technologies of letterpress, offset lithography and impact printing, newer technologies involving non-impact printing based on electro-photography, electron beam imaging printing, and thermal transfer printing are currently used to print checks or selected fields on checks.

Furthermore, a change is well underway to expand the use of an electronic check image in place of the paper check that then can be truncated as early as possible in the payment cycle. Electronic imaging of checks places new requirements on the design of checks and the measurement of reflectance, Print Contrast Signal (PCS), and Dynamic Contrast Ratio (DCR) so that they are readily legible when viewing the image of a document rather than the document itself. Checks properly designed for imaging assure that all vital information will be captured by the imaging process, that the images will be usable and legible, and that the file sizes of images will be low enough so that they can be stored and moved in a cost efficient manner._

This standard which separates the measurement methods from the actual specification values is the result of an extensive cooperative effort by representatives from financial institutions, check printers, business form manufacturers, software suppliers, and manufacturers of various types of processing and test equipment for the financial industry.

Notice of Plan to Re-Open Standards Following Publication: Incorporating Dynamic PCS

The X9.100-110 and the X9.100-30 standards will be reopened shortly after this ballot establishes X9.100-30-2011 and X9.100-110-2011 as the replacement standards for the previous X9.7-1999 (R2007) standard so the X9AB Payments Subcommittee can review a proposal for an alternative PCS measurement process. PCS measurement is a fundamental imaging technique that will remain in use for determining the dropout level of the background on a document. However, traditional PCS testing methods are more manual and subjective than newer approaches.

Advancements in technology now allow image testing equipment to better approximate the resulting image of a background using a 'dynamic PCS' method of measurement. Dynamic PCS more closely estimates the dropout of the background similar to how it would appear when captured using sorter image capture equipment. Historically, the algorithms used in the sorter image capture equipment to determine which parts of the document background stays or drops out have given significantly different results as compared to images obtained from flatbed document scanners used for image quality assurance testing. With advancements in technology,

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the flatbed scanner image capture processes have become better able to approximate the dynamic contrast image (DC image) obtained from sorter image capture units by applying dynamic PCS programming. Because of the need to update a significant amount of normative information during the revision of the old X9.7-1999 (R2007) standard for placement in the new X9.100-30 and X9.100-110 standards, the X9AB Payments Subcommittee believes it is in the best interest of the industry to move the standards forward as they are today before examining the PCS issue. This will allow the industry to begin the implementation of the new updated standards as presented here. The X9AB Subcommittee will then reopen the X9.100-110 and the X9.100-30 standards for an early reevaluation of the need to include modernized PCS measurement processes, without delaying the industry from benefiting from the other useful specifications in the new 2011 versions of the standards.

Suggestions for the improvement or revision of this Standard are welcome. They should be sent to the X9 Committee Secretariat, Accredited Standards Committee X9, Inc., Financial Industry Standards, 1212 West Street, Suite 200 Annapolis, MD 21401 USA.

This Standard was processed and approved for submittal to ANSI by the Accredited Standards Committee on Financial Services, X9. Committee approval of the Standard does not necessarily imply that all the committee members voted for its approval.

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Special recognition is given to Mr. Brian Salway, Symcor, for editing/updating of the technical illustrations throughout this document.

This document cancels and replaces ANS X9.7-1999 (R2007) in part. The optical specifications covered in this standard, X9.100-30, were carved out of the predecessor standard to allow pairing of this standard with documents other than Checks. ANSI X9.100-110 will cover specific check areas of interest and image compatibility.

This is a preview of "X9.100-30-2011". [Click here to purchase the full version from the ANSI store.](#)

Optical Measurement Specifications for MICR Documents

1 Scope

The scope of the standard is the specification of the optical measurement methodology for the parameters of reflectance, PCS, DCR, Poxel Count, and opacity which are needed for MICR documents.

2 Purpose

The purpose of this standard is to provide a uniform measurement methodology for the several MICR application standards that incorporate optical measurements and specifications.

3 Normative References

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

ANSI INCITS 49:1975 (S2007), Character Set for Optical Character Recognition (OCR-B)

ANSI X9.100-10, Paper Specifications for MICR Documents

ANSI X9.100-20, Print and Test Specifications for Magnetic Ink Printing (MICR)

ANSI X9.100-110 (X9.7), Document Imaging Compatibility

ANSI X9.100-111, Physical Check Endorsements

ANSI X9.100-120, Bank Deposit Tickets

ANSI X9.100-130, Universal Interbank Batch/Bundle Tickets

ANSI X9.100-140, Specifications for an Image Replacement Document – IRD

ANSI X9.100-151, Check Correction Strips

ANSI X9.100-160-1, Magnetic Ink Printing (MICR), Part 1: Placement and Location

ANSI X9.100-160-2, Magnetic Ink Printing (MICR), Part 2: EPC Field Use

ASC X9 TR 2, Understanding, Designing and Producing Checks

ASC X9 TR 6, Guide to Quality MICR Printing and Evaluations

ASC X9 TR 8, Check Security

TAPPI T425, Opacity of Paper (15/d geometry, Illuminant A/2°, 89% Reflectance Backing and Paper Backing)

CIE 017.4-1987, *“International Lighting Vocabulary,”* Bureau Central, International Commission on Illumination, Vienna, Austria.