

ID Detailed Technical Checks

Deep Dive into ID Document Technical Checks

Melissa ID performs a number of authentication tests on a document to determine its authenticity. Each document type in the Melissa ID Document Library contains a defined set of individual authentication tests that is relevant for that particular document type only. The set of authentication tests performed on one type of document will not be the same as the set of tests performed on another type, although many of the same tests are used. The number and types of authentication tests will vary for a particular document, but a typical document will be subjected to **10–50 individual authentication tests**. Many of our authentication tests compare the data from two or more data sources: visible (human-readable) and machine-readable (2D barcode) to verify that they match. The visible and machine-readable fields are crosschecked, within and across both types of data sources.

Note: *The following list describes some, not all, of the Melissa ID standard authentication tests. It does not describe any custom authentication tests which we consider IP.*

Standard Authentication Tests & Descriptions

2D Barcode Content	Checks the contents of the (two-dimensional) 2D barcode on the document.
2D Barcode Read	Verifies that the (two-dimensional) 2D barcode on the document was read successfully.
Application Date Crosscheck	Compares the application date to information contained in one or more visible or machine-readable application date fields.
Birth Date Check Digit	Verifies that the visible birth date is the same as the check digit from the birth date check digit in the MRZ.
Birth Date Crosscheck	Checks the birth date field against information contained in one or more visible or machine-readable birth date fields.
Birth Date Valid	Verifies that the birth date could be read, is in the expected format, and occurs on or before the current date and not outside a reasonable range.

Composite Check Digit	Performs a checksum validation on the MRZ
Control Number Crosscheck	Compares the control number to information contained in one or more visible or machine-readable control number fields.
Document Crosscheck Aggregation	Checks the document against the information contained in one or more visible or machine-readable document fields.
Document Expired	Verifies that the document expiration date doesn't occur before the current date.
Document Number Check Digit	Compares the machine-readable document number check digit to the calculated check digit from the visible document number.
Document Number Crosscheck	Checks the document number against the information contained in one or more visible or machine-readable document number fields.
DSC Certificate Valid	Verifies that time is within the Document Signer Certificate (DSC) validity period. The issuer has indicated that the type can no longer be considered secure on the current date.
Expiration Date Check Digit	Checks the expiration date against information contained in the calculated expiration date check digit from the machine-readable zone (MRZ).
Expiration Date Crosscheck	Compares the visible expiration date field to one or more machine-readable expiration date fields.
Expiration Date Valid	Verifies that the document expiration date is valid, in the expected format, and occurs after the issue and/or birth dates.
Full Name Crosscheck	Checks the full name against the information contained in one or more visible or machine-readable full name fields.
Image Tampering Check	Examines a document image for evidence of tampering or digital manipulation.
Issue Date Crosscheck	Checks the issue date against the information contained in one or more visible or machine-readable issue date fields.
Issue Date Valid	Verifies that the document issue date is valid and in the expected format.
Laser Perforation	Verifies the presence of a laser perforation feature on the document.

Layout Valid	Verifies that the layout (relative positions of features on the document are within the normal area) of the document is correct.
Magstripe Presence	Checks for the presence of a magnetic stripe (magstripe) on the document.
MRZ Crosscheck	Compares the machine-readable zone (MRZ) printed on the document to the MRZ on the contactless smart card.
Nationality Code Crosscheck	Checks the nationality code field to one or more visible or machine-readable nationality code fields.
Nationality Valid	Verifies that the nationality code is legible and that it is on the list of standard nationality codes.
Optically Variable Ink Pattern	Verifies the presence of an optically variable ink pattern on the document. Note The pattern should vary in colour (but not shape) as you tilt the document.
Optically Variable Ink Response	Verifies the response of an optically variable ink pattern on the document.
Overlay Pattern	Checks the document to verify the presence of a pattern on the document overlay and verifies the integrity of the document overlay that seals the document in order to verify that.
Overlay Response	Verifies that a region of the document overlay or laminate material responds as expected
Personal Number Check Digit	Validates the visible personal number check digit by comparing it to a calculated check digit from the visible personal number element. The personal number check digit doesn't match the visible personal number.
Personal Number Crosscheck	Checks the personal number against the information contained in the visible or machine-readable personal number fields.
Photo Printing	Verifies that a detailed photo printing technique was used a photo and can be used to verify that <ul style="list-style-type: none"> • the photo has not been substituted • the document is authentic (not counterfeit), or • the document has not been tampered with or modified
Substrate Printing	Verifies that a detailed printing technique, which can be used to detect a counterfeit document, was used when the blank document was created.
Visible Pattern	Verifies that a security feature in the visible spectrum is present and in an expected location on the document.

Scanner Technical Checks:

The below authentication checks are carried out in addition to the above when using a specific desktop scanner recommended by Melissa ID.

Ultraviolet Material Response	Confirms that the ultraviolet response for the entire document is correct for that type of document and verifies that the material of the document responds as expected when viewed under ultraviolet light.
Ultraviolet Pattern	Verifies that a security feature, visible in the ultraviolet spectrum, is present and in an expected location on the document.
Ultraviolet Response	<p>Checks that a region of the document responds as expected when viewed under ultraviolet light. Confirms that the area of the test has not been tampered with, and that it was made using the correct material.</p> <p>The document may contain:</p> <ul style="list-style-type: none">• a sticker placed on the tested part of the document, or• a responsive stain from whitening agents (such as laundry detergent or glue). <p>Note: The material should not respond with a bright blue color.</p>
Visible Colour Response	Verifies that the material of the document responds as expected when viewed under white light.
Near-Infrared Pattern	Verifies that a security feature, visible in the near-infrared, is present and in an expected location on the document.
Near-Infrared Response	Verifies that text, photos, and other features on a region of the document respond as expected when viewed under near- infrared light.

ABOUT MELISSA

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