Document reader Regula 70X4M

Full page passport reader with no moving parts inside.

Automatic reading and authenticity verification of passports, IDs, visas, driver's licenses and other identification documents.

Optical character recognition, reading of barcodes, RFID and SmartCard chips.

A small-sized reader for desktop use. Hard plastic body. The device is connected to a PC via a USB cable. No moving parts. Reliable, convenient and easy-to-use.

The device allows capturing images in white, infrared, ultraviolet and coaxial lights. Certain models are equipped with modules for reading RFID chips and smart cards. The device is supplied with software development kit (SDK) for easy integration into existing end-user systems.

Reader Regula 70X4M can be optionally equipped with a flip-top cover.

Functionality

- Capturing and processing images
  - supported document formats
    - ID-1
    - ID-2
    - ID-3
    - other documents with maximum size 88×128 mm
  - automatic detection of a document in a scanning zone
  - automatic scanning after document detection
  - elimination of glare from laminate and holograms in white and IR light
  - compensation of external light hitting during image capture in ultraviolet light (*Smart UV*)
  - automatic selection of UV illumination intensity according to the document type
  - search and cropping of a document image from a general image
- The MRZ detection and recognition
- Recognition and reading of 1D and 2D barcodes
- Automatic recognition of a document type
- Processing graphic fields
- OCR of the visual zone
- Reading RFID tags
- Analyzing and comparing text data
- Automatic authenticity verification of a document

Operation

1. The optical reader automatically detects a document in the scanning area of the device.
2. Document images are captured in different illumination modes. At the same time data is read from RFID tags and smart cards.
3. **Regula Document Reader SDK** processes data.
4. Results of the verification are ready for further use.

Application

- Border control services
- Aviation security services
- Law-enforcement agencies
- Immigration services
- Financial institutions
- Hotels
- Car rental and leasing companies
- Cellular companies
- Business centers security service
- Event-agencies
- Medical institutions
- Tourist agencies
- Ticket offices

- Visa support agencies and consulates
- Insurance companies
- Casino security service

Additional functions

- A USB-port available for connecting other devices
- Programmable indicators of the device status:
    - multicolour LED indicator - red, yellow, green
    - buzzer

Delivery Set

- **Regula Document Reader SDK**
- USB cable for connecting the reader to a PC
- Optionally:
    - external power supply
    - scratch resistant glass (Sapphire)

Functionality		Model			
		7024M.110	7024M.111	7034M.110	7034M.111
Optical reader light sources	White	+	+	+	+
	Infrared 870 nm	+	+	+	+
	Ultraviolet 365 nm	+	+	+	+
	Coaxial white		+		+
Reader of radio frequency identification devices (RFID)		+	+	+	+
Smart card reader				+	+

Optical reader

- Scanning area, mm — 88×128: full passport page
- Video sensor:
  - type — CMOS
  - colour model — RGB
  - colour depth, bit — 24

	Model	
	7024M.110-5A, 7024M.111-5A, 7034M.110-5A, 7034M.111-5A	7024M.110-18, 7024M.111-18, 7034M.110-18, 7034M.111-18
Number of megapixels	5	18
Resolution, ppi	470 ± 5%	860 ± 10%
Frame size, pixels	2592×1944	4908×3684

Reader of radio frequency identification devices (RFID)

- Supported standards — ISO 14443: type A and B
- Data exchange rate, Kbaud — 106, 212, 424, 848
- Reading an RFID tag regardless of its position in the document
- Anti-collision: reading an RFID tag according to the MRZ

Smart card reader for model Regula 7034M

- Supported standards — ISO/IEC 7816-1, -2, -3, -4; EMV2000 4.1, Level 1
- Data exchange rate, Kbaud — 2–500
- Smart card type — asynchronous, T = 0 and T = 1

Device technical specifications

- Overall dimensions (length×width×height), mm:
  - **Regula 7024M** — 179×160×99
  - **Regula 7034M** — 190×160×99
- Weight, not more than, kg — 0,82
- Power supply voltage from a USB port, V — 5
- Power supply voltage from AC adapter (AC 100-240 V / DC 5 V) — optionally
- Scratch resistant glass (Sapphire) — optionally

Regulatory

- CE — RED, LVD & EMC
- EU WEEE, REACH & RoHs Directive
- FCC Part 15 Class B for **Regula 7024M.XXX-5A** and **7034M.XXX-5A**
- UL for **Regula 70X4M.XXX-5A**only

Climatic conditions

- Relative air humidity — 20...95% (non-condensing)
- Air temperature,˚C — -10...+50
- IP51

Document reader software development kit (SDK)

SDK (**Full**) consists of three modules:

- Basic – supplied together with a device by default
- VizOCR – reading textual fields from a document page
- AAC – automatic authenticity control

VizOCR and AAC modules are optional and used to extend the functionality of Basic module.

Updates for SDK are provided regularly. Basic module has unlimited support. VizOCR and AAC are updated on subscription basis.

Functionality		Full SDK modules		
		Basic (supplied by default)	**VizOCR**	**AAC**
Document image capture and processing				
Document formats	• ID-1 (identity card) • ID-2 (passport card, visa) • ID-3 (passport) • other document formats up to 88×128 mm	+		
Scanning process	• document detection sensor • automatic scanning after document detection • elimination of glare from laminate and holograms for white and infrared illumination • compensation of external light hitting during image capture in UV light (Smart UV) • automatic intensity selection of UV illumination for a certain document type • search and cropping of a document image from a received image	+		
Machine readable zone (MRZ)				

Supported MRZ formats	• in conformity with ICAO 9303:
	  ◦ 44×2
	  ◦ 30×3
	  ◦ 36×2
	• in conformity with ISO IEC 18013 (IDL):
	  ◦ 30×1
	• support of special MRZ data structure for documents of certain countries
		+		

Features	• search for the MRZ along the whole document image • MRZ recognition in infrared and white light • control of check digits and data structure in conformity with the requirements of ICAO 9303 and BSI TR-03105 Part 5.1 • evaluation of MRZ quality specifications in conformity with ICAO 9303, ISO 7501, 1831, 1073-2 standards	+		
Barcodes				
Supported formats	• 1D: Codabar, Code39 (+extended), Code93, Code128, EAN-8, EAN-13, IATA 2 of 5 (Airline), Interleaved 2 of 5 (ITF), Matrix 2 of 5, STF (Industrial), UPC-A, UPC-E • 2D: PDF417, Aztec Code, QR Code, Datamatrix	+		

Authentication	• barcode format check			+
Automatic document type recognition				
Order of document type recognition	• Country→Type→Series		+	+
Features	• receiving a document template from the SDK database containing the following information: ◦ text and graphic fields position ◦ availability of barcodes and security features ◦ authenticity verification and its parameters ◦ RFID-chip availability ◦ a reference image from Information Reference Systems «Passport», «Autodocs», «Frontline Documents System» • processing of the received document images in compliance with the sample, including document image rotation by the angle given in the sample		+	+
Graphic fields processing				
Types of graphic fields	• portrait of the document holder • signature • barcode • fingerprint, etc.	+		
Features	• cropping and displaying graphic fields as separate images in compliance with the sample of the corresponding document • automatic searching of faces on the document image and cropping the document holder portrait if the document type is not recognized • document image rotation according to the document holder portrait position	+		
OCR of the visual zone				
Recognition of character sets	• Central European and Eastern European Latin (1250) • Cyrillic (1251) • Western European Latin (1252) • Greek (1253) • Turkish (1254) • Baltic (1257) • other fonts of any size		+	
Features	• dictionary support (name, surname, address, country, etc.) • automatic text division into separate fields (e.g. dividing the address into postal code, country, state, etc.) • recognition of dates with complex formats • recognition of characters from different character sets in one line		+	
RFID SDK				
Supported RFID-chip standards	• ISO/IEC 14443-2 (type A and B) • ISO/IEC 14443-3 (MIFARE® Classic Protocol) • ISO/IEC 14443-4	+		
Data access modes	• Direct • BAC • EAC • PACE • SAC	+		

Authentication	• active (AA) • passive (PA) • chip (CA v1, CA v2) • terminal (TA v1, TA v2)	+		
Supported applications	• ePassport (DG1–DG16) • eID (DG1–DG21) • eSign • eDL (DG1–DG14)	+		
Certificate management	• local storage • receiving certificates online through the program interface • Master List, CRL support	+		
Features	• reading RFID chips with extended length support • reading RFID chips in compliance with ICAO LDS 1.7, PKI 1.1 data formats • certified by BSI TR-03105 Part 5.1, BSI TR-03105 Part 5.2	+		
Analysis and comparison of text data				
Document areas for cross-checking of the readout data	• MRZ • VIZ • RFID-chip • barcode • contact chip (Smart Card)	+		
Verification	• validity of any dates • authenticity of names and surnames according to lists of wordstops • zero numbers of sample documents	+		
Adjustment of formats and measuring units to those used in the user OS	• date • weight • height, etc.	+		
Features	• complete or partial comparison of fields • integration of data received from several document pages • calculated field support (age, etc.) • transliteration to Latin characters in compliance with ICAO 9303 standards for comparison with the MRZ	+		
Authenticity verification				

Operation available for any document	• checking luminescence (UV Dull Paper) of:
	  ◦ the form
	  ◦ the MRZ area
	  ◦ the portrait area
	• checking the MRZ print contrast in compliance with ICAO 9303(IR B900 Ink)
				+

Operations available after document type recognition	• checking image patterns in white, IR and UV light
	• checking luminescence of UV protection fibers
	• detection of false luminescence
	• checking photo embedding type: printing or attachment
	• checking IR Visibility of:
	  ◦ elements of the form
	  ◦ text data
	  ◦ the photograph (main and additional)
	• detection of holograms (OVD), OVI
				+

	• reading a luminescent text and comparing it with the data obtained from the MRZ and VIZ (OCR Security Text) • visualization of IPI (Invisible Personal Information) • checking retroreflective protection • checking barcode format			
Features	• checking operations are adjusted to documents with different degrees of wear and tear • the choice of checking operations depends on security features available in a questioned document			+
Additional SDK functions				
Image formats	• .BMP • .JPG • .JP2 • .PNG • .TIF • other image formats are possible on request	+		

Interoperability	• comparison modules:
	  ◦ fingerprint images from RFID chip and externalfingerprint scanner
	  ◦ face images from document data page and/or RFID chip
	• Information Reference Systems «Passport», «Autodocs», «Frontline Documents System»
		*		

OS compatibility	• Windows 7 (x86, x64), Windows 8, Windows 10	+		
Drivers	• Microsoft certified	+		
Features	• simultaneous optical scanning and RFID chip reading • firmware upgrade via USB interface (automatic upgrade after installing new SDK version) • multilingual interface	+		
Software updates				
SDK	• twice a year	*		
Document template database	• monthly	*		

* – on request / individual agreement

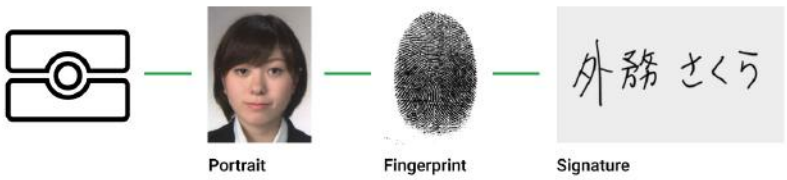
Visual zone

RFID-chip (Radio-frequency identification)

Document data readout: textual data readout

Visual zone

RFID-chip (Radio-frequency identification)



Document data readout: graphic data readout

White

Performed security checks in white light

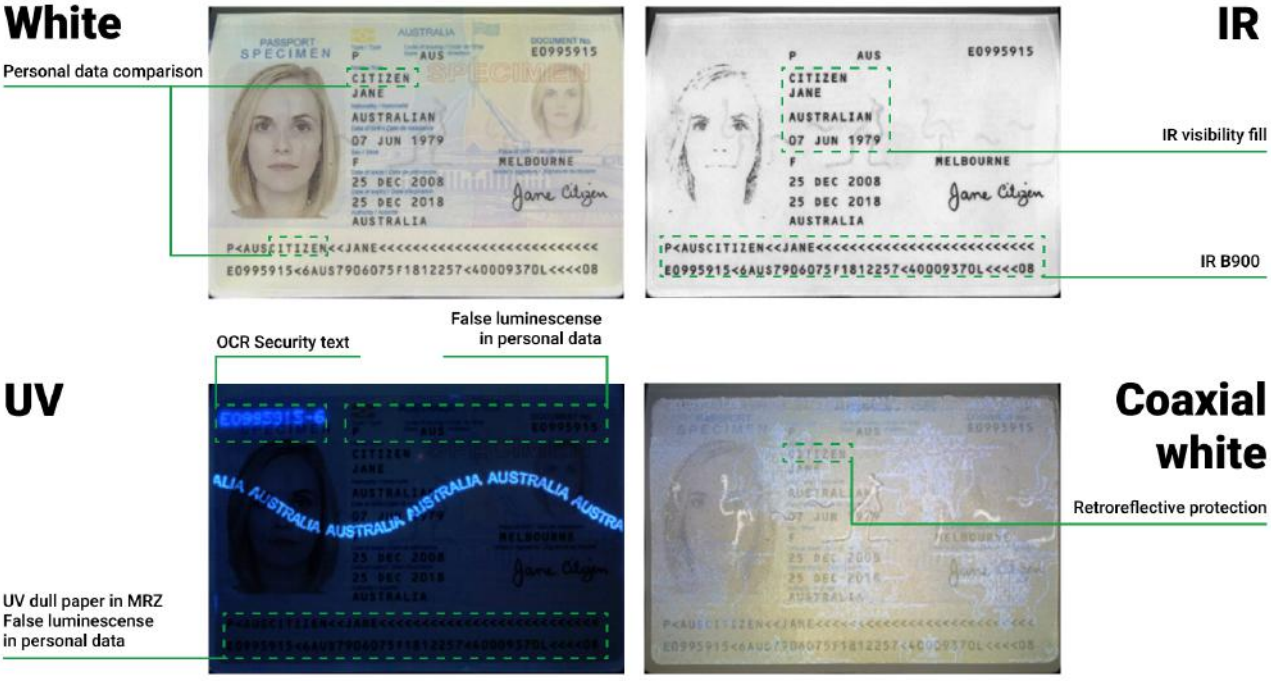
White IR

Performed security checks in infrared light

Performed security checks in ultraviolet light

Checking photo embedding type: printing or attachment

Checking the blank of the document



Checking the personal data

Viewing the passport from IRS database

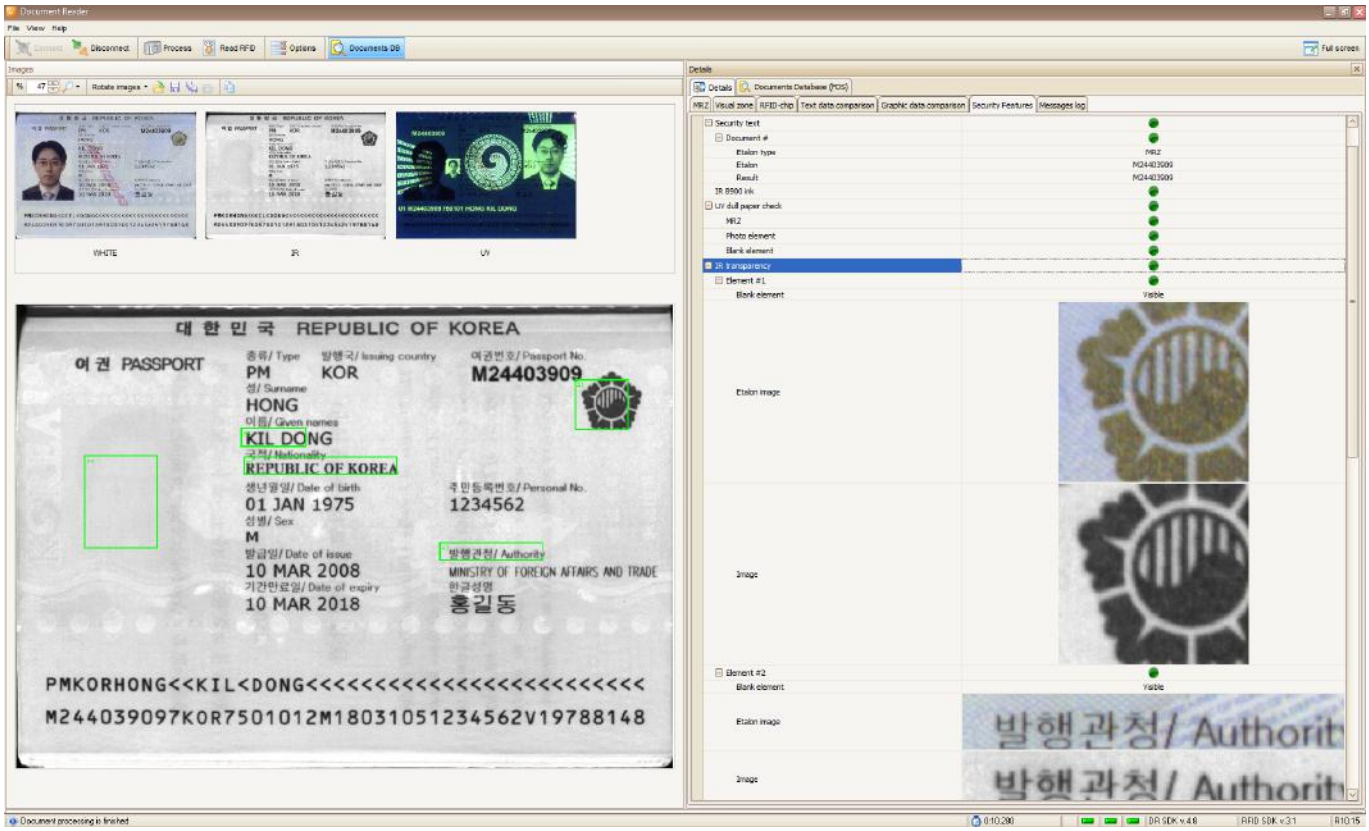
MRZ of the passport

Visual zone of the passport

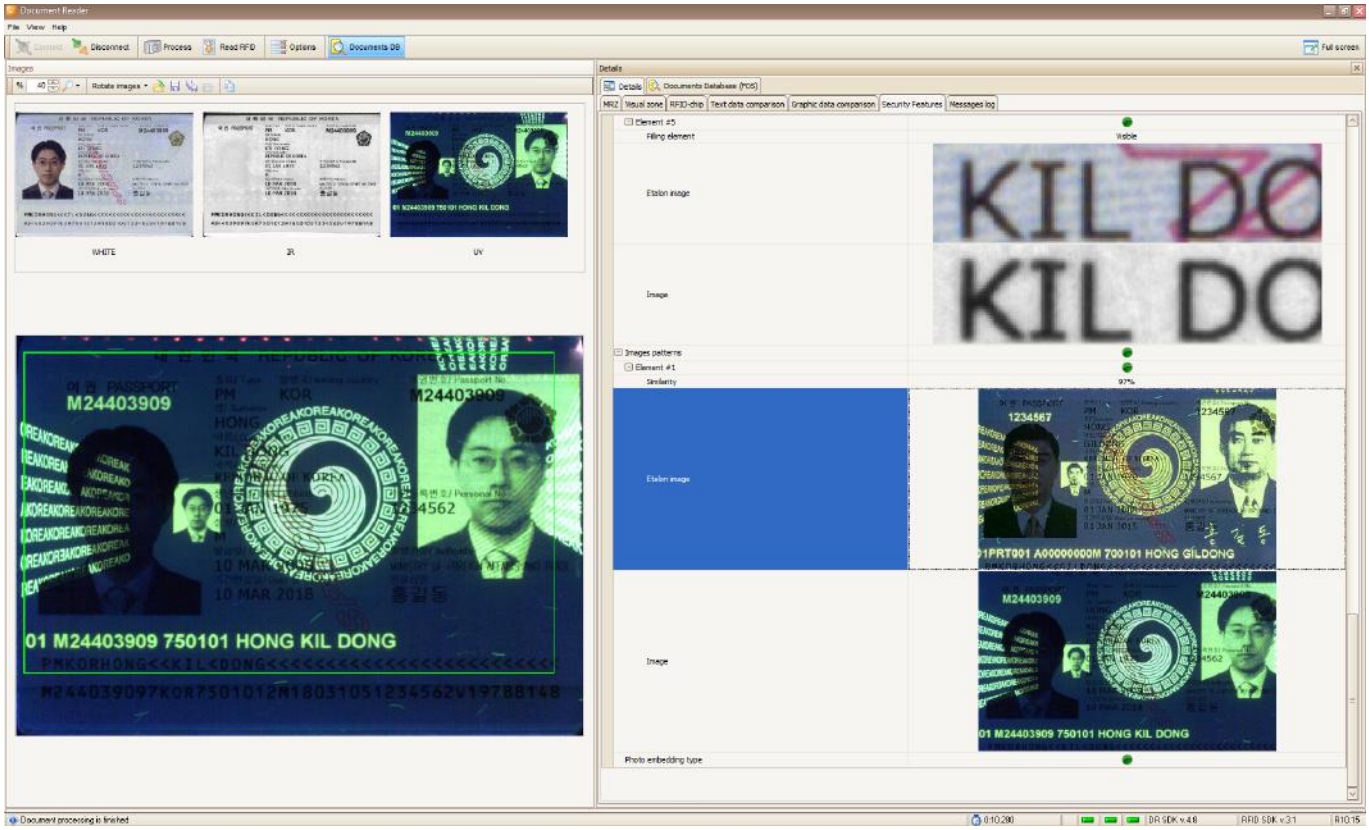
RFID-chip of the passport

Text data comparison of the passport

Graphic data comparison of the passport



Security features of the passport



Security features of the passport