

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.111	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
 - color depth, bit — 24

	Model		
	7024M.111-5A, 7034M.111-5A	7024M.111-5, 7034M.111-5	7024M.111-18, 7034M.111-18
Number of megapixels	5	5	18
Resolution, ppi	470 ± 5%	500 ± 5%	860 ± 10%
Frame size, pixels	2592×1944	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 and eIPI verification			
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 external fingerprint 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, Windows 11, Ubuntu 20.04—24.04, Debian 11—12, RHEL 9, macOS 11+`	+		
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

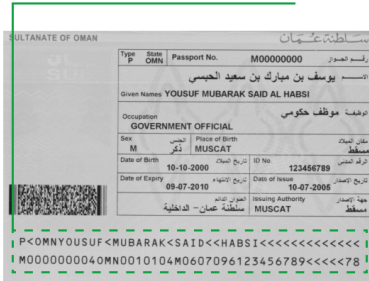
Visual Inspection Zone (OCR VIZ)

Barcode (personal data)



White

Machine Readable Zone (OCR MRZ)



IR

Invisible text (OCR Security text)



UV

RFID-chip (Radio-frequency identification)

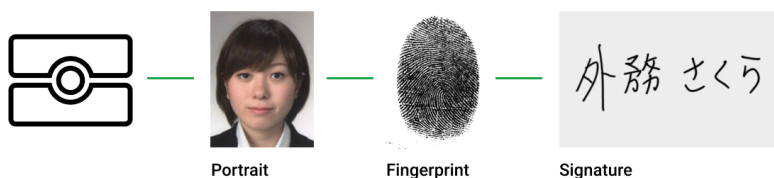


Document data readout: textual data readout

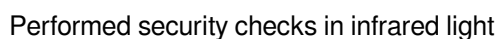
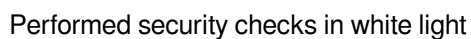
Visual zone



RFID-chip (Radio-frequency identification)



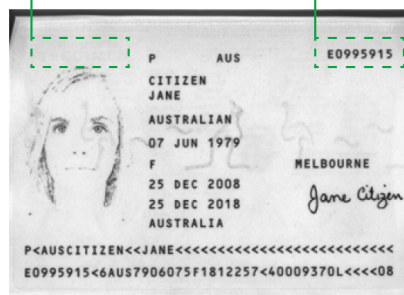
Document data readout: graphic data readout



White



IR visibility elements in blank



IR

UV



Coaxial white



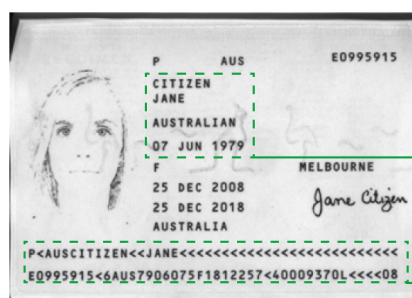
Checking the blank of the document

White

Personal data comparison



IR



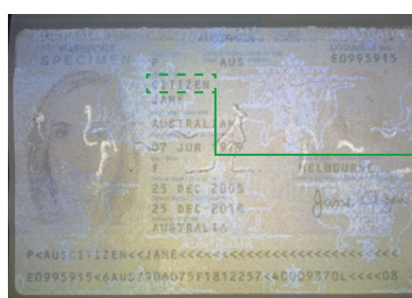
False luminescence in personal data

OCR Security text

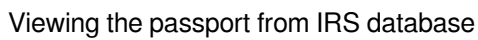
UV

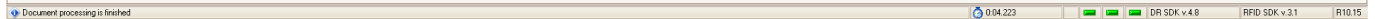


Coaxial white

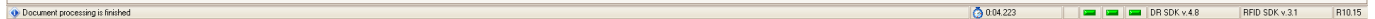


Checking the personal data





Visual zone of the passport



RFID-chip of the passport

Document Reader

File View Help

Connect Disconnect Process Read RFID Options Documents DB

Images

WHITE IR UV

Details

MRZ (Visual zone) RFID-chip Text data comparison Graphic data comparison Security Features Messages log

Field type	Visual zone OCR	RFID-chip	MRZ <-> Visual	MRZ <-> RFID	RFID <-> Visual zone	Valid
Document Class Code	PM	PM	PM			
Issuing State Code	KOR	KOR	KOR			
Document #	M24403909	M24403909	M24403909			
Date of expiry	10.03.2018	10.03.2018	10.03.2018			
Date of issue	01.01.1975	01.01.1975	01.01.1975			
Date of birth	01.01.1975	01.01.1975	01.01.1975			
Personal #	1234562	1234562	1234562			
Surname	HONG	HONG	HONG			
Given names	KIL DONG	KIL DONG	KIL DONG			
Sex	M	M	M			
Surname And Given Names	HONG KIL DONG	HONG KIL DONG	HONG KIL DONG			
Nationality Code	KOR	KOR	KOR			
MRZ Lines	PMKORHONG<<KIL<DONG<< M24403909<KOR7501012M18031051234562V19788148	PMKORHONG<<KIL<DONG<< M24403909<KOR7501012M18031051234562V19788148	PMKORHONG<<KIL<DONG<< M24403909<KOR7501012M18031051234562V19788148			
Check digit of document number	7	7	7			
Check digit of birth date	2	2	2			
Check digit of expiry date	5	5	5			
Check digit of Personal #	4	4	4			
Final check digit	8	8	8			
Age	39	39	39			
Months to expire	46	46	46			

Results

Optical

Document Class Issuing State Document type

PM KOR Republic of Korea - ePassport #2

Document # M24403909

Date of birth 01.01.1975

Date of expiry 10.03.2018

Sex M

Surname And Given Names HONG KIL DONG

Overall result

MRZ Document type Text data comparison Security Features

Overall result

RFID

DG

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

EF.COM EF.SOD EF.CVCA

Overall result

BAC PACE CA TA AA PA

Document processing is finished

0.04.223 DR SDK v.4.8 RFID SDK v.3.1 R10.15

Text data comparison of the passport

Document Reader

File View Help

Connect Disconnect Process Read RFID Options Documents DB

Images

WHITE IR UV

Details

MRZ (Visual zone) RFID-chip Text data comparison Graphic data comparison Security Features Messages log

Field type	Visual zone	RFID-chip	Visual zone
Portrait (Republic of Korea - ePassport #2)			

Results

Optical

Document Class Issuing State Document type

PM KOR Republic of Korea - ePassport #2

Document # M24403909

Date of birth 01.01.1975

Date of expiry 10.03.2018

Sex M

Surname And Given Names HONG KIL DONG

Overall result

MRZ Document type Text data comparison Security Features

Overall result

RFID

DG

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

EF.COM EF.SOD EF.CVCA

Overall result

BAC PACE CA TA AA PA

Document processing is finished

0.04.223 DR SDK v.4.8 RFID SDK v.3.1 R10.15

Graphic data comparison of the passport

