

ADAPTIVE RECOGNITION

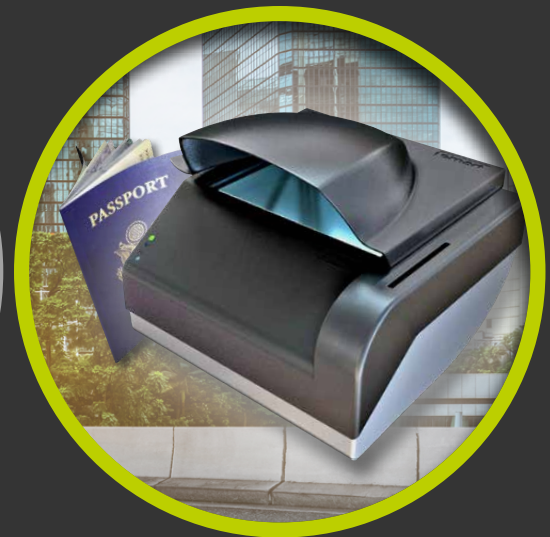
Image Recognition Products for Traffic, Security, ID Data Entry Automation and Biometric Identification



INTELLIGENT
TRANSPORTATION
SYSTEMS



RECOGNITION
SOFTWARE
& CAMERAS



IDENTITY DOCUMENT
READERS
& BIOMETRICS



market presence in
220+ countries worldwide



10,000+
satisfied partners



300+ employees



50,000+ ID scanning systems



80,000+ traffic systems

RECOGNITION SOFTWARE

SMART SURVEILLANCE





IDENTITY DOCUMENT READERS & BIOMETRICS

TYPICAL APPLICATIONS

Age verification? Automated personal data entry? ID authentication? ARH's industry leading identity document scanners help to fulfill your business needs with easy-to-operate, accurate and adaptable solutions. ARH provides a broad range of ID scanners in multiple configurations, as well as software that can be easily integrated into your existing workflow. The following examples include typical application areas where ARH solutions offer unique benefits.

24/7 BORDER CONTROL & IMMIGRATION

retail & convenience stores

LIQUOR / TOBACCO STORE AGE VERIFICATION

NIGHTCLUBS & BARS

HOTEL GUEST REGISTRATION

money exchange offices

scrap yards, public warehouses

CASINOS & GAMING

POLICE & LAW ENFORCEMENT

ID ISSUANCE QUALITY CHECK

DUTY-FREE SHOPS

sport events

ATMs and vending machines

ACCESS CONTROL SYSTEMS

BANKING

post offices

KNOW-YOUR-CUSTOMER APPLICATIONS

E-GATES, SELF-SERVICE CHECK-IN



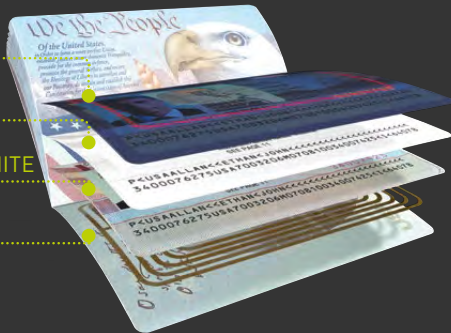
INTRODUCTION TO ID DOCUMENT SCANNING

UV

INFRARED

VISIBLE WHITE

RFID



As identity documents have undergone remarkable changes over the past decade, ARH's document scanning solutions have evolved and continue to represent the latest technology. The devices perform complex ID data capture and authentication, yet the simple usage and the high level of automation always ensure fast and easy operation with minimal training required.

ARH IDENTITY DOCUMENT SCANNERS

Each ARH document reader combines well-designed scanner hardware with versatile software that includes a wide range of functions for image processing, OCR, barcode reading and authentication.

A TYPICAL SCANNING PROCESS TAKES THREE STEPS:

1. IMAGE SCANNING:

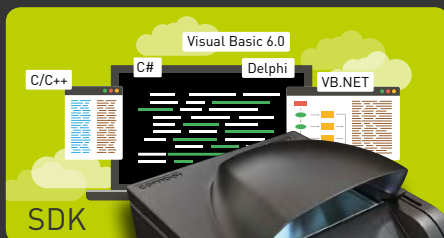
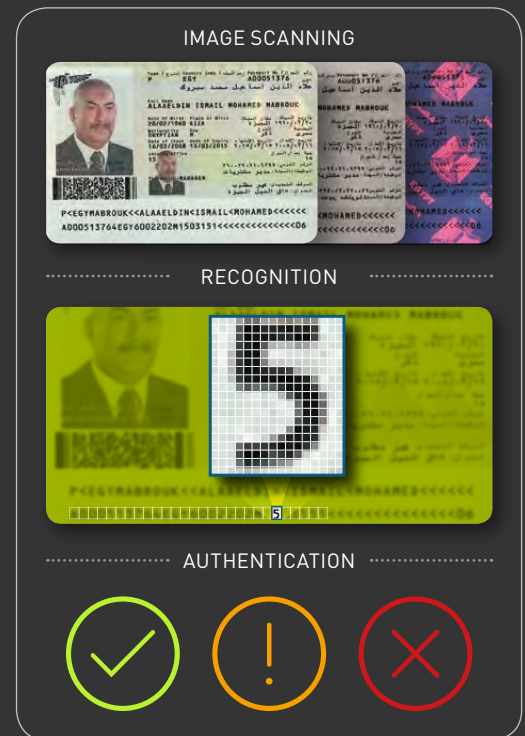
The scanner extracts optical data by capturing various images under different illuminations, and goes on to image processing (such as reflection removal).

2. PRINTED DATA READING AND CHIP READING:

ARH's world-leading OCR software recognizes all text-based information in addition to data extracted from 1D/2D barcodes and contact or contactless chips.

3. AUTHENTICATION:

The scanner performs multiple security checks on the captured images and extracted data for high-level document validation. Performing all 3 steps takes only a few seconds and requires no user intervention.



SOFTWARE INTEGRATION

Each of the ARH document scanning solutions present a universal tool suitable for any application. To ensure that ARH scanners fit any custom

workflow, all scanners are delivered with a versatile SDK that contains a comprehensive API for

seamless integration. Since all ARH scanners use the same unified SDK, once the integration is completed, any ARH device is compatible with the end-user application.

OCR + AUTHENTICATION

THE FOLLOWING DATA FIELDS CAN BE RECOGNIZED AND EXTRACTED:



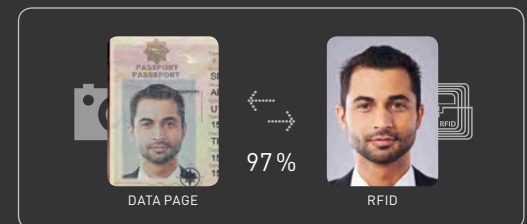
AUTHENTICATION

OVERVIEW

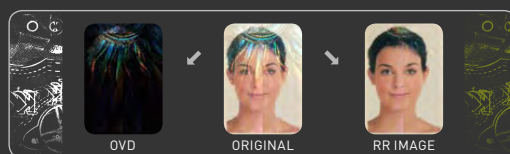
Captured images and extracted data are validated through various security checks: the checked data sets include MRZ checksums, expiration date, UV dullness, presence of B900 ink, data integrity between MRZ and RFID, biometric integrity and optional special features like advanced pattern matching or JURA IPI decoding. Some of the unique security functions are described below.

BIOMETRIC INTEGRITY CHECK: FACE COMPARE

Automated cross checking of the photo from the data page and the photo stored in the RFID. This feature effectively grants protection against altered photos on the data page.



SOPHISTICATED IMAGE PROCESSING

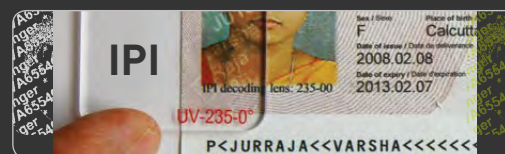


REFLECTION REMOVAL

This technology ensures that captured images are free of reflective security signs like holograms and other OVDs.

OVD VISUALIZATION

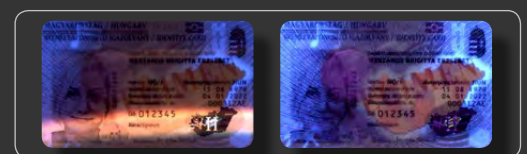
Optical elements taken off by Reflection Removal are presented on a separate image.



IPI* DECODING

IPI (Invisible Personal Information) encodes personal data into the photo of the data page, linking the photo of the owner and the ID together. The IPI is invisible to the naked eye; only authorized people are able to verify it manually with a special decoding lens or automatically by using ARH scanners.

*JURA JSP patented feature



ADAPTIVE LIGHT CONTROL

The system is well prepared for operating in variety of light conditions eliminating any kind of ambient light in the scanning process.

COMBO SCAN

ID AND PASSPORT SCANNER WITH OCR SOFTWARE LIBRARY & SDK

ULTRA COMPACT SCANNER FOR FAST DATA ENTRY

Combo Scan is an extremely compact, fast and fully automated, ID and passport scanner designed for data entry applications. Its accuracy and efficiency combined with ease of use ensure peace of mind for any business where ID or passport scanning is required. Hotel check-in, casinos, car rental or retail locations and liquor stores are just a few of the possibilities for utilization. The scanning process automatically starts when the document is placed in the reader. Several, high resolution images are captured, processed, and even the glossy reflections caused by laminated documents are removed for the best OCR results. Within only a few seconds, not only OCR, but (optional) RFID chip and bar code data are also available. This saves a lot of time – approximately 2-3 minutes per customer – and greatly improves the accuracy of the data compared to manual input. Maintenance-free operation is ensured by the no moving parts design. The scanner operates on a single USB; no external power supply is required – thus offering a small footprint usage in any front office environment.

MAIN BENEFITS

- 2-in-1 solution for scanning and OCR
- Automated data entry in any front office application
 - Quick and accurate OCR and barcode reading
 - Reading both ICAO MRZ and VIZ fields from ID cards (such as driving licenses)
 - Worldwide document support

KEY FEATURES

- MRZ reading and full-page ID-1 scanning in one device
- Ultra compact size
- High resolution 500 PPI imaging with visible white & IR illumination
- Proprietary glare-free imaging function and adaptive light control for efficient OCR and barcode reading
- Single USB connection, powered by a single USB connection
- LED-indicated operation feedback for better user experience

We stand behind our products' quality with confidence. We are proud to offer you a uniquely long, 3-year manufacturer's warranty for this product.



VISITOR
MANAGEMENT



HOTEL
CHECK-IN



CASINO
GAMING



CAR
RENTAL



RETAIL
SHOPS



MOBILE
OPERATORS

COMBO SCAN KIOSK

ID AND PASSPORT SCANNER FOR KIOSKS WITH OCR SOFTWARE LIBRARY & SDK

ULTRA COMPACT SCANNER FOR KIOSK INTEGRATION

Combo Scan Kiosk is a fast and fully automated ID and passport scanner designed for data entry applications. The scanner's low profile, simple rectangular form, and mounting holes make it ideal for integration with self-service kiosks, vending machines and other service desks. Accuracy and efficiency, combined with ease of use, greatly improves customer handling in various applications where reading and checking identity documents are required, for example age verification in vending machines, airport e-gates and access control gates. The scanner operates with USB and no external power supply is required. Thanks to Adaptive Light Control, this device can operate even in environments with exposure to a direct light source or excessive glare.

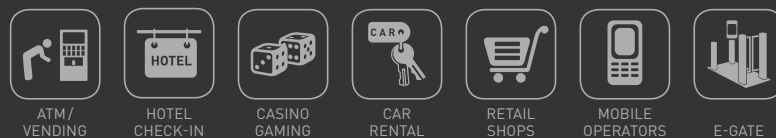
MAIN BENEFITS

- 2-in-1 solution for scanning and OCR
- Ultra compact size and seamless integration
- Self-service operation
- Reading barcodes and performing OCR in seconds
- Worldwide document support

KEY FEATURES

- MRZ reading and ID-1 scanning in one device
- Specifically designed for building into kiosks, desks, vending machines, etc.
- High resolution 500 PPI imaging with visible white & IR illumination
- Proprietary glare-free imaging function for efficient OCR and barcode reading
- Adaptive Light Control feature to eliminate ambient light interference

We stand behind our products' quality with confidence. We are proud to offer you a uniquely long, 3-year manufacturer's warranty for this product.



COMBO SMART

FULL-PAGE E-PASSPORT SCANNER WITH OCR SOFTWARE LIBRARY & SDK

UNIVERSAL SCANNER FOR ANY BUSINESS

Combo Smart scanners are a family of compact, full-page, multi-purpose passport and ID readers ideal for border control, customer verification in a bank, guest registration in a hotel, access control and law enforcement applications. Data extraction from driver's licenses or ID cards? Age verification? Know-your-customer (KYC) policy? RFID chip reading? Highly sophisticated document authentication? Combo Smart can do it all – available in multiple configurations, it is a great choice for its value. OEM versions are also available.

MAIN BENEFITS

- Various models for any business needs
- Reading and verifying both ICAO and non-ICAO compliant identity documents with worldwide coverage
- Processing complete passports checking both printed and digital data (ICAO MRZ, RFID, variety of security features)
- Achieving single step OCR and RFID reading for higher security and speed

KEY FEATURES

- Full-page scanning of passports, e-passports, visas, ID cards and driver licenses, boarding passes, etc.
- Compact, desktop format, full-page document scanning, dual antenna RFID system
- High resolution 500 PPI imaging with brilliant image quality
- Visible white, IR, UV illumination, and OVD visualization
- Proprietary glare-free imaging for efficient OCR and barcode reading

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ACCESS
CONTROL



BORDER
CONTROL



QUALITY
ASSURANCE



LAW
ENFORCEMENT



BANKING



HOTEL
CHECK-IN



MOBILE
OPERATORS

COMBO SMART KIOSK

FULL-PAGE E-PASSPORT SCANNER FOR KIOSKS WITH OCR SOFTWARE LIBRARY & SDK

UNIVERSAL SCANNER FOR BUILT-IN USE

Combo Smart Kiosk is a full-page ePassport/ID reader for kiosks and automated border control gates. The reader module appears in an incredibly compact – 10 cm / 4 inches tall – brick design with mounting points, recessed connections and status LEDs. This physical form of Combo Smart Kiosk has been optimized for e-gates, CUSS projects and ATM user verification. The device has a full-size, ID-3 type document reading glass platen and replaceable document guide bracket, which is fully 180 degrees reversible during installation, allowing more convenient use and better access to the glass platen. Similar to Combo Smart, the reader is able to perform a broad spectrum authentication and data reading tasks. It can be used intuitively – requiring no training for the operating personnel.

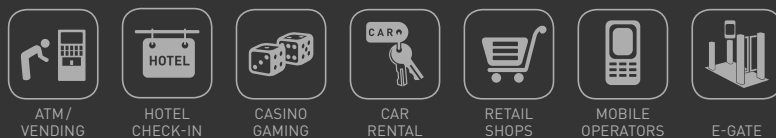
MAIN BENEFITS

- Incredibly compact design for built-in use
- Accurate reading and verifying of ICAO and non-ICAO compliant identity documents
- Barcode recognition from printed documents and smartphones
- Environment-independent operation
- Single step OCR and RFID reading for higher security and better speed
- Eliminates counterfeit ID acceptance

KEY FEATURES

- Adaptive Light Control feature to eliminate ambient light interference
- Proprietary glare-free imaging function for efficient OCR and barcode reading
- High resolution 500 PPI imaging with brilliant image quality
- Visible white, IR, UV illumination, and OVD visualization
- Full-page document scanning, dual antenna RFID function

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COMBO SMART N

STANDALONE PASSPORT SCANNER WITH NETWORK CONNECTIVITY AND WEB INTERFACE

ALL-IN-ONE DOCUMENT READER AND VERIFICATION TERMINAL

Combo Smart N (N is short for Network), is an all-in-one ID verification terminal with an onboard processing system producing ready-to-use data. Unlike other ID readers that need a local PC connection, it performs every task on its own. This standalone device reads all ID information without a PC or laptop and works perfectly with thin clients. In fact, it is compatible with any kind of environment, making it platform independent. Like an IP security camera, it can be accessed via smartphones, tablets – displaying real time results. Similar to Combo Smart, the reader is able to perform full spectrum authentication and data reading tasks.

MAIN BENEFITS

- ID data presented in an easily accessible format
- Environment-independent solution for any ID reading purpose
- Thin client support
 - Immediate data transfer to selected location
 - Solution for high-security IT systems – no installation required
 - Supports duplex scanning

KEY FEATURES

- Onboard document processing
- Wi-Fi and Ethernet communication
- Configurable interface, accessible via a web browser
- HTTP / HTTPS, FTPS and SMTP communication protocols
- Websocket: push and pull mode

We stand behind our products' quality with confidence. We are proud to offer you a uniquely long, 3-year manufacturer's warranty for this product.



BORDER
CONTROL



QUALITY
ASSURANCE



LAW
ENFORCEMENT



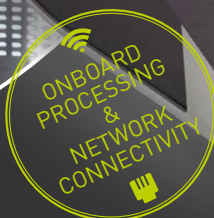
BANKING



HOTEL
CHECK-IN



MOBILE
OPERATORS



PRMc

FULL-PAGE E-PASSPORT SCANNER WITH OCR SOFTWARE LIBRARY & SDK

HIGH-END PASSPORT READER FOR MISSION-CRITICAL APPLICATIONS

PRMc is a full-page, multi-purpose scanner capable of authenticating various types of identity documents: passports, ID cards, visas and driving licenses – particularly in border control and high security applications. The printed data is extracted from the entire page (MRZ, VIZ and 1D & 2D bar codes) while digital data is obtained from contactless (RFID) chips. OCR and RFID reading is performed in a single step. The scanner utilizes multiple illumination sources (visible white, IR and UV), hardware-assisted reflection removal (RR), OVD visualization and ARH's sophisticated Adaptive Light Control function. In order to counteract the most often forged part of passports, PRMc is capable of capturing a 960 PPI image of the bearer's face photo from the data page. This results in an exceptionally high-resolution image, offering in-depth verification and allowing automatic Jura IPI decryption as well. PRMc is ideal for any application from border control and immigration to security and commercial environments, such as banks, hotels and telecom retailers. The scanner's robust design and its scratch resistant tempered glass reading surface assure flawless functioning in any mission critical operation.

MAIN BENEFITS

- Ideal for high security and border control applications
- Complete passport processing (ICAO MRZ, non-ICAO VIZ fields, single-step RFID reading and IPI decoding)
- Suitable for both kiosk and desktop use
- Maintenance-free operation due to no moving parts and durable scratch-resistant glass

KEY FEATURES

- Full-page document scanning with dual-antenna RFID system
- High resolution 475 PPI imaging with brilliant image quality in visible white, IR, UV illumination
- Additional 960 PPI resolution passport photo capturing
- Superb image processing: hardware-assisted reflection removal (RR), OVD visualization and Adaptive Light Control to eliminate ambient light

We stand behind our products' quality with confidence. We are proud to offer you a uniquely long, 3-year manufacturer's warranty for this product.



BORDER
CONTROL



QUALITY
ASSURANCE



SELF-
SERVICE



BANKING



HOTEL
CHECK-IN



E-GATE



FORENSIC
DOCUMENT
VERIFICATION



IDENTITY DOCUMENT READING AND VERIFICATION SOFTWARE

SOFTWARE LIBRARY & SDK

ARH offers reliable and high-speed data reading and verification software for all identity document types worldwide. These software modules are available for ARH ID and passport scanning devices.

VERSIONS & FEATURES



• PASSPORT READER SOFTWARE

This software and SDK comes with each ARH passport reader unit. The software contains 3 sets of tools. Firstly, image processing functions – cropping, face photo cutout, rotation, reflection removal, and Adaptive Light Control. Secondly, data reading tools – standard MRZ as well as 1D and 2D bar codes, and extended RFID reading functionality. Thirdly, it also contains authentication of standardized safety features like MRZ consistency check, B900 ink check, UV dullness check and various printed/digital crosscheck functions.



• CAPTURE SOFTWARE

This software is capable of reading non-standardized text, supporting Latin characters and alphabets using Latin characters with diacritical marks, for example the Slovakian and Romanian alphabet. As a custom development, it may even be capable of supporting unique characters like those of the Cyrillic alphabet.



• VERIFY SOFTWARE

In addition to VIZ OCR, this software is capable of checking standard as well as nonstandard security features like pattern checking illuminated by various light sources, geometry analysis and OVI checks according to the characteristics of the given document type.

• SUPPORTED DOCUMENT TYPES:

- Internationally accepted travel documents (different types of passports, visas)
- Local identification documents like ID cards, driver licenses
- Local residence permits, address cards, health insurance cards, etc.

MAIN BENEFITS

- Fast – the data reading and verification checks are performed within a few seconds compared to manually entering the ID data, which takes several minutes to complete
- Accurate – no mistakes compared to error-prone manual entries
- Reliable – high-reliability verification checks allow this solution to be deployed at heavy demand border crossings
- Worldwide – internationally accepted travel documents and local IDs are both supported
- Up-to-date – new document types are added regularly



BORDER
CONTROL



QUALITY
ASSURANCE



VENDING



BANKING



HOTEL
CHECK-IN



E-GATE



CASINO
GAMING



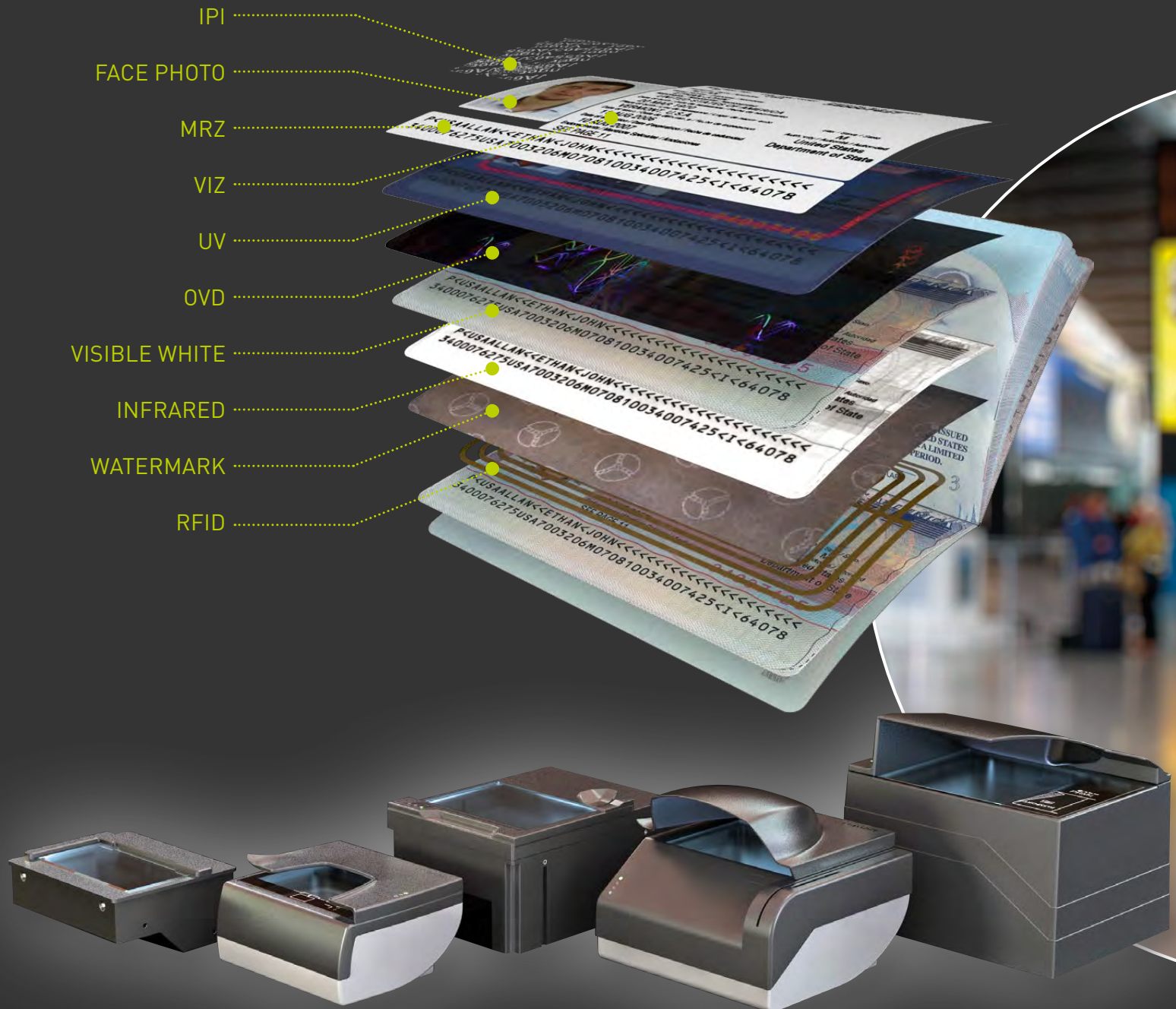
CAR
RENTAL



RETAIL
SHOPS



MOBILE
OPERATORS



COMPARISON CHART

		COMBO SCAN		COMBO SCAN KIOSK	COMBO SMART	
		COMBO SCAN	COMBO SCAN R	COMBO SCAN KIOSK	COMBO SMART L	COMBO SMART RL
Imaging	Active scan area	125 mm × 55 mm (4.92" × 2.17")			125 mm × 88 mm (4.92" × 3.46")	
	Resolution	500 dpi			500 dpi	
Illumination sources	Visible white	YES			YES	
	Infrared	YES			YES	
	UV	-			YES	
	Automatic Document Detection (ADD)	YES			YES	
	Reflection Removal (RR)	YES			YES	
	Adaptive Light Control	YES			YES	
	OVD visualization	YES			YES	
READING CAPABILITY		COMBO SCAN	COMBO SCAN R	COMBO SCAN KIOSK	COMBO SMART L	COMBO SMART RL
Printed data	MRZ according to ICAO9303	YES			YES	
	VIZ Reading	YES			YES	
	Barcode	YES			YES	
Electronic data	RFID (reading & writing) ISO 14443	-	YES	-	-	YES
	Contact chip according to ISO7816	-	-	-	-	-
AUTHENTICATION		COMBO SCAN	COMBO SCAN R	COMBO SCAN KIOSK	COMBO SMART L	COMBO SMART RL
Standardized checks		MRZ consistency check, B900 ink check, UV dullness check, MRZ-RFID DG1 data crosscheck, printed photo vs. RFID photo crosscheck				
Document-specific checks		available with optional VERIFY software module				
JURA IPI & LetterScreen		-				
RFID authentications (where applicable)		ICAO Doc. 9303 LDS 1.7, ISO 18013 (Drivers License) PKI 1.1, BAC, EAC, EAC2.0, PACE, PACE-CAM, AA, PA, TA, CA, BAP, EAP				
COMMUNICATION		USB				
PROGRAMMING & INTERFACES		COMBO SCAN	COMBO SCAN R	COMBO SCAN KIOSK	COMBO SMART L	COMBO SMART RL
Supported operating systems		Windows, Linux				
Software Development Kit (SDK)		included for all models				
Programming languages		C/C++, C#, Visual Basic 6.0, Delphi, VB.NET, Java				
Output formats	OCR data & authentication results	xml, csv				
	Scanned images	BMP, JPG, JPG2000 and PNG				
MECHANICAL & OTHER DATA		COMBO SCAN	COMBO SCAN R	COMBO SCAN KIOSK	COMBO SMART L	COMBO SMART RL
Size (width × depth × height)		152 mm × 130 mm × 82 mm (5.98" × 5.12" × 3.23")			178 mm × 176 mm × 146 mm (7.01" × 6.93" × 5.75")	
Power supply		USB			Universal external power supply (100-240 V AC, 50/60 Hz)	
Production Code		COMBOSCAN-01-2100	COMBOSCAN-01-2280	COMBOSCAN-01-2100	COMBOSMART-01-2308	COMBOSMART-01-2388
Warranty		3 years			3 years	

IDENTITY DOCUMENT READERS & BIOMETRICS

COMBO SMART		COMBO SMART N	COMBO SMART Kiosk		PRM _c
COMBO SMART LS	COMBO SMART RLS	COMBO SMART N RLSW	COMBO SMART KIOSK L	COMBO SMART KIOSK RL	PRM _c
125 mm × 88 mm (4.92" × 3.46")			130 mm × 90 mm (5.12" × 3.55")		130 mm × 98 mm (5.12" × 3.86")
	500 dpi			500 dpi	475 dpi / 960 dpi (for photo area)
	YES			YES	YES
	YES			YES	YES
	YES			YES	YES
	YES			YES	YES
	YES			YES	YES
	YES			YES	YES
	YES			YES	YES
COMBO SMART LS	COMBO SMART RLS	COMBO SMART N RLSW	COMBO SMART KIOSK L	COMBO SMART KIOSK RL	PRM _c
	YES			YES	YES
	YES			YES	YES
	YES			YES	YES
–		YES	–	YES	YES
	YES		–	–	–
COMBO SMART LS	COMBO SMART RLS	COMBO SMART N RLSW	COMBO SMART KIOSK L	COMBO SMART KIOSK RL	PRM _c
MRZ consistency check, B900 ink check, UV dullness check, MRZ-RFID DG1 data crosscheck, printed photo vs. RFID photo crosscheck					
available with optional VERIFY software module					
–					YES
ICAO Doc. 9303 LDS 1.7, ISO 18013 (Drivers License) PKI 1.1, BAC, EAC, EAC2.0, PACE, PACE-CAM, AA, PA, TA, CA, BAP, EAP					
USB		Ethernet + wifi		USB	USB
COMBO SMART LS	COMBO SMART RLS	COMBO SMART N RLSW	COMBO SMART KIOSK L	COMBO SMART KIOSK RL	PRM _c
Windows, Linux					
included for all models					
C/C++, C#, Visual Basic 6.0, Delphi, VB.NET, Java					
xml, csv					
BMP, JPG, JPG2000 and PNG					
COMBO SMART LS	COMBO SMART RLS	COMBO SMART N RLSW	COMBO SMART KIOSK L	COMBO SMART KIOSK RL	PRM _c
178 mm × 176 mm × 146 mm (7.01" × 6.93" × 5.75")			150 mm × 195 mm × 117 mm (5.9" × 7.68" × 4.60")		213 mm × 173 mm × 179 mm (8.39" × 6.81" × 7.08")
Universal external power supply (100-240 V AC, 50/60 Hz)			Universal external power supply (12V DC)		Universal external power supply (100-240 V AC, 50/60 Hz)
COMBOSMART-01-2348	COMBOSMART-01-23C8	COMBOSMARTN-01-25C8	COMBOSMARTK-01-2208	COMBOSMARTK-01-2288	PRMC-02-248E
3 years			3 years		3 years

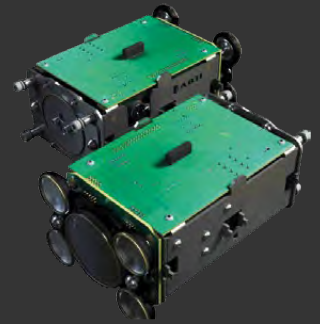
CUSTOM MADE PRODUCTS

Still haven't found what you were looking for? We are keen to listen to the specific needs of our customers and ready to utilize our vast engineering expertise to create a customized product for you. By having all the essential know-how, hands-on-experience and our own manufacturing and fast prototyping facility, we can deliver custom-made products based on your requirements in a short time, meeting strict quality control standards.

PRODUCT DEFINED BY CLIENT

Not many independent developer-manufacturer companies remain active in this industry for 26 years – savvy, experienced, with their own production line – in short, having all the key ingredients for the development of highly specific products. ARH is one of the few such corporations.

OEM products have always been a prominent field for ARH and they will remain a high priority and source of self-esteem. So far, ARH has performed over 500 OEM assignments. Some of our off-the-shelf products were originally developed as OEM projects.

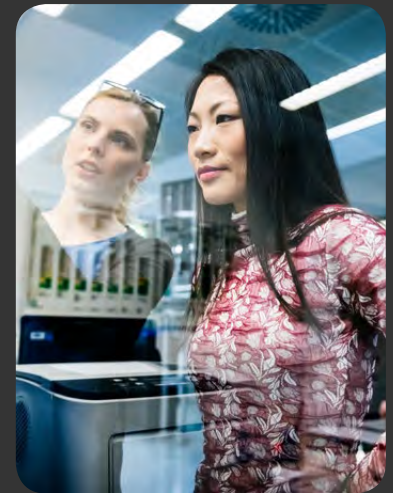


KEYWORD: FLEXIBILITY

All OEM challenges are welcome, whether it is re-branding, changing the color scheme, the complete redesign of a product from scratch or serial production.

1. ARH's own SW and HW engineering teams have vast experience in creating prototypes.
2. The easy and cost-effective way to impact your potential client is impressive design. ARH's own product design team will find the perfect form – innovative, functional and eye-catching combination.
3. Within tight deadlines, ARH can produce 3D-printed housing or even working prototypes.
4. Products are regularly tested in ARH's own labs (EMC, radio and other).
5. Approved prototypes are soon turned into serial production models.

Tell us your problem and we'll help you find a solution.



CUSTOMIZED SOLUTIONS

SOME EXAMPLES OF OUR LATEST CUSTOM MADE PROJECTS

1. ARH 25MP DUAL LENS ANPR SMART CAMERA

ARH 25 MP Ultra High Resolution Traffic Camera deploys its unmatched optical sensitivity to produce exceptional ANPR results and identify/recognize other optical marks, e.g. the visual characteristics – even punch holes – of toll stickers. The camera is sensitive to the smallest optical details, thanks to the exceptionally high 1.4 pixel = 1 millimeter resolution. The camera's built-in laser beam has 2 roles: the high precision detection of passing vehicles (triggering) and vehicle categorization – based on physical dimensions. The captured images are processed by the industry's best, state-of-the-art CARMEN® ANPR engine. The moving-part-free design ensures solid, reliable functioning in harsh environments like operating while mounted on a continuously vibrating gantry. Besides high detail images and ANPR, the camera is also great for tasks including finding blacklisted or stolen vehicles.



2. E-PASSPORT READER WITH AN EXTRA LARGE SCANNING WINDOW

ARH's client wanted a stylish fully featured e-passport reader to scan landing cards, which are twice as large as a passport data page. Besides designing the appropriate lighting, the real challenge was to integrate and fine-tune the oversize RFID antenna. The relevant ISO and ICAO specifications had ID-1 antenna size (54 x 86 mm) and in the new product chips had to communicate with an antenna 4.5 times larger than that. ARH's professional design team worked hard to achieve what at first sight had seemed mission impossible. In the end, the reader got an extra ID face photo recognition camera, built-in reflection removal technology and a sleek design. The project turned out to be a success story in its 5th generation today, with more than 3000 units delivered.



ABOUT ARH

100,000+ LPR SYSTEMS

License Plate Recognition (LPR) – also known as Automatic Number Plate Recognition (ANPR) – is ARH's flagship technology. The 2 key components of LPR systems are the **LPR software**, purpose-made to read vehicle license plates, and dedicated **LPR cameras**.

ARH's flagship software product is the Carmen® ANPR engine trained in-house to reliably read all license plates in the world. Carmen's cutting edge is its alphabet-independent operation of unrivalled speed and accuracy. Carmen® ANPR reads license plates from many image sources: still images as well as live or recorded video streams. It offers country-independent and alphabet-independent recognition of not only Latin characters, but also Arabic, Cyrillic, Chinese, Korean, Thai and many more alphabets.

We at ARH develop, manufacture and offer a broad range of purpose-built LPR cameras. For LPR-optimized imaging, purpose-built cameras yield far better results than general-purpose cameras. This is why ARH developed a line of dedicated plate recognition cameras – for fixed, portable and mobile use – designed with the entire process of LPR in

mind: triggering, image capturing, image preselection and, optionally, onboard plate recognition.

License Plate Recognition is used excessively all over the world for plate-based toll collection, automated border control, traffic monitoring, traffic security monitoring, traffic and speed enforcement, parking management, vehicle access control and many other application areas.

With hardware and software development in one hand, in-depth industrial expertise accumulated in the course of 28 years of in-house product development, we have:

- The potential to develop electronic, mechanical and optical systems and software;
- Our own manufacturing base to produce electronic and mechanical equipment as well as complete systems;
- Service potential – from installation through operation.

In other words, ARH can offer unrivalled benefits in **License Plate Recognition**.

60,000+ ID READER SYSTEMS

We design and deliver purpose-made **ID scanners** and **passport readers** that can read ALL identity documents in the world. ARH passport readers extract both printed and electronic data from official travel documents and national IDs including ID cards and driver's licenses. A technologically more challenging task is detecting fake, forged or tampered ID documents – a process called verification or authentication. ARH's passport readers perform identity document authentication within seconds by checking a range of document-specific security features in various wavelengths of light. Authentication includes analyzing data integrity, too: cross-checking the captured printed and electronic information in compliance with the latest and most advanced e-passport standards.

ID document reading is widely used all over the world for 24/7 Automated Border Control (ABC), e-gates, airline check-in systems, know-your-

customer schemes in banking, hotel guest registration, physical access control systems and age verification in bars, casinos and the gaming industry.

With hardware and software development in one hand, field-tested innovative technology, in-depth industrial expertise accumulated in the course of 28 years of product development, we have:

- A team of over 200 engineers;
- Our own manufacturing base to produce electronic and mechanical equipment;
- The potential to develop electronic, mechanical and optical systems and dedicated OCR software.

In other words, ARH can offer unrivalled benefits in **ID reader systems**.

12,000+ SATISFIED PARTNERS

Many of ARH's clients are system integrators creating **LPR systems** and **ID reader systems** – both of which are based on Optical Character Recognition (OCR). Read about these technologies here.

Beside OCR-based technologies, we have multiple other product lines. A key area in every Smart City concept is efficient traffic management. **Intelligent Transportation Systems (ITS)** can have a great positive impact on urban growth, safety and environment. ARH's non-intrusive intelligent traffic monitoring devices with on-board video analytics deliver real-time, accurate information with the aim to streamline traffic and maximize urban infrastructure potentials.

Video analytics plays a great role in **traffic enforcement** by automatically recognizing traffic offences and assisting the work of traffic authorities with photo and video evidence records.

Smart CCTV detecting user-defined events is used for monitoring urban areas, sport stadiums, shopping malls, fleets of public transportation as well as logistics and manufacturing sites – not only as a means of proactive security management, but also as a new and untapped

marketing tool. Intelligent video surveillance will never completely replace human workforce – but it can always ideally support personnel in their daily work with smart technology.

As a privately-owned company with headquarters in Budapest, Hungary, ARH has direct market presence in 140 countries and a network of 50 country-level sales representatives. We have:

- Multiple market-leading ARH products
- A team of over 200 engineers
- Product development potential – turning ideas into prototypes and serial production

Beside **LPR systems** and **ID reading systems**, our technology is used in ITS, plate-based vehicle access control, traffic enforcement based on video analytics and intelligent Video Management System or Smart CCTV systems.

In other words, ARH can offer unrivalled benefits – as proven by over **12,000 satisfied partners** worldwide.

CONTACT ARH



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CERTIFICATIONS

We are committed to delivering quality products and services that exceed customer requirements and expectations at all times, in an environment that supports and promotes continuous improvement.

Three ISO certificates recognize that ARH's operation conforms to the highest international standards.



ISO 9001:2015

Quality management – manufacturing, sales, marketing and customer support.



ISO 14001:2015

Environmental management – ARH is committed to be a green company.



ISO 27001:2013

Information security management – protection of confidentiality, integrity and availability of sensitive data at ARH.

SOCIAL MEDIA



[linkedin.com/company/adaptive-recognition](https://www.linkedin.com/company/adaptive-recognition)



[youtube.com/arhungary](https://www.youtube.com/arhungary)



twitter.com/aracorpora



MICROSITES

<https://carmen.hu/>



<https://carmen-go.com/>



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DIGITAL VERSION:





2019/Q1