market presence in 220+ countries worldwide

10,000+ satisfied partners

300+ employees

50,000+ ID scanning systems

80,000+ traffic systems
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
- NIGHTCLUBS & BARS
- 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

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

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.
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

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 KIOSK

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

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 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.
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.
IDENTITY DOCUMENT READING AND VERIFICATION SOFTWARE

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
IPI
FACE PHOTO
MRZ
VIZ
UV
OVD
VISIBLE WHITE
INFRARED
WATERMARK
RFID
## COMPARISON CHART

<table>
<thead>
<tr>
<th>MODEL</th>
<th>COMBO SCAN</th>
<th>COMBO SCAN R</th>
<th>COMBO SCAN KIOSK</th>
<th>COMBO SMART L</th>
<th>COMBO SMART RL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imaging</td>
<td>Active scan area</td>
<td>125 mm × 55 mm (4.92” × 2.17”)</td>
<td>125 mm × 88 mm (4.92” × 3.46”)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Resolution</td>
<td>500 dpi</td>
<td>500 dpi</td>
<td>500 dpi</td>
<td>500 dpi</td>
</tr>
<tr>
<td></td>
<td>Visible white</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Infrared</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td></td>
<td>UV</td>
<td>–</td>
<td>–</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Automatic Document Detection (ADD)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reflection Removal (RR)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adaptive Light Control</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OVD visualization</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Reading capability</td>
<td>MRZ according to ICAO9303</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VIZ Reading</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Barcode</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RFID (reading &amp; writing) ISO 14443</td>
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<td>–</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>Contact chip according to ISO7816</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Authentication</td>
<td>Standardized checks</td>
<td>MRZ consistency check, B900 ink check, UV dullness check, MRZ-RFID DG1 data crosscheck, printed photo vs. RFID photo crosscheck</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Document-specific checks</td>
<td>available with optional VERIFY software module</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>JURA IPI &amp; LetterScreen</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RFID authentications (where applicable)</td>
<td>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</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>USB</td>
<td>USB</td>
<td>USB</td>
<td>USB</td>
<td>USB</td>
</tr>
<tr>
<td>Programming &amp; Interfaces</td>
<td>Supported operating systems</td>
<td>Windows, Linux</td>
<td>Windows, Linux</td>
<td>Windows, Linux</td>
<td>Windows, Linux</td>
</tr>
<tr>
<td></td>
<td>Software Development Kit (SDK)</td>
<td>included for all models</td>
<td>included for all models</td>
<td>included for all models</td>
<td>included for all models</td>
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<tr>
<td>Output formats</td>
<td>OCR data &amp; authentication results</td>
<td>xml, csv</td>
<td>xml, csv</td>
<td>xml, csv</td>
<td>xml, csv</td>
</tr>
<tr>
<td></td>
<td>Scanned images</td>
<td>BMP, JPG, JPG2000 and PNG</td>
<td>BMP, JPG, JPG2000 and PNG</td>
<td>BMP, JPG, JPG2000 and PNG</td>
<td>BMP, JPG, JPG2000 and PNG</td>
</tr>
<tr>
<td>Mechanical &amp; Other Data</td>
<td>Size (width × depth × height)</td>
<td>152 mm × 130 mm × 82 mm (5.98” × 5.12” × 3.23”)</td>
<td>178 mm × 176 mm × 146 mm (7.01” × 6.93” × 5.75”)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Power supply</td>
<td>USB</td>
<td>USB</td>
<td>Universal external power supply (100-240 V AC, 50/60 Hz)</td>
<td>USB</td>
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<td></td>
<td>Production Code</td>
<td>COMBOSCAN-01-2100</td>
<td>COMBOSCAN-01-2280</td>
<td>COMBOSCANK-01-2100</td>
<td>COMBOSMART-01-2308</td>
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<td>Warranty</td>
<td>3 years</td>
<td>3 years</td>
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</tr>
</tbody>
</table>
## Identity Document Readers & Biometrics

### COMBO SMART

<table>
<thead>
<tr>
<th>Model</th>
<th>Active scan area</th>
<th>Resolution</th>
<th>Illumination sources</th>
<th>Automatic Document Detection (ADD)</th>
<th>Reflection Removal (RR)</th>
<th>Adaptive Light Control</th>
<th>OVD visualization</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMBO SMART L5</td>
<td>125 mm × 88 mm (4.92'' × 3.46&quot;)</td>
<td>500 dpi</td>
<td>YES</td>
<td>YES</td>
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<td>YES</td>
<td>YES</td>
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<tr>
<td>COMBO SMART RLS</td>
<td>130 mm × 90 mm (5.12'' × 3.55&quot;)</td>
<td>500 dpi</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

- 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

### COMBO SMART N

<table>
<thead>
<tr>
<th>Model</th>
<th>Active scan area</th>
<th>Resolution</th>
<th>Illumination sources</th>
<th>Automatic Document Detection (ADD)</th>
<th>Reflection Removal (RR)</th>
<th>Adaptive Light Control</th>
<th>OVD visualization</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMBO SMART N RLSW</td>
<td>125 mm × 88 mm (4.92'' × 3.46&quot;)</td>
<td>500 dpi</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>COMBO SMART KIOSK L</td>
<td>130 mm × 90 mm (5.12'' × 3.55&quot;)</td>
<td>500 dpi</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

### COMBO SMART Kiosk

<table>
<thead>
<tr>
<th>Model</th>
<th>Active scan area</th>
<th>Resolution</th>
<th>Illumination sources</th>
<th>Automatic Document Detection (ADD)</th>
<th>Reflection Removal (RR)</th>
<th>Adaptive Light Control</th>
<th>OVD visualization</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMBO SMART KIOSK RL</td>
<td>130 mm × 98 mm (5.12'' × 3.86&quot;)</td>
<td>475 dpi / 960 dpi (for photo area)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

### PRMc

- 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

### 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
- Available with optional VERIFY software module

### RFID authentications
- 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

### Mechanical & Other Data
- Size (width × depth × height)
  - COMBO SMART L5: 152 mm × 130 mm × 82 mm (5.98'' × 5.12'' × 3.23'')
  - COMBO SMART RLS: 178 mm × 176 mm × 146 mm (7.01'' × 6.93'' × 5.75'')
  - COMBO SMART N RLSW: 150 mm × 195 mm × 117 mm (5.9” × 7.68” × 4.60”)
  - COMBO SMART KIOSK L: 213 mm × 173 mm × 79 mm (8.39’’ × 6.81’’ × 3.08’’)
  - COMBO SMART KIOSK RL: 213 mm × 173 mm × 79 mm (8.39’’ × 6.81’’ × 3.08’’)

### Power supply
- USB Universal external power supply (100-240 V AC, 50/60 Hz)
- Universal external power supply (12V DC)

### Production Code
- COMBOSMART-01-2348
- COMBOSMART-01-2208

### Warranty
- 3 years

### Communication
- USB
- Ethernet + wifi

### Reading Capability
- Printed data
  - COMBO SMART L5: YES
  - COMBO SMART RLS: YES

- VIZ Reading
  - COMBO SMART L5: YES
  - COMBO SMART RLS: YES

- Barcode
  - COMBO SMART L5: YES
  - COMBO SMART RLS: YES

- Electronic data
  - RFID (reading & writing)
    - ISO 14443: YES

- Contact chip according to ISO7816: YES

### Programming & Interfaces
- 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

### Technical specifications are subject to change without prior notice.

This document does not constitute an offer.
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.
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 × 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 word. 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**.
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.
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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
youtube.com/arhungary
twitter.com/aracorpusa

MICROSITES
https://carmen.hu/
https://carmen-go.com/
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