



AUTOMATIC NUMBER PLATE RECOGNITION

User Manual

Carmen[®]Go

Full user manual for Carmen[®] GO ANPR application, including detailed installation instructions and screen-by-screen guide for all features of the software.



CARMEN® GO USER MANUAL

Document version: 1.4.3.

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About CARMEN® GO

CARMEN® GO is a camera-independent, plug-and-play ANPR service that recognizes license plates from live or recorded video streams. CARMEN® GO is available with MMR technology for make, model, category and color recognition. Setup is easy: it only takes a few minutes to create your ANPR solution without any ANPR system integration skills. CARMEN® GO works fully automatically, as it has a self-optimized operation for the best ANPR results. The streams are processed automatically, so there is no need for image preselection. Up to 8 parallel streams can be processed at the same time. It has a user-friendly web interface where the basic input (camera or video stream) and output settings of CARMEN® GO can be done.

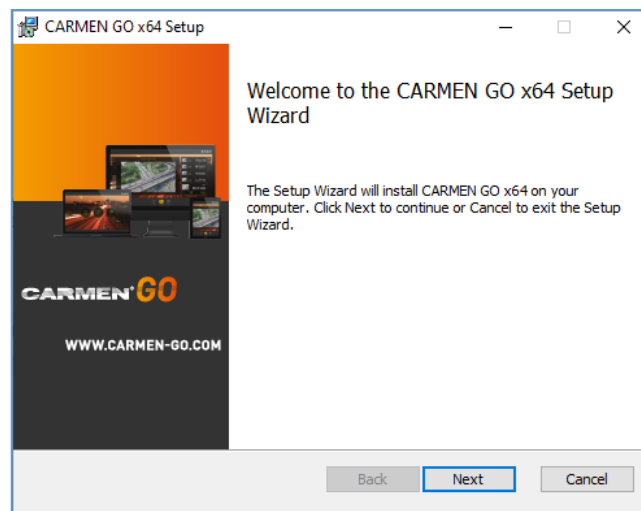


INSTALLING CARMEN® GO

1. SOFTWARE INSTALLATION

1. The download link for the CARMEN® GO Installation Package is distributed via our official webpage:

<https://adaptiverecognition.com/app/uploads/DOC/Software/Carmen/installer/current/CarmenGo.msi>



2. Install CarmenGo_x.x.x.xxxxx.msi (If you have Carmen® GO already, do not need to uninstall previous version to upgrade)
3. Follow the installation steps and accept the END-USER LICENSE AGREEMENT by checking the “I accept the terms in the License Agreement” box and clicking on “Next”.
4. If Control Panel window is open during the installation and the software ask to close it, it can only be done manually.
5. If you are upgrading a previous version of Carmen® GO to a newer version, always restart your computer after the installation!
6. CARMEN® GO and Control Panel are now installed on your computer and ready to use.

Note

Please install corresponding regional engine at the end of the process, as Carmen® GO comes with a general engine preinstalled without country recognition. Engines are available: <https://adaptiverecognition.com/doc/license-plate-recognition-traffic-analytics/carmen-go/#software>



Note

If any error occurs during use, run "CARMENGoInstaller_x64_x.x.xx.msi" file and select "Repair" button to fix any issue.

2. LICENSE INSTALLATION

There are two options:

1. Before you can start using CARMEN® GO, attached to the same message with the download link, you will find the license files that you need to upload to your hardware key to enable LPR. You can apply them with the License Manager utility. Please find the user guide here: https://adaptiverecognition.com/app/uploads/DOC/Software/Carmen/license_manager_user_manual.pdf
2. License server: When you check in "**Advanced**" option, you will be able to set remote license usage mode, when use a [License Server](#). Green color indicates in the Control Panel, that License Server is active.

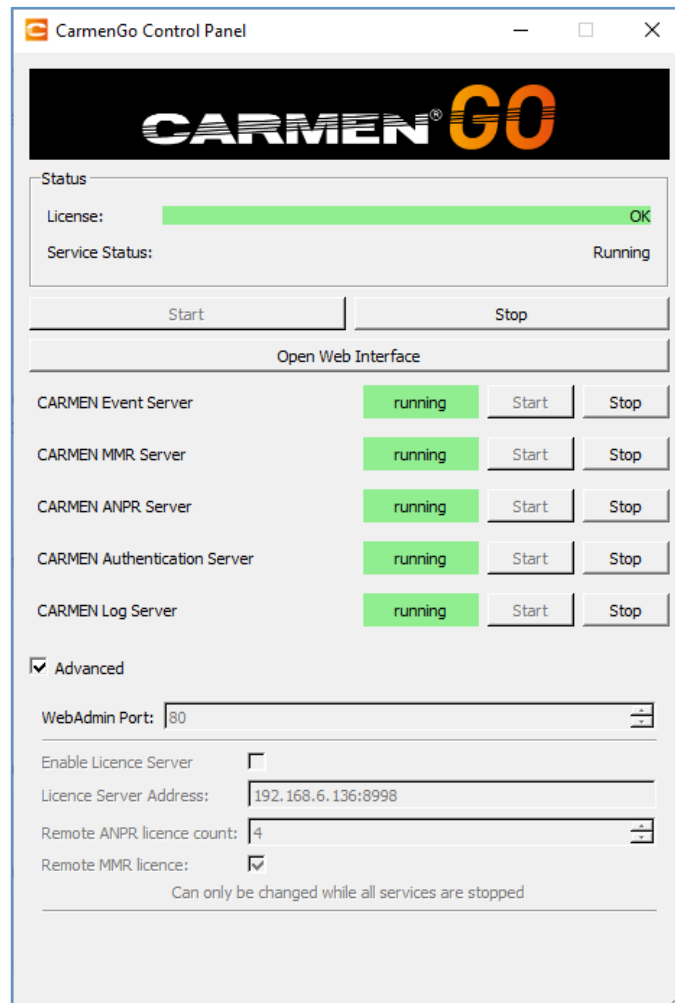


CONTROL PANEL

Control Panel is a tool for easy starting and monitoring the status of the CARMEN® GO service – accessible from the Start menu. Here you can also check license and NNC status.

If both the NNC key and CARMEN® GO license are ok, click on the **“Start”** button to start the CARMEN® GO service.

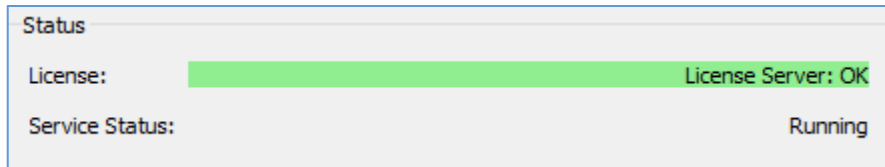
Once running, you can start using CARMEN® GO by clicking the **“Open Web Interface”** button.



Enable License Server: When you check in “Advanced” option, you will be able to set remote license usage mode, when use a [License Server](#).

The server computer, which has the [hardware key\(s\)](#) (a.k.a HW Key or NNC) with the licenses plugged in, runs the Server Application.

Client computer may join this server by using the Client Application (which is integrated in the CARMEN® GO) that, upon a successful configuration, will make it possible to do ANPR processes without any HW Key attached to the client computer(s).



Note

You can only use the application in Advanced menu, if each service is stopped.

“Open Web Interface” will open the CARMEN® GO Management page in your default internet browser. (The interface page is optimized for Google Chrome browser)

Note

Alternatively: Open your internet browser (Chrome, Firefox, Opera, Safari) and type in the address bar: <http://127.0.0.1/> or <http://localhost/> to start using CARMEN® GO.

- If your Web server default port is reserved, you can change it in the Advanced menu.

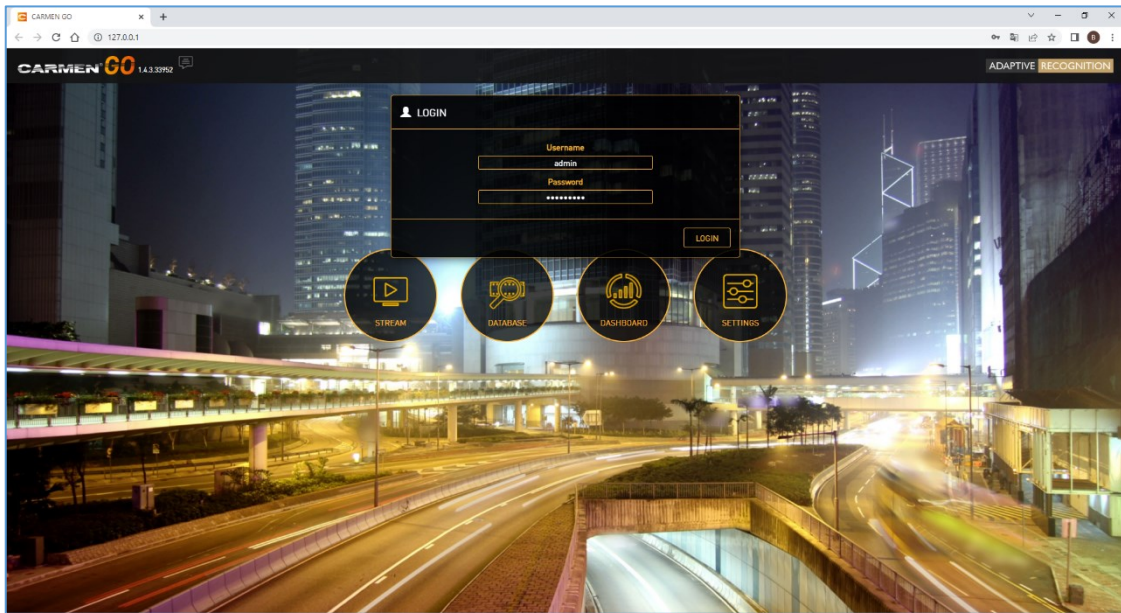
! Important

Closing the browser and Control panel does not stop the service, it will still be running in the background. To shut down the service, click on the “Stop” button on the Control panel.

WEB INTERFACE – MAIN MENU

There are three main functions available on the opening page:

- Stream
- Database
- Dashboard
- Settings

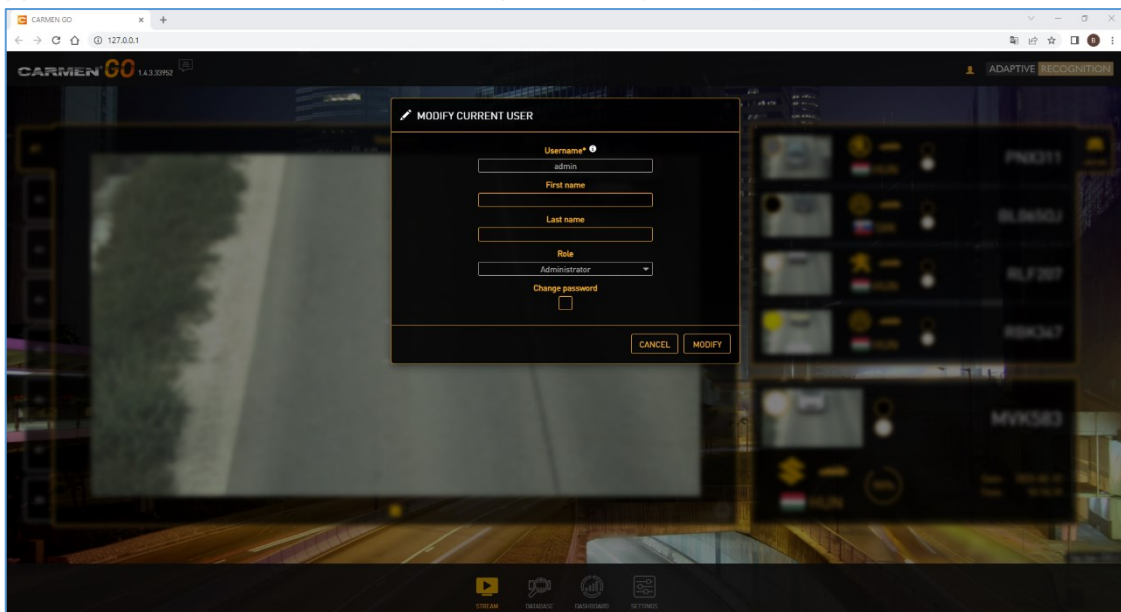


1 - MAIN MENU

The default login data for the first time is:

- Username: **admin**
- Password: **Admin1234**

It is recommended to change password after the first login. It can be done at **admin** section on the right-upper corner of the window, next to Adaptive Recognition logo.

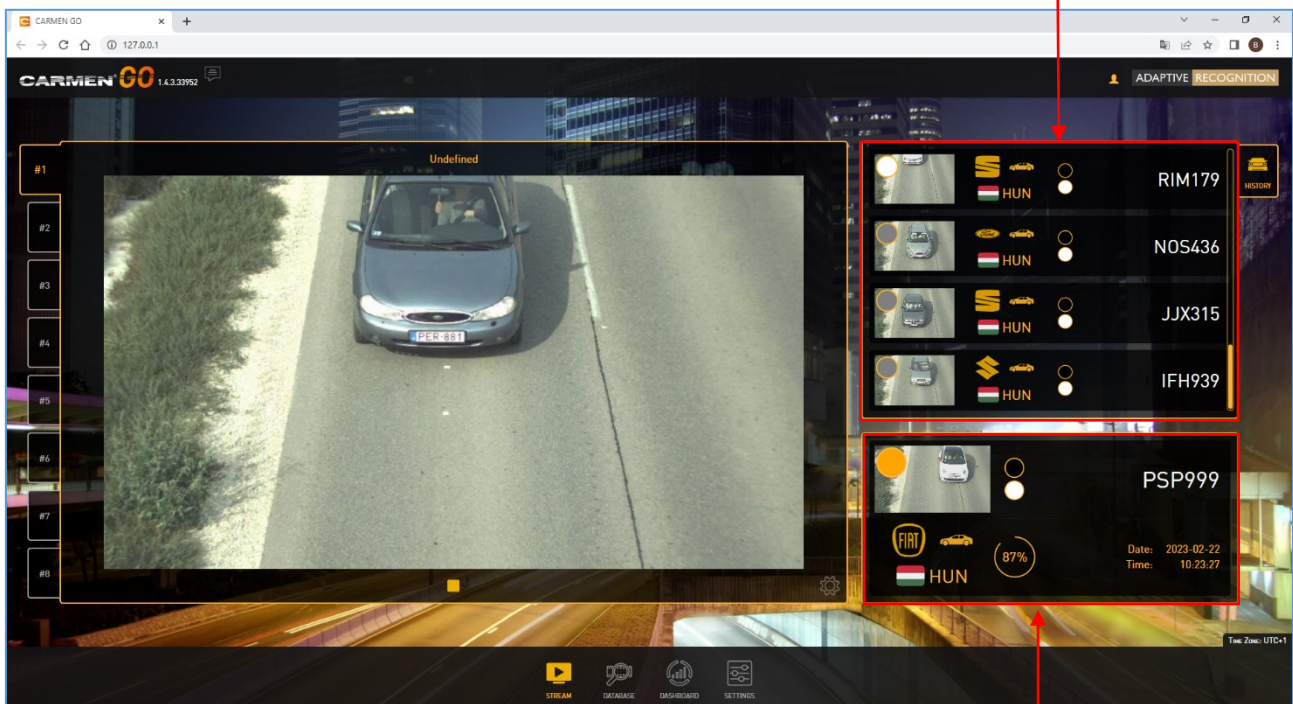


2 – CHANGE PASSWORD

1. STREAM

The Stream menu enables the live view of the selected IP camera or Video file stream and the ANPR data captured. Up to 8 channels can be connected - this enables the recognition of number plates from cameras or pre-recorded video streams at the same time.

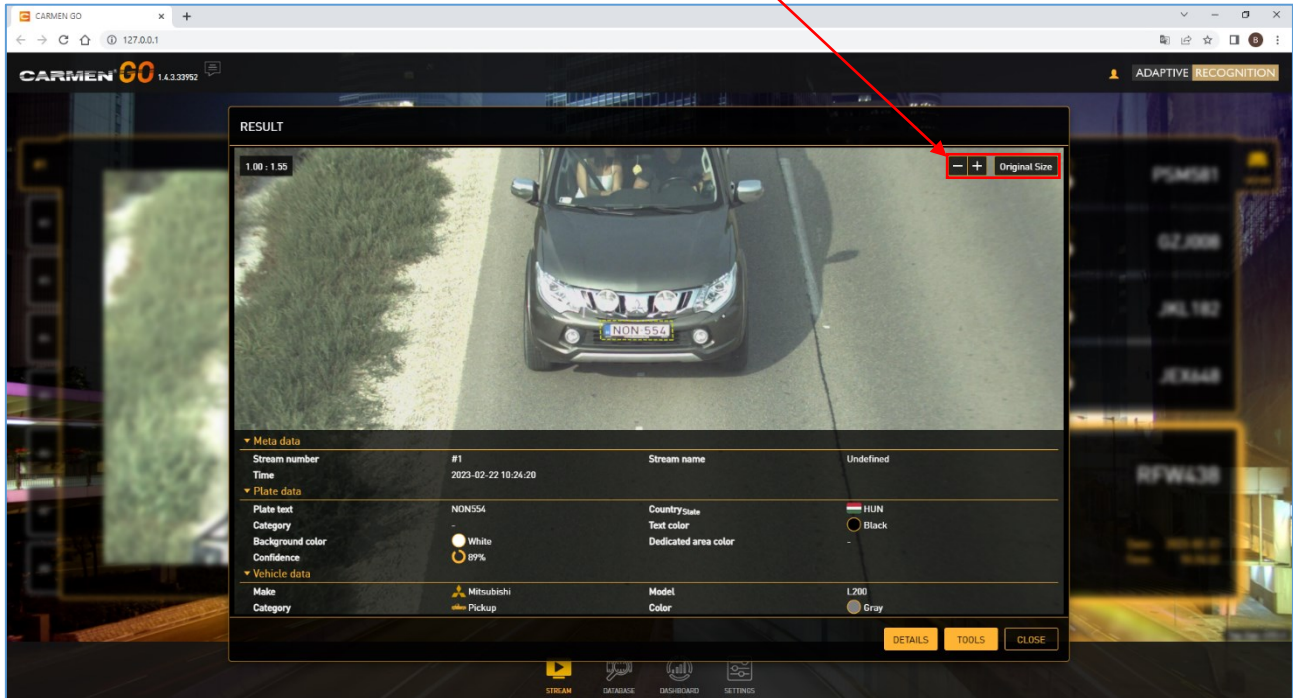
The upper right "History" panel shows the previous events detected (scrollable)



3 - STREAM MENU

This area shows the last detected number plate with country, MMR data, confidence, date and time

You can zoom in and out of the detected event image when you open it (also possible with the mouse scroller)



4 - RESULT

Hint

You can close this window by clicking "Close".

Note

When refreshing the web page, results will disappear from the sidebar but are not deleted from the internal database.

It is also possible to stop and play the stream. After stopping a video file, on the next start, it will jump to the beginning of the video.

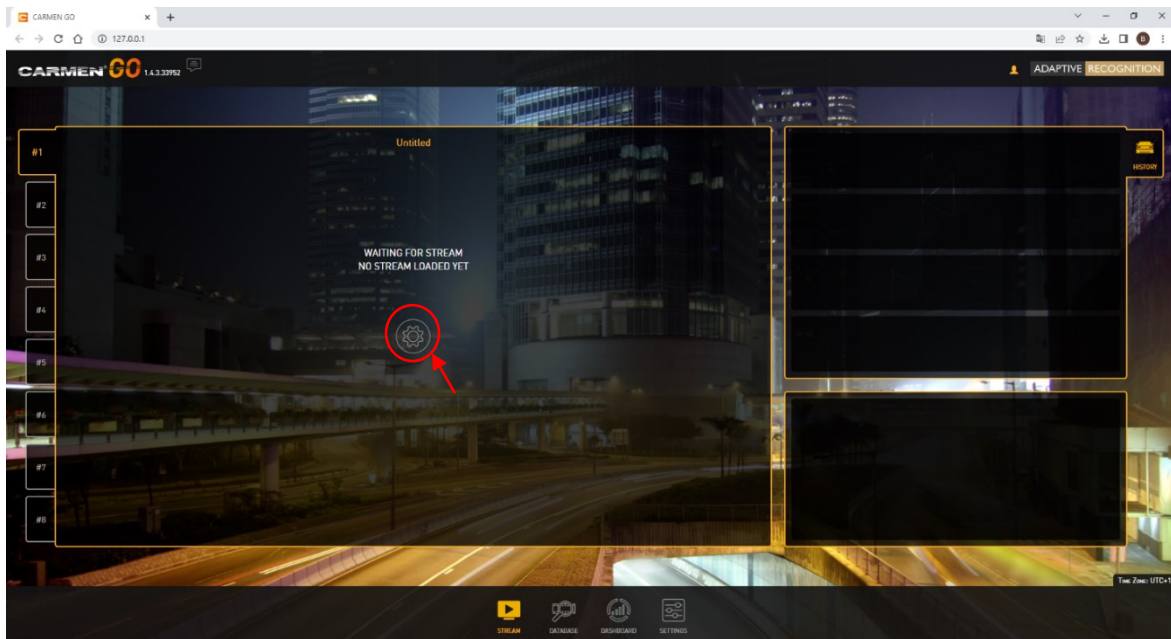
2. STREAM SETTINGS

This menu allows you to edit input, output, and ANPR settings.

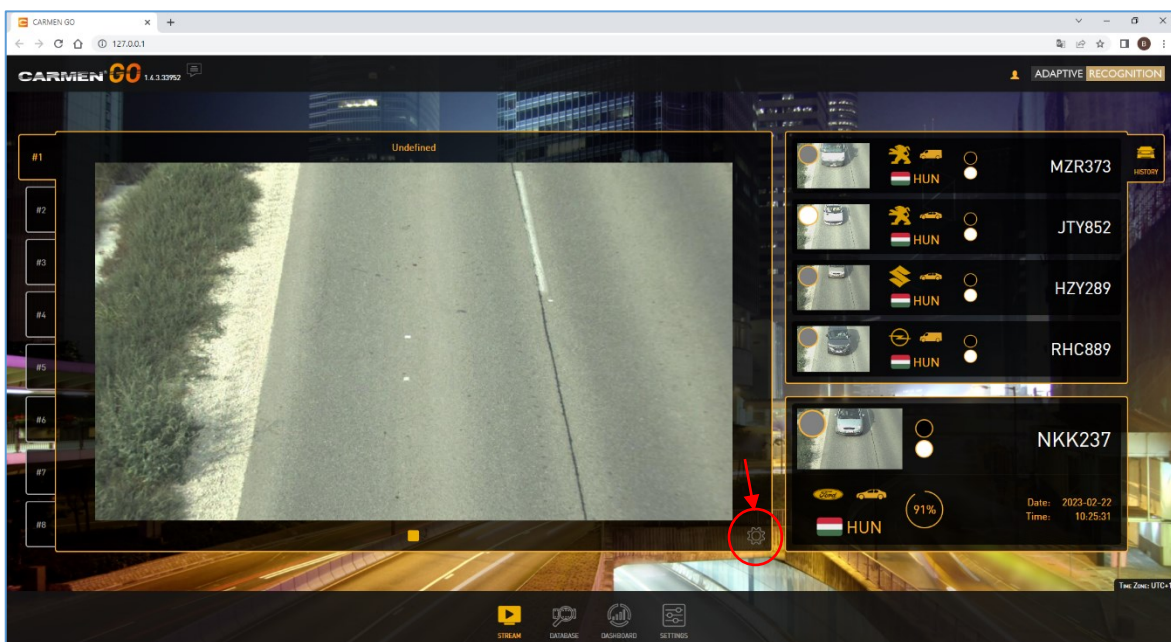
- System requirements depend on stream resolution and the number of passing vehicles
- For input formats, recommended camera positions, and image requirements, please check the [Input Stream Guide](#) online document.

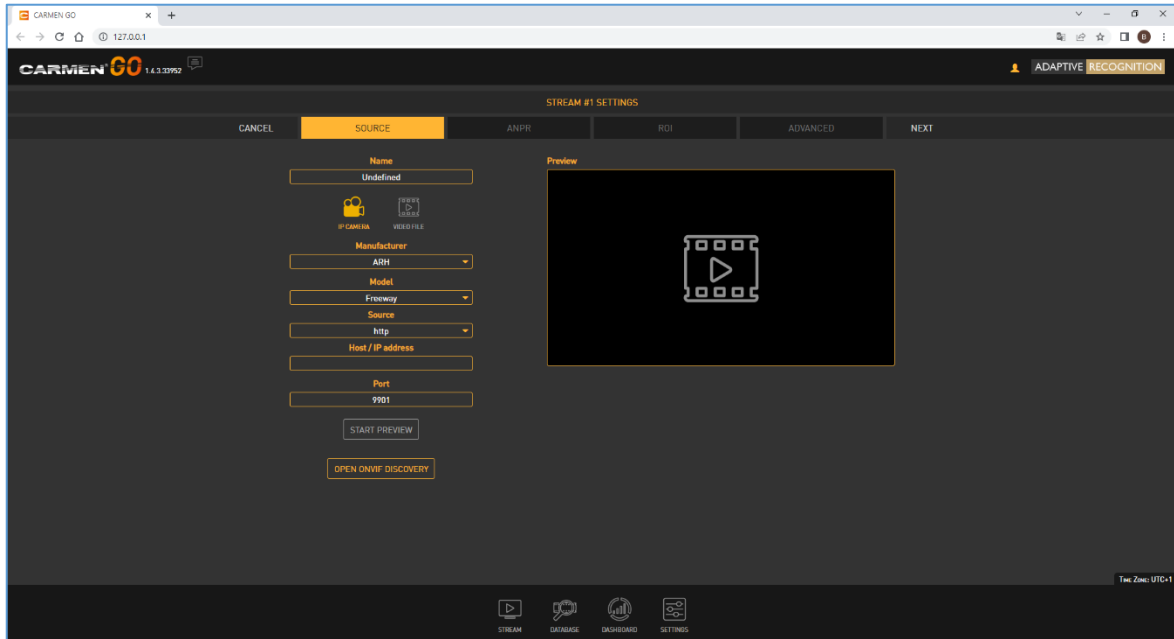
To get access to the Stream Settings menu, please click on the gear icon

- if the Stream is not in use yet:



- if the Stream is already in use:





5 - SOURCE MENU

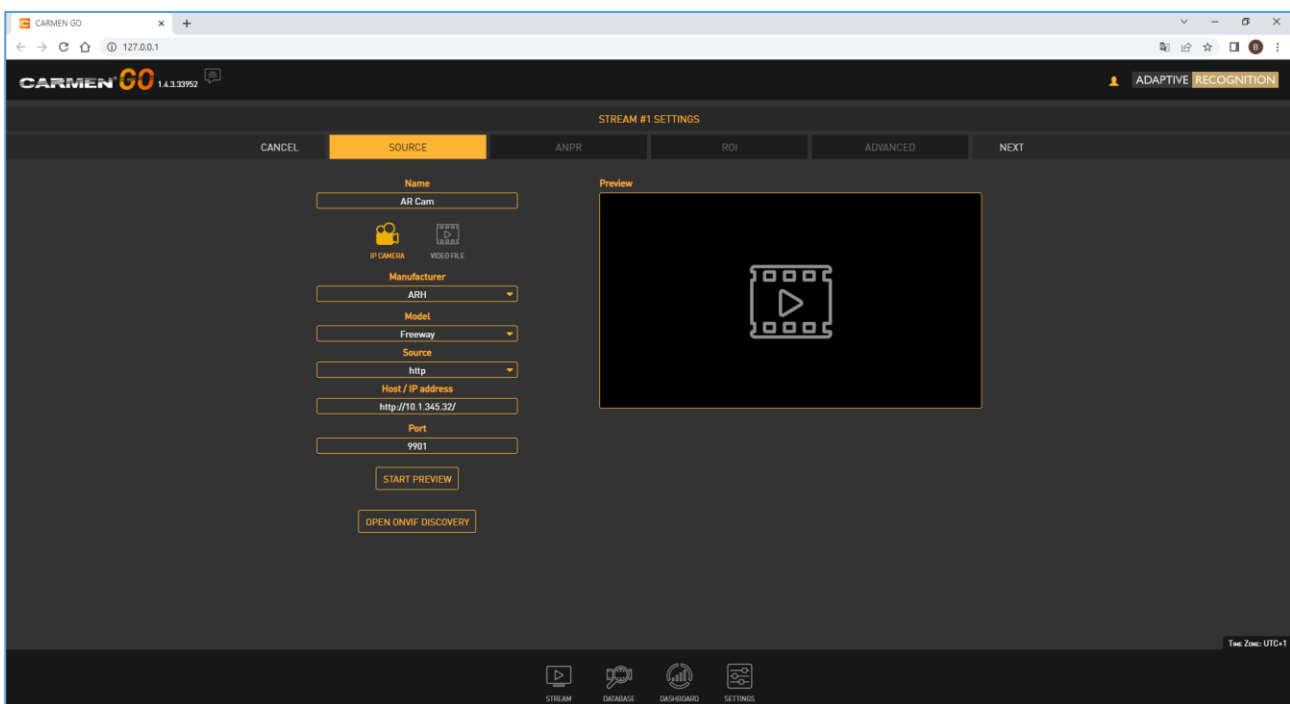
2.1. SOURCE TAB

2.1.1. IP camera

You can select the “Adaptive Recognition” or “Generic” option from the “Manufacturer” list - depending on what camera brand you are using.

- In case of Adaptive Recognition products, add related data of camera;
 - choose between models
 - source of the stream
 - type in host or IP address
 - and give the port of the stream
- In case of any other brand, type in or copy and paste the complete URL address of the camera’s stream into “Stream URL”.

After all, parameters have been given, click on “Start preview” to see the live view of the camera. You can assign a name to the camera (or video) stream in the “Name” field. With this, the changes are done, click on the “Next” button.



6 - IP CAMERA SETTINGS

Note

If the camera is password protected, enter the username and password into the URL address as below:

`http://username:password@192.168.x.xx:9901/video.mjpeg`

2.1.2. Video file

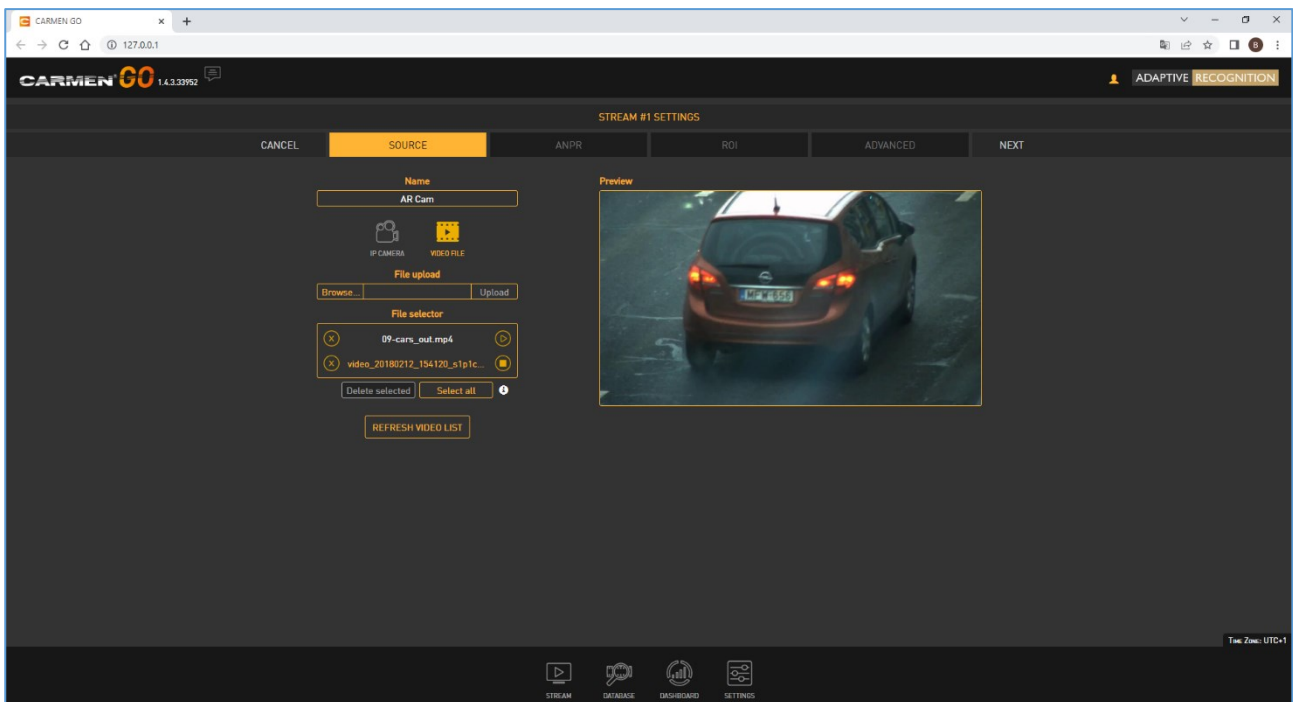
If you have a previously recorded video file about a monitoring event, you can browse and add it to the “File upload” field.

Note

File should be available from the computer where the web interface is accessed.

- To select the file, click on “**Browse**”, select video file, and press “**Upload**”
- Wait till CARMEN® GO uploads it to the server.
- The uploaded video file list will be populated under “**File selector**”
- The last step is to click on the “**Play button**” in the list, and the video will start.

Supported video formats: MPEG-4, AVI, MOV, MJPEG, H.264, VP8, VP9. You can give a unique name to this stream as well.



7 – VIDEO FILE SETTINGS

Note

You can upload more than one video file at the same time by selecting multiple files in the browser.

Note

When you are willing to delete the current video, simply click on “X” on the left side of the “File selector”. If you choose “Select all” or “CTRL + click on” videos and then tap on “Delete selected”, files will be deleted. When the video is playing, system will not allow to delete it, because the file is being used at the time.

2.1.3. ONVIF Discovery

The primary purpose of the CARMEN® GO Discovery API is to detect and display (their address) ONVIF cameras on the network and to make camera selection easier, so you don't have to manually enter the stream URL.

Stream URLs are defined in two steps:

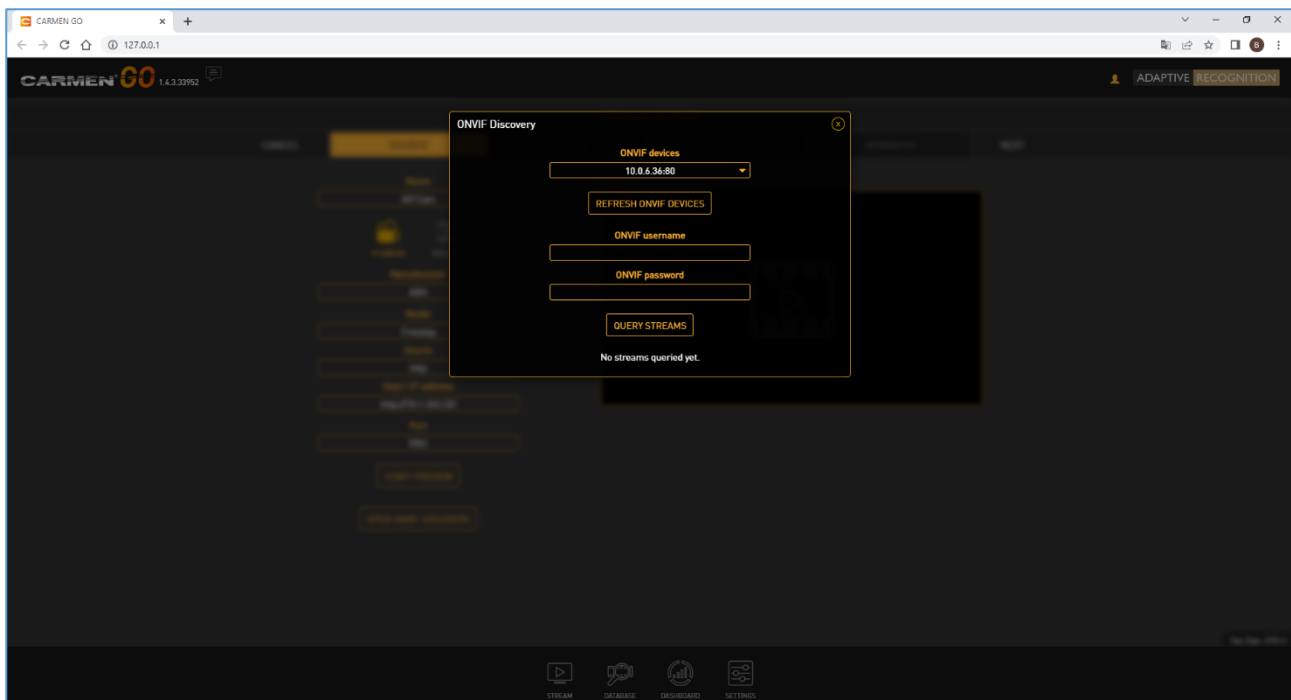
ONVIF devices: list camera URLs

ONVIF query determines the STREAM URL of the camera which was selected from the list. This requires an ONVIF username-password pair. Click on the Query Streams button to load the stream.

! Important

ONVIF only gives a basic URL, the stream and ONVIF password might not be the same. The stream is only accessible if the username and password is specified in the link in the following format: `http://username:password@HOSTADDR:PORT`

(e.g. `http://admin:admin@192.0.2.3:9901/...`)



8 - ONVIF SETTINGS

2.2. ANPR TAB


2.2.1. Region / Country

By default, only a general engine is installed with no country recognition. For country and state recognition, install the regional engine purchased. Select the desired region in ANPR settings.

Note

By selecting GENERAL engine, CARMEN® GO will recognize plate types of many countries, but not as accurate as specific engines.

Description of engine file:

 CGO_NAM_1.2.10.0_22Q2.msi

- **NAM** - name of the region
- **1.2.** – this number indicates the minimum main version of CARMEN® GO and engine is related to that
- **10** – minor version
- **0** – patch number
- **22Q2** – release date (2022, second quarter)

Note

When you have installed engine and CARMEN® GO is running, please refresh webpage to load the engine to the web interface.

Note

You can uninstall engines from System settings (Add or remove programs).

After the regional engine is installed, select the engine in **“region”** and country in **“country”**.

Plate color recognition: including text color and background color recognition.

Make and model recognition: MMR module is integrated into the CARMEN® GO package. The Make and Model Recognition (MMR) module enables its users to retrieve additional information regarding the passing vehicles from a digital image after a successful ANPR. It is important to have the same regional MMR and ANPR engine and license. The MMR engines are offering the following properties of the vehicle:

- Make (VW, Isuzu, Toyota, etc ...)
- Model (Passat, D-Max, Corolla, etc ...)
- Category
- Color

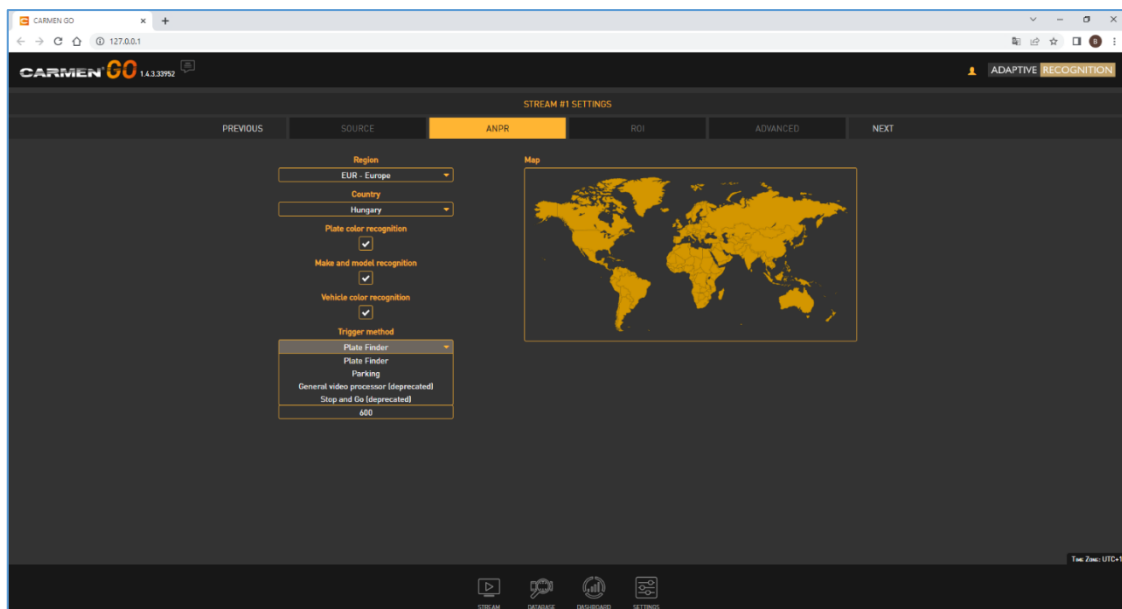
If you need more information about what our MMR engines are capable, please visit the following [link](#).

Vehicle color recognition: the MMR engine recognizes the color of the detected vehicles.

2.2.2. Trigger method

This drop-down menu contains four trigger algorithms:

- **Plate Finder (recommended setting):** Image processing algorithm designed to detect a license plate inside of a predefined ROI. This is the best setting in most cases!
- **Parking:** recommended for parking situations. (Triggers in every 600 milliseconds)
- **General video process (deprecated):** general ANPR trigger setting
- **Stop and Go (deprecated):** recommended to use for access control. Sensitivity can be set from low to high with the slider. The optimal setup is 50%. (Motion based trigger)



9 – ANPR METHOD

2.2.3. Event duplication timeout

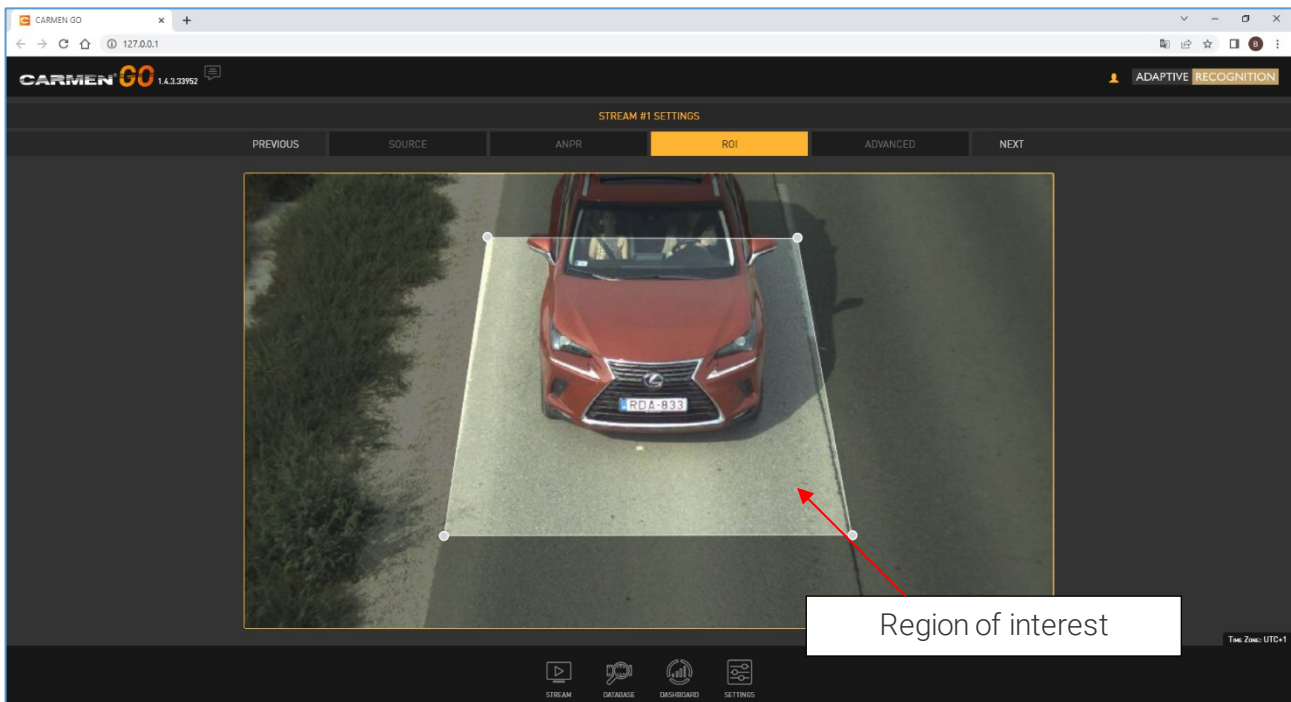
The minimum amount of time in seconds that must elapse to store events with the same plate text and type.

2.3. ROI

This menu point is intended to set up region of interest (ROI) both for triggering and ANPR. Set the ROI by dragging the corner points of the trigger area.

Note

Only a convex shape can be specified in the ROI setting!



10 - ROI

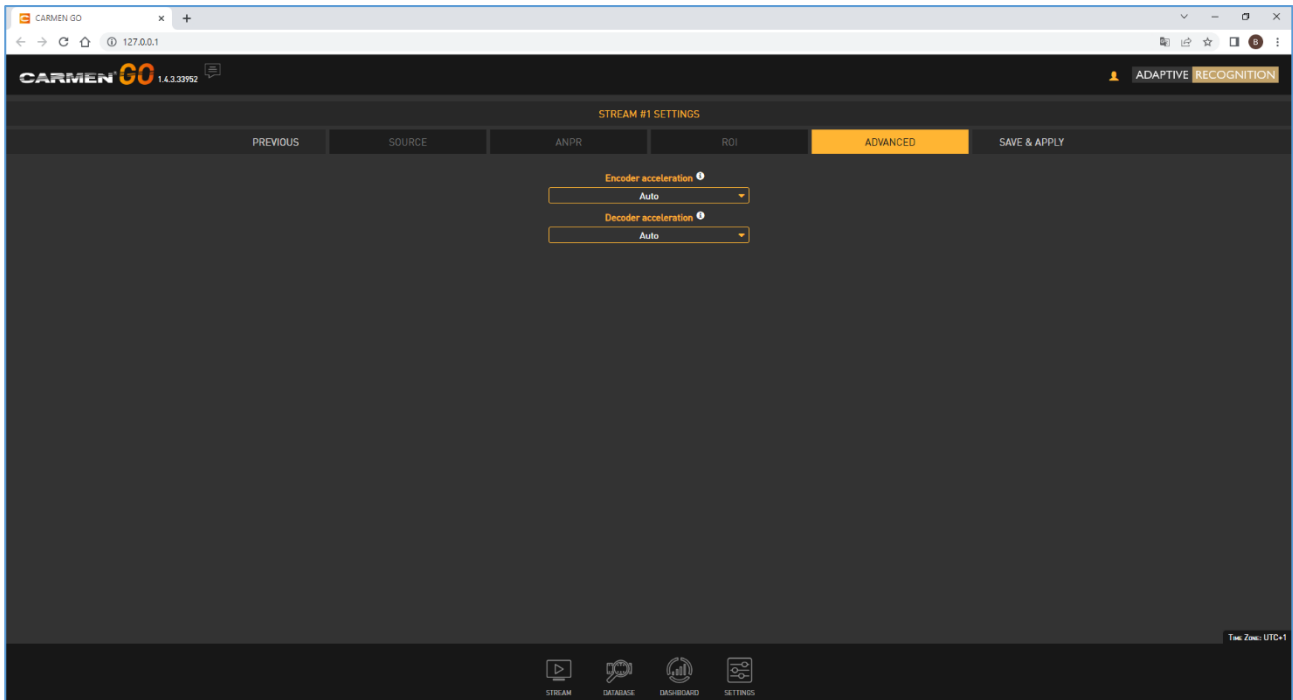


2.4. ADVANCED

Encoder and decoder acceleration option for stream compression. The recommended setting is Auto.

! Important

Acceleration is dependent on the CPU features.



11 – ADVANCED MENU

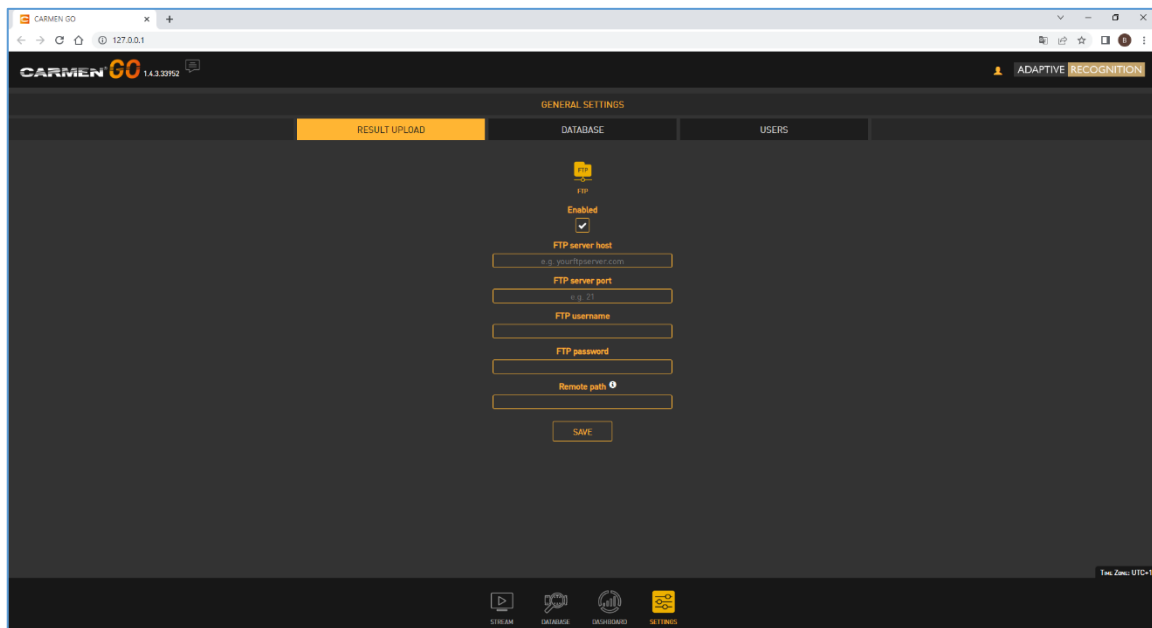


3. GENERAL SETTINGS

3.1. RESULT UPLOAD

FTP server:

You can upload the output data directly to an FTP server (including images). Type in all details (Host, Port, Username, Password, and Remote path) in the required fields, check **“Enable”** and press the **“Save”** button.



12 - OUTPUT

3.2. DATABASE SETTINGS

Database settings are available on this page. Path, storage limits, and database status can be set according to user preferences.

- **Database path:** The path to the database, including the folder name. It does not affect the location of previous events, only subsequent ones.
- **Storage limits:** You can add size and time limits according to your resources and appropriate settings manually.
 - **Maximum size [Megabyte]:** Maximum database size to store. The oldest events will be deleted when the database exceeds this limit.
 - **Maximum time interval [hour]:** Maximum time interval to store. The older events will be automatically deleted.
- **Storage:** Visually displays storage capacity of the drive.

Note

If you turn on both size- and time interval limit, the one that is reached first will trigger the deletion.

The database growth rate depends on the number of streams, traffic density, and image quality.

We recommend monitoring the behavior for a while so that you can determine the appropriate settings.

Size: Minimum 100MB, maximum 9.000.000.000MB

Time: Minimum 1h, maximum 10.000.000h

! Important

If you do not set a database limit, you will run out of storage space.

13 – GENERAL SETTINGS DATABASE

3.3. USERS/AUTHENTICATION

! Important

First login:

There is a default user named “admin”. When you first login in the system, you have to use this user’s default credentials:

Username: admin

Password: Admin1234

After entering in the system, you can modify the password connected to the admin user by checking on the “admin” text, next to the CARMEN® GO logo, and then select “Edit user”. “Change password” option is listed there. After selecting it, fill the appearing fields and press “Modify” button for confirmation.

You can also add and modify users under the General tab, Users menu.

Adding a new user: On clicking the **ADD NEW USER** button a form appears requesting the following fields:

- **Name:** The username that will be used to log in.
- **First name:** Forename of the user.
- **Last name:** Family name of the user.
- **Role:** User roles and privileges.
- **Password:** Corresponding password.
- **Confirm password:** Confirm the given password to rule out mistyping.

After all necessary data is entered, click on the **Add** button to confirm.

Roles:

- **Viewer:** Access only to see detected events and can watch streams.
- **Maintainer:** Almost full access, except handling users.
- **Administrator:** Access to all features, full privileges.

The screenshot shows a web browser window with the CARMEN GO logo and version 1.4.3.3392. A modal window titled '+ ADD NEW USER' is open, containing the following fields and options:

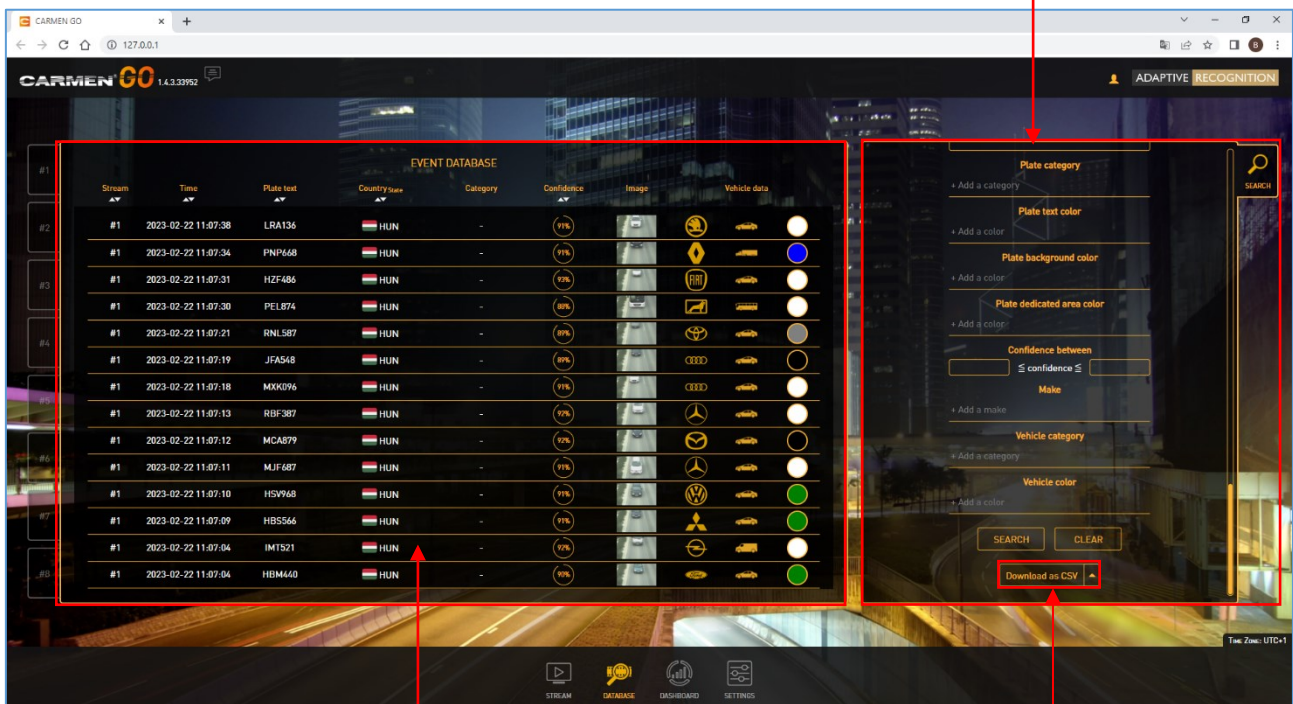
- Username***: Text input field.
- First name**: Text input field.
- Last name**: Text input field.
- Role**: Dropdown menu with options: Viewer, Maintainer, Administrator.
- Confirm password***: Text input field.
- CANCEL** and **ADD** buttons at the bottom right.

14 – GENERAL SETTINGS USERS

4. DATABASE

The database menu shows all events from all streams with relevant details.

You can search within the database.



15 - DATABASE MENU

This area shows the detection history with all relevant data about each event captured (Number plate, Type, Time, Plate text, Country, Confidence, Image and Vehicle data)

You can export CSV file into Excel

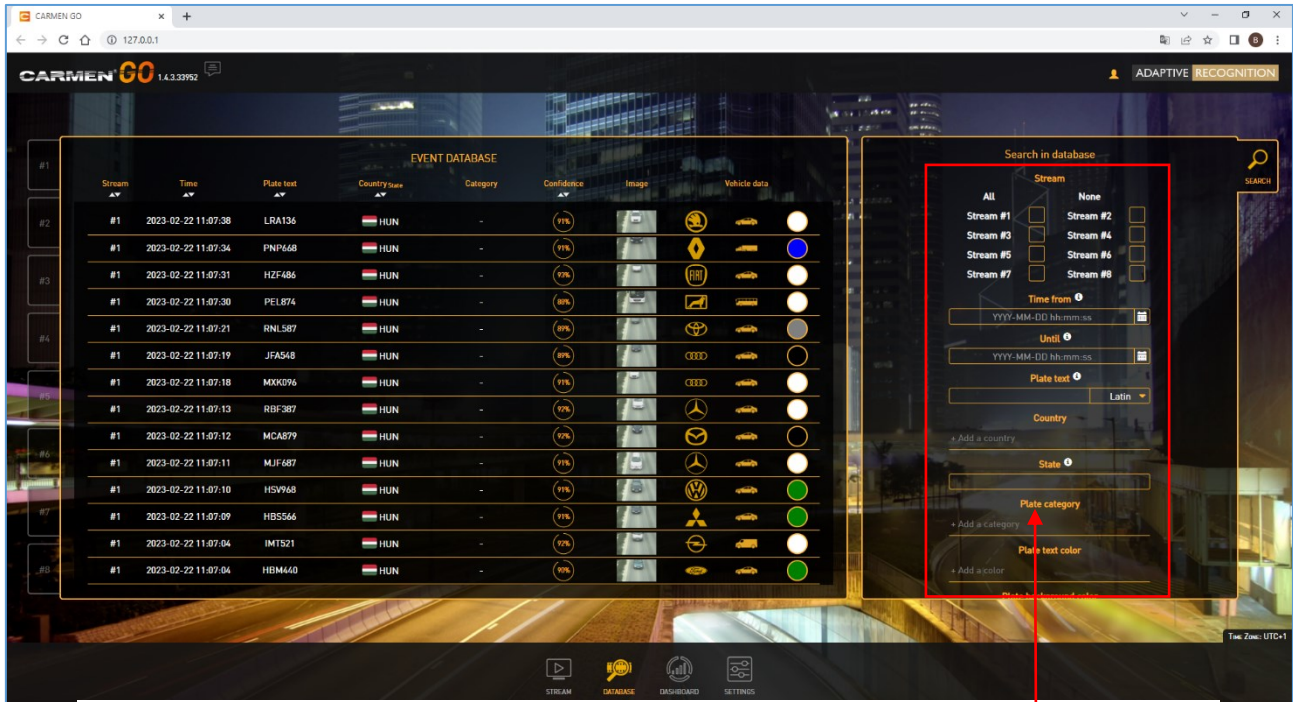
Note

There are two options to download CSV file:

- Download database as CSV
- Download database as ZIP – it also contains images

Note

Database is gathering and storing all event data – until the maximum capacity of storage is reached.

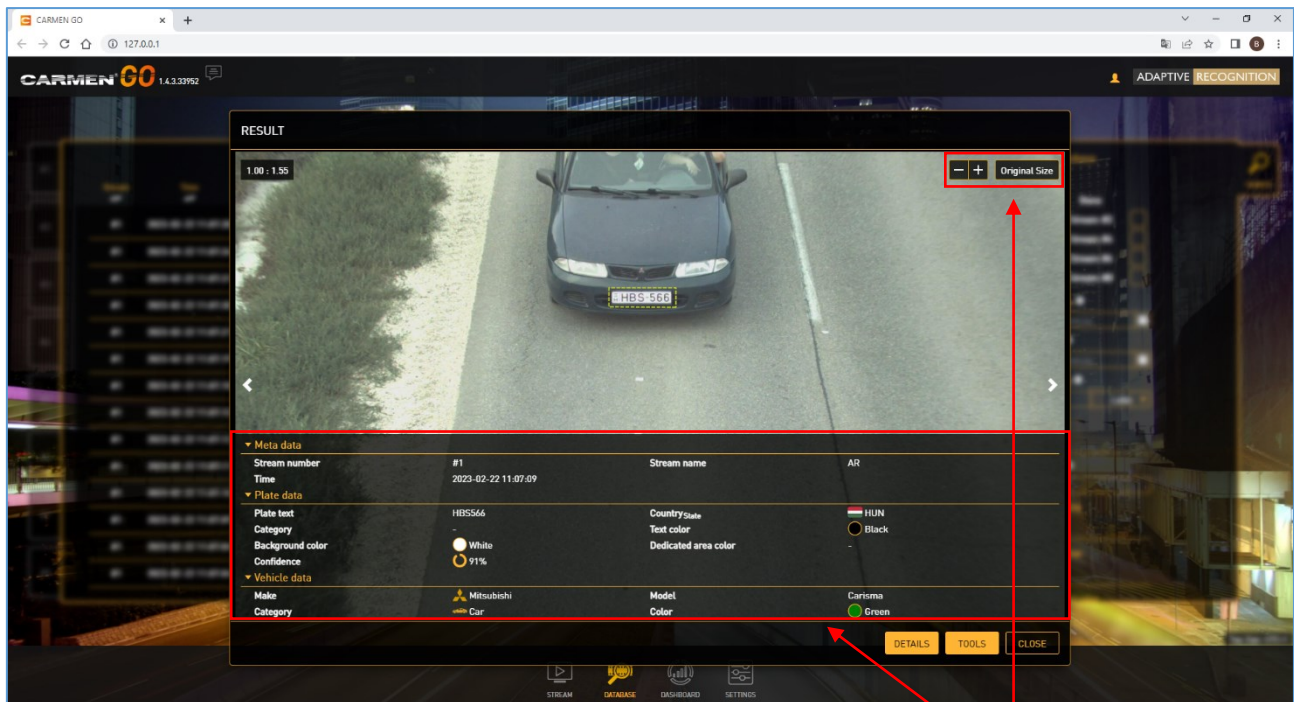


16 - DATABASE MENU

You can search separately among the Stream, Time, and Plate text

- Plate category:** ANPR recognizes the category of the number plate and automatically adds it to the detected event data. If you click on **+ Add a category**, you can search among the listed categories.
- Plate text color:** choose among the text colors to find the required result.
- Plate background color:** choose from the background colors.
- Plate dedicated area color:** In some countries, there is an extra distinction on the license plate, like circle, star, bar and that is its color.
- Confidence:** Search between two values to receive the required events.
- Make:** Select vehicle models from the list.
- Vehicle category:** Choose from the vehicle categories.
- Vehicle color:** You can search by vehicle color.

Database result:



17 - DATABASE MENU

You can zoom in and out of the detected event image and check relevant data

Result data:

- **Meta data:** Contains information about stream number, time, and name.
- **Plate data:** Contains all relevant data about the detected number plate.
- **Vehicle data:** Relevant MMR data about the detected vehicle.

5. DASHBOARD

This menu represents information on detections. It has four categories:

- **Plate types:** all detected number plates
- **Detection count:** show all detected events
- **Average detection time:** average time of each detection
- **System load:** the measure of the work amount that the system performs in a 24h period



18 - DASHBOARD MENU

Note

If the **ANPR Server** restarted, Detection count, Average detection time and System load are reset.

Note

Deleting the database clears the Plate types tab history.

6. RESULT OUTPUT OPTIONS

6.1. EVENT WEBSOCKET

Carmen Event Server provides an option to connect to a persistent WebSocket channel for receiving the generated event's data and image in real-time.

For details, please see the online document:

[Carmen® GO REST API Reference Manual](#)

6.2. REST API

It is possible to pull event data from the internal database through HTTP with REST API commands. Results are available in JSON format.

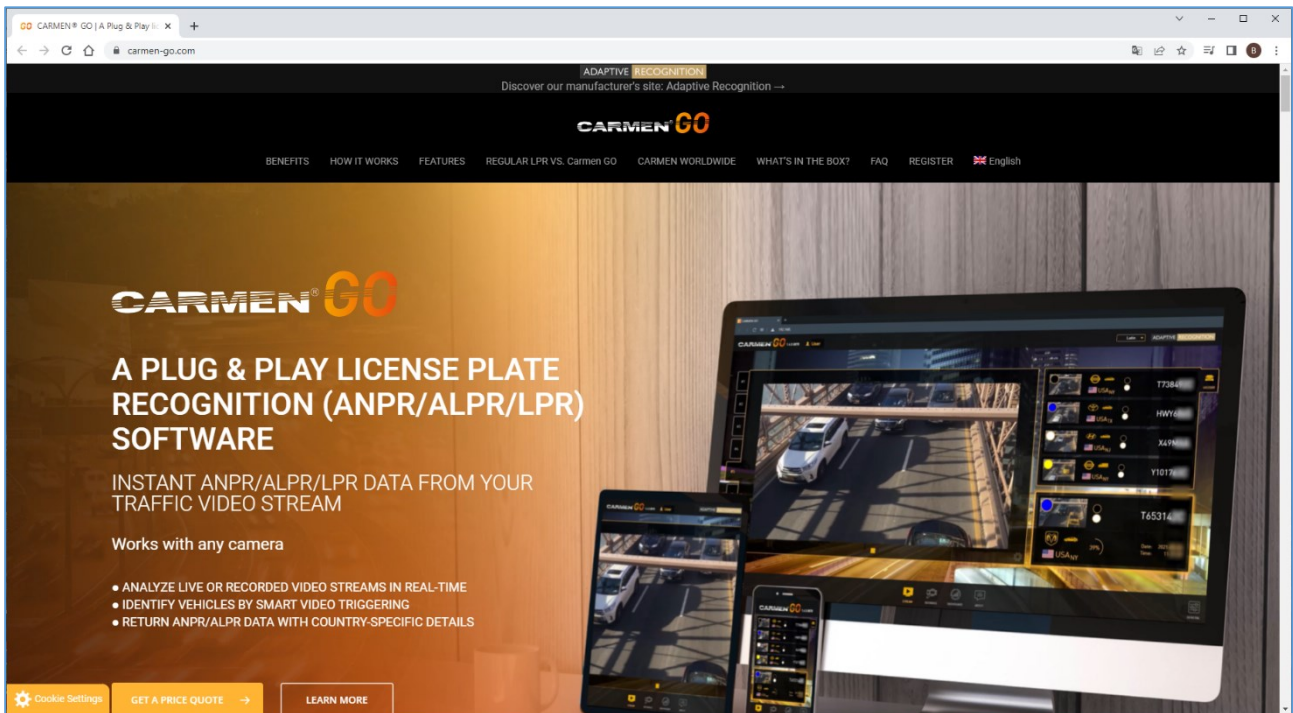
For details, please see the online document:

[Carmen® GO REST API Reference Manual](#)



7. ABOUT

The software version number and a link to the official CARMEN® GO webpage are available [here](#).



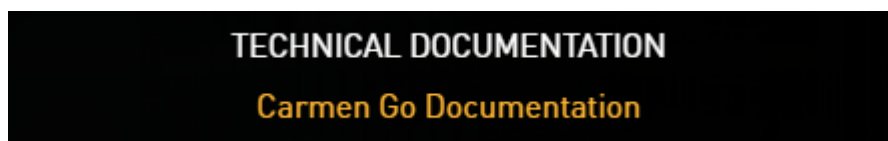
19 - CARMEN® GO MICROSITE

Version information is available here.



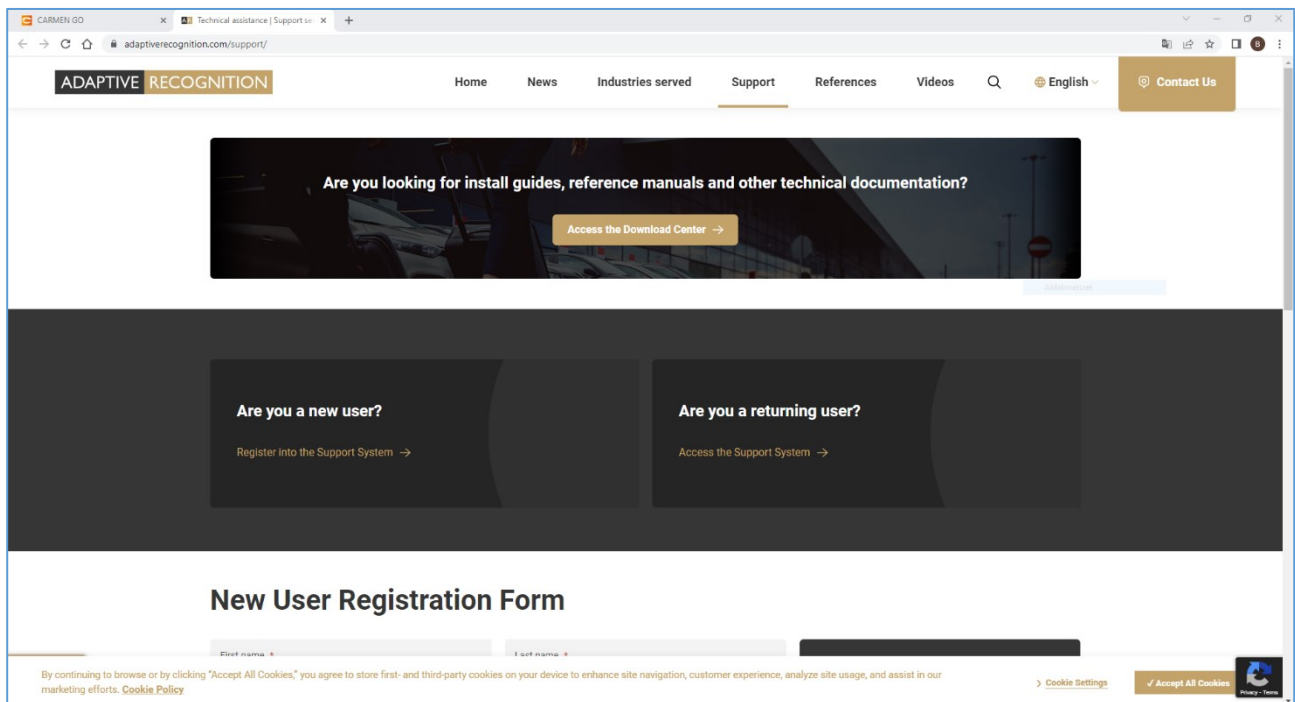
20 – VERSION INFORMATION

Technical documentation: relevant documents of CARMEN® GO are available [from this site](#).



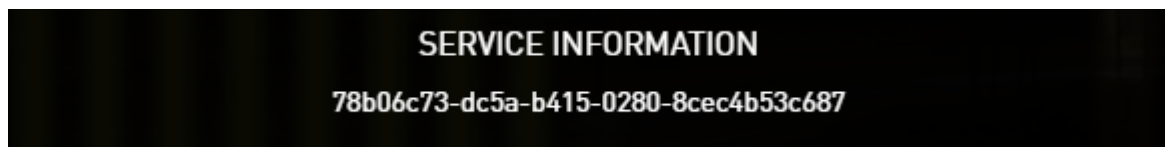
21 – TECHNICAL DOCUMENTATION

The “Technical assistance” [link](#) will direct to a web page, where technical assistance can be requested from our support team.



22 - TECHNICAL SUPPORT WEB PAGE

Service information: it is the unique ID of the service.



23 – SERVICE INFORMATION

Contact Information

Headquarters:

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1123 Budapest Hungary

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Fax: +36 1 201 9651

Web: www.adaptiverecognition.com

Service Address:

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Ipari Park HRSZ1113/1 HU

2074 Perbál Hungary

Phone: +36 1 2019650

E-mail: rmarequest@adaptiverecognition.com

Adaptive Recognition Hungary Technical Support System (ATSS) is designed to provide you the fastest and most proficient assistance, so you can quickly get back to business.

For further technical information about our products, please visit our official website.

Information regarding hardware, software, manuals, and FAQ are easily accessible for customers who previously registered to enter the dedicated ATSS site. Besides offering assistance, the site is also designed to provide maximum protection while managing your business information and the technical solutions utilized.

New User

If this is your first online support request, please create an account by clicking on this [link](#).

Returning User

All registered ATSS customers receive a personal access link via e-mail. If you previously received a confirmation message from ATSS, it contains the embedded link that allows you to securely enter the support site.

If you need assistance with login or registration, please contact atsshhelp@adaptiverecognition.com for help.

