



GPS LTE ROUTERS FOR ADAPTIVE RECOGNITION ANPR CAMERAS

Configuration Guide

GPS LTE routers

This guide helps to configure GPS LTE routers with AR ANPR cameras in order to pair geographic location information to ANPR events.



Router configuration guide

for providing GPS data on smart ANPR cameras

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Disclaimer



This document contains instructions for integrators and technicians familiar with Adaptive Recognition cameras and advanced property configuration. **Do NOT share with clients or end users!** Note, that cellular network information (e.g. PIN/PUK code) necessary for configuring LTE routers may vary by region & country.

1. INTRODUCTION

This guide presents the steps to configure GPS LTE routers with Adaptive recognition ANPR cameras in order to pair geographic location information to ANPR events. The guide is only applicable for smart ANPR cameras (VIDAR US or previous models featuring firmware version series 3.6.x).

Compatible cameras:

- MicroCAM M402 fw: V3.6r1.3877
- SmartCAM / SpeedCAM fw: V3.6r1.3877
- VIDAR (US version) fw: V2021.10.14-1810

Compatible routers:

- Robustel (R1520)
fw: r1520-firmware-beta210831
- Milesight (UR35) fw: 35.3.0.2

2. INSTRUCTIONS FOR ROBUSTEL ROUTER

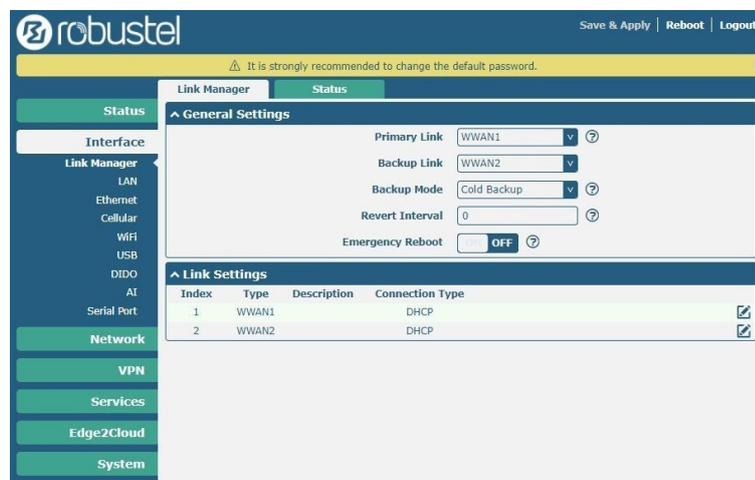
Please follow the manufacturer's manual for installation and commissioning of the network device. By default, the router is available on the IP 192.168.0.1 with the following login credentials:

user: **admin** password: **admin**

It is recommended that upon the first login, you replace the default password.

2.1. CONFIGURING NETWORK DEVICE

- Insert the SIM card into the network device
- Reboot the router
- Login and go to menu entry: **Interface** → **Link Manager**



- Within the **Link Settings** section, click the edit button (WWAN 1 or WWAN 2, depending on which SIM slot you've had the SIM card inserted)

Index	Type	Description	Connection Type
1	WWAN1		DHCP
2	WWAN2		DHCP

- Fill in the data according to the information of your Internet Service Provider, then save your settings

Link Manager

General Settings

Index:

Type:

Description:

WWAN Settings

Automatic APN Selection: ON

Dialup Number:

Authentication Type:

PPP Preferred: OFF

Switch SIM By Data Allowance: OFF

Data Allowance:

Billing Day:

- Reboot the router
- Login and go to menu entry: **Interface** → **Status** and check the connection status of the configured WWAN link.

robustel Save & Apply | Reboot | Logout

It is strongly recommended to change the default password.

Status

Interface

Link Manager

Link Status

Index	Link	Status	Uptime	IP Address
1	WWAN1	Connected	0 days, 00:08:16	100.71.154.195/255.255.255.248
2	WWAN2	Disconnected		

WWAN Data Usage Statistics

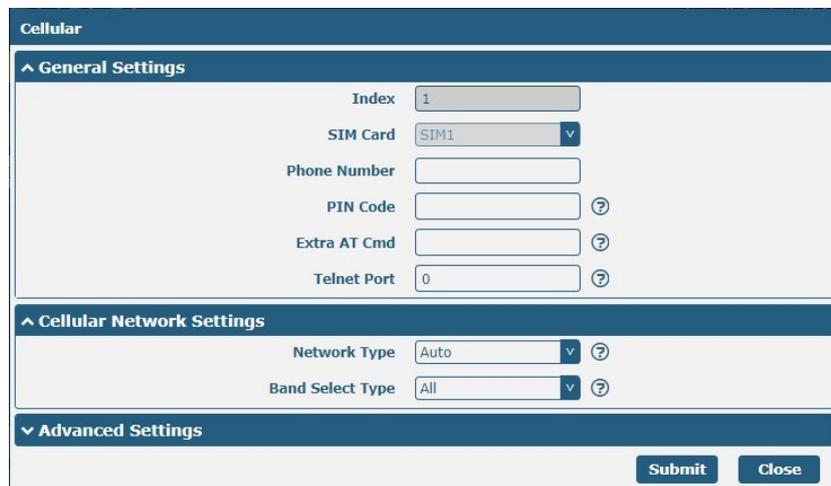
WWAN1 Monthly Stats

WWAN2 Monthly Stats

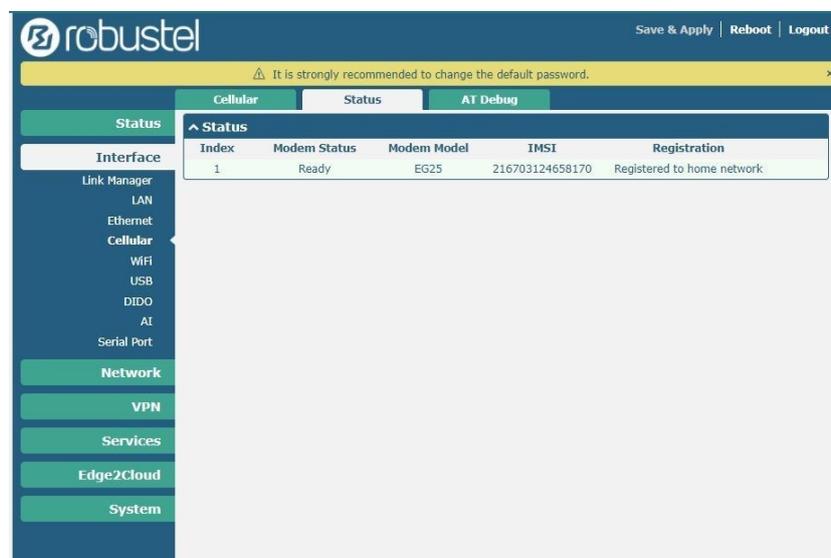
WAN Data Usage Statistics

WAN Monthly Stats

- In case the status is Connected, proceed to chapter 2.2, otherwise (if the status remains Disconnected) navigate to the menu entry: **Interface** → **Cellular** and fill in additional information of the SIM card by editing **Advanced Cellular Settings**.



- Check the connection at the **Interface** → **Cellular** menu **Status** section



2.2. CONFIGURING GPS

- Attach the GPS antenna(s) then turn ON the device
- Login and go to menu entry: **Services** → **GPS**
- Enable GPS under the **General Settings** section



- Reboot the device
- Login and go to menu entry: **Services** → **GPS** and check reported coordinates in **STATUS** section

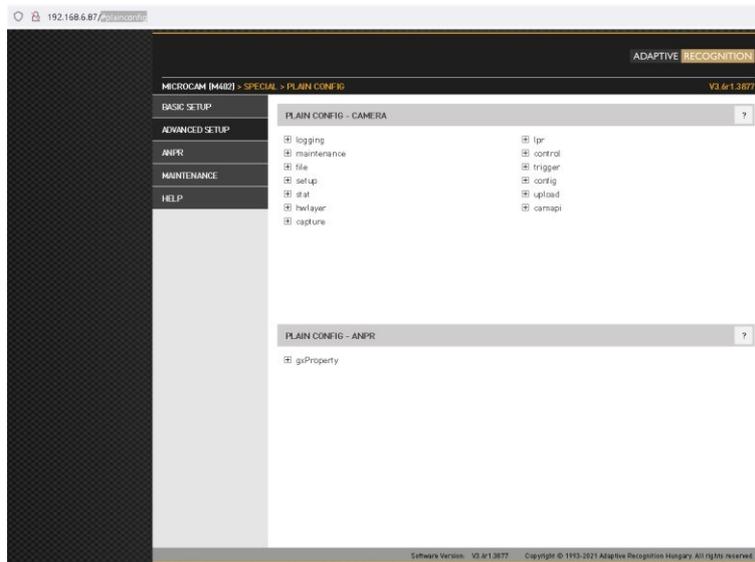


- Confirm that **RS232 Report Settings** are enabled



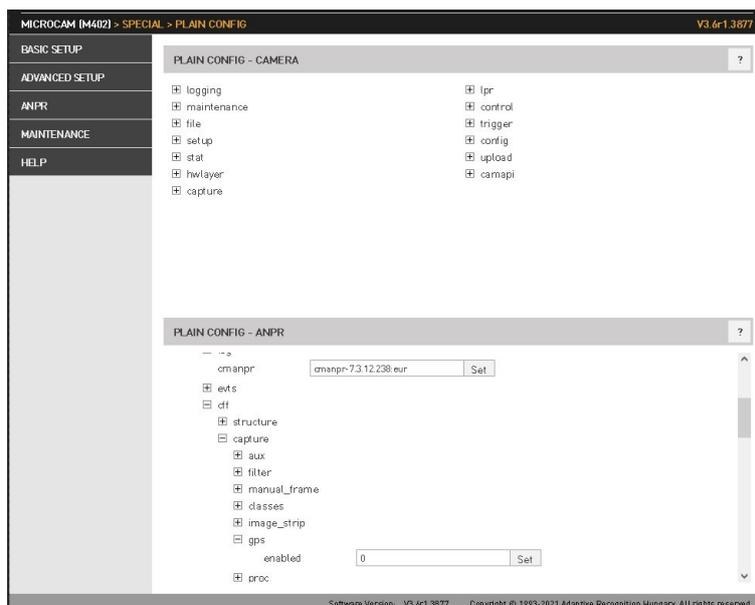
2.3. CONFIGURING ANPR CAMERA

- Access the camera's **Plain config** interface via web GUI, using 'IP-address'/#plainconfig

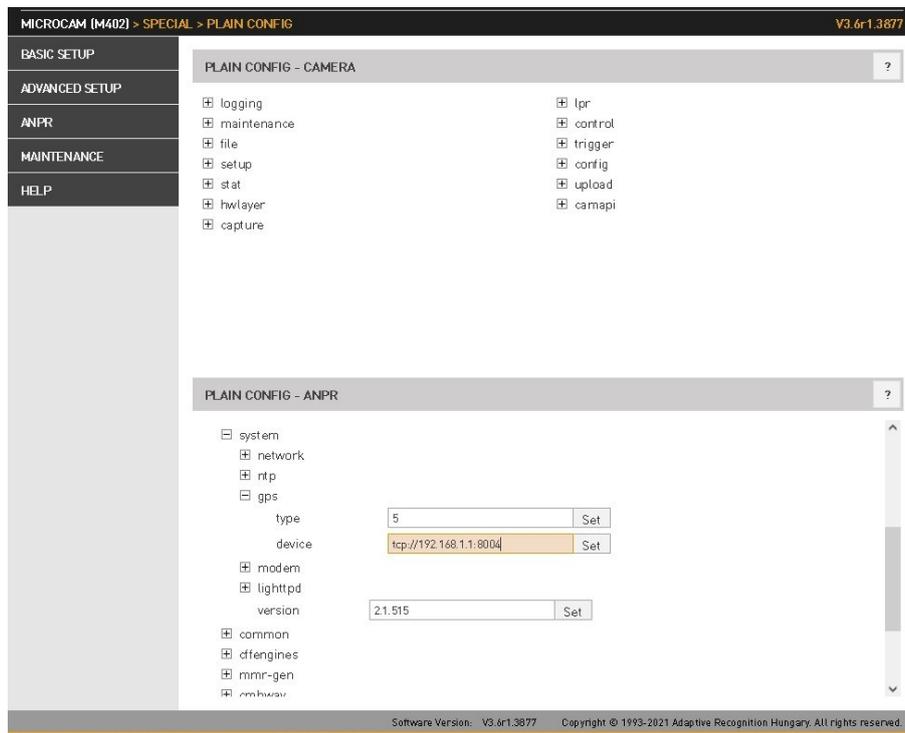


Set the following property values, by following the tree-structure configuration panel by inserting the new value, then clicking on Set and rebooting the device after each property change:

- `gxProperty/default/cff/capture/gps/enabled: 0 => 1`
- `gxProperty/system/gps/type: 0 => 5`
- `gxProperty/system/gps/device: tcp:///IP-address:PORT'`
(i.e.: `tcp://192.168.1.1:8004`)



- In case of multiple ANPR cameras connected to the router, a different PORT must be defined for each camera, as the router handles a single device on every PORT (8004 in this example):



- Login to the router GUI and go to menu entry: **Services** → **GPS** and add (+) the PORTS that are defined for the camera(s)

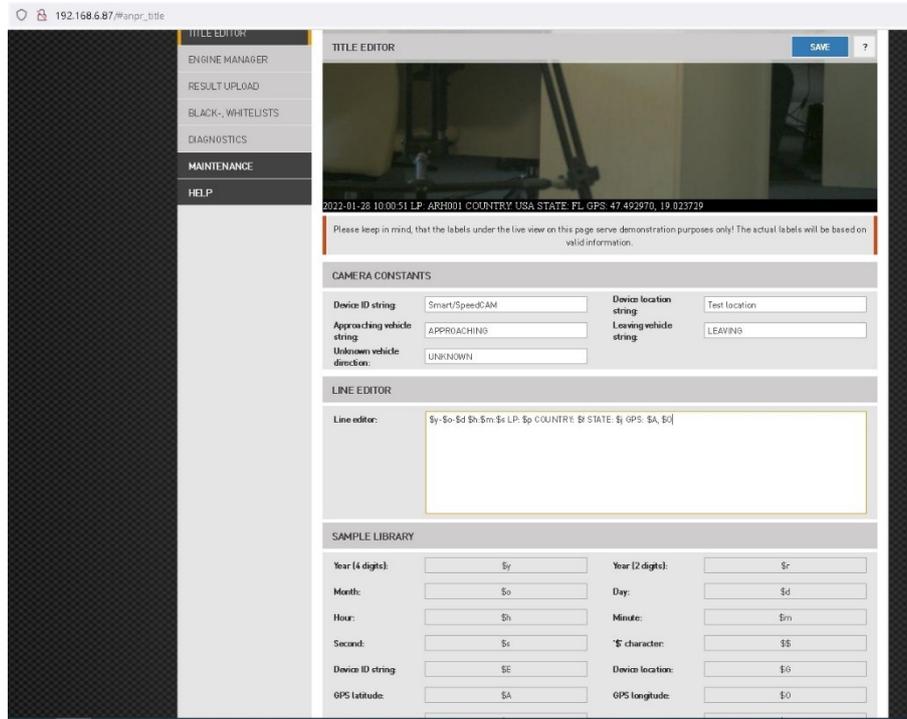
^ GPS Servers							
Index	Enable	Protocol	Local Address	Local Port	Server Address	Server Port	
1	true	TCP Server	192.168.1.1	8001	192.168.1.1	8001	⊕ ✕
2	true	TCP Server	192.168.1.1	8002	192.168.1.1	8002	⊕ ✕
3	true	TCP Server	192.168.1.1	8003	192.168.1.1	8003	⊕ ✕
4	true	TCP Server	192.168.1.1	8004	192.168.1.1	8004	⊕ ✕

The screenshot shows the 'GPS Server Settings' configuration form. It includes the following fields and controls:

- Index:** 4
- Enable:** ON (toggle)
- Protocol:** TCP Server (dropdown)
- Local Address:** 192.168.1.1
- Local Port:** 8004
- Send GGA Sentence:** ON (toggle)
- Send VTG Sentence:** ON (toggle)
- Send RMC Sentence:** ON (toggle)
- Send GSV Sentence:** ON (toggle)

 At the bottom right, there are 'Submit' and 'Close' buttons.

- The GPS information is now present in the event XML-s without the need for further intervention. In case the coordinates shall be highlighted on the image caption labels, login to the camera interface and navigate to menu entry: **ANPR** → **Title Editor** and add the following tags in the **Line editor** section: GPS: \$A, \$O



3. INSTRUCTIONS FOR MILESIGHT ROUTER

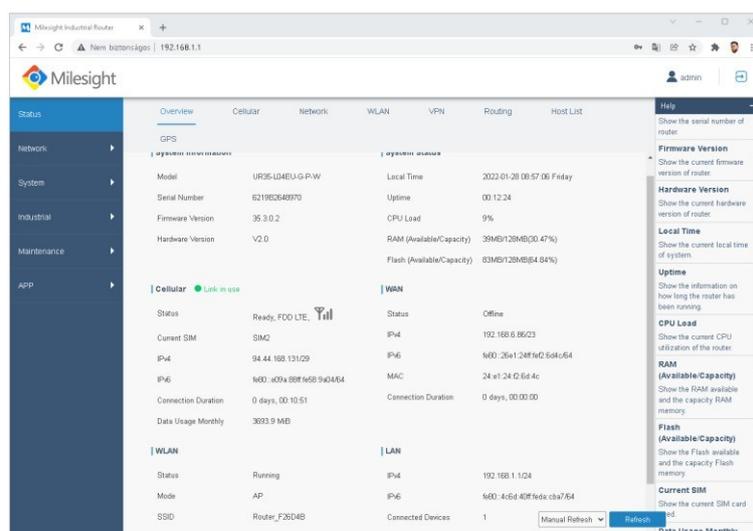
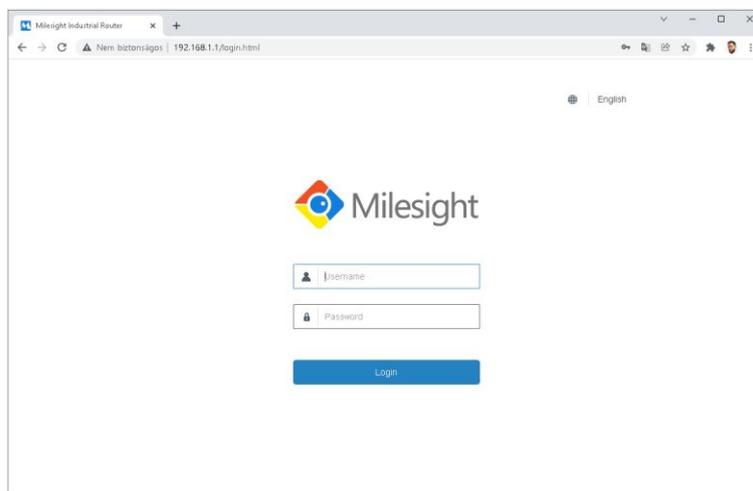
Please follow the manufacturer's manual for installation and commissioning of the network device and make sure it is connected via one of the LAN ports (LAN#1 to LAN4). By default, the router is available on the IP **192.168.0.1** with the following login credentials:

user: **admin** password: **password**

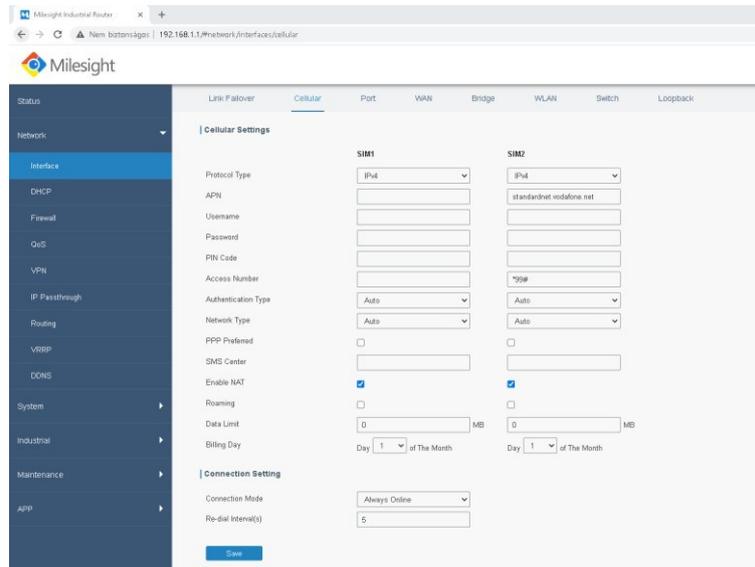
It is recommended that upon the first login, you replace the default password.

3.1. CONFIGURING NETWORK DEVICE

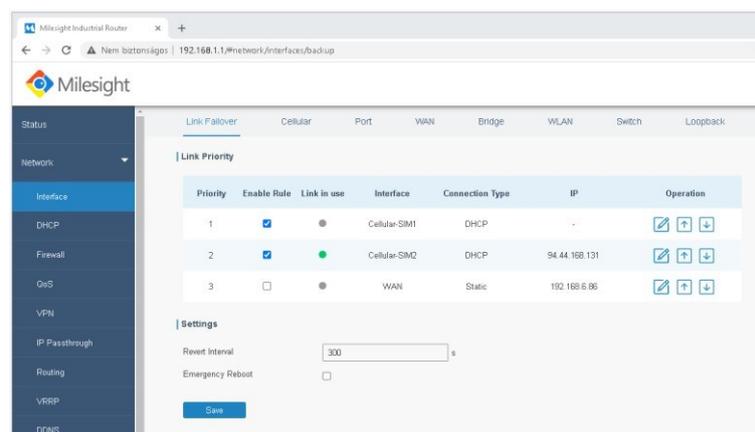
- After inserting the SIM card, power on the device and login the to web GUI



- Navigate to menu entry: **Network** → **Interface** and within the **Cellular** section fill in the APN address and the access number provided by the ISP, then click SAVE

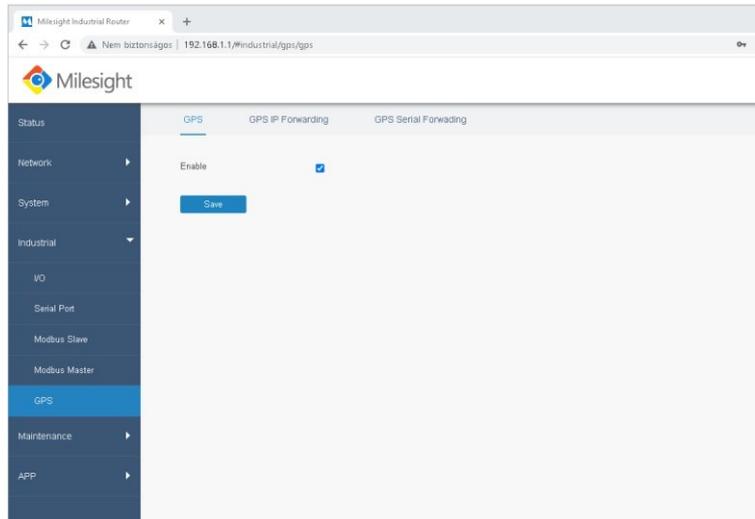


- Navigate to menu entry: **Network** → **Interface** and within the **Link Failover** make sure that;
 - cellular connection type is set to DHCP
 - cellular connection is active in [enable rule] checkbox
 - in case WAN connection is active (not necessarily needed when the router is installed on a mobile/vehicle platform), make sure that WAN is above cellular connections in the priority list
 - click SAVE

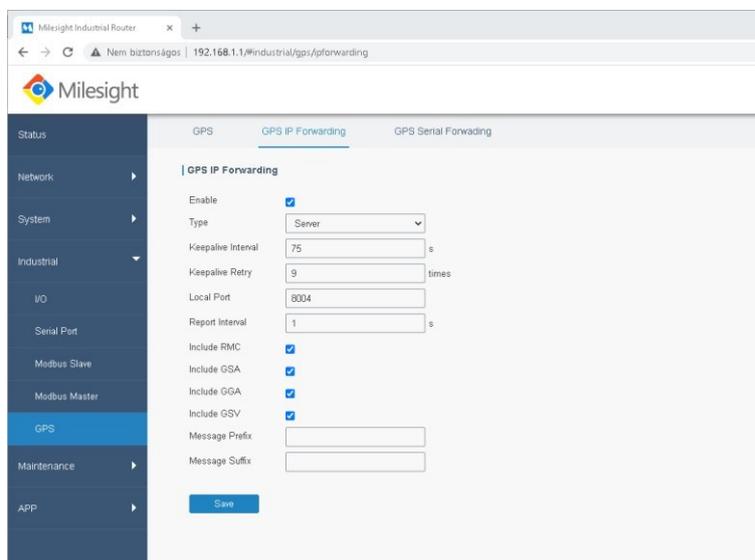


3.2. CONFIGURING GPS

- Navigate to menu entry: **Industrial** → **GPS** and enable the checkbox within **GPS** section, then click SAVE

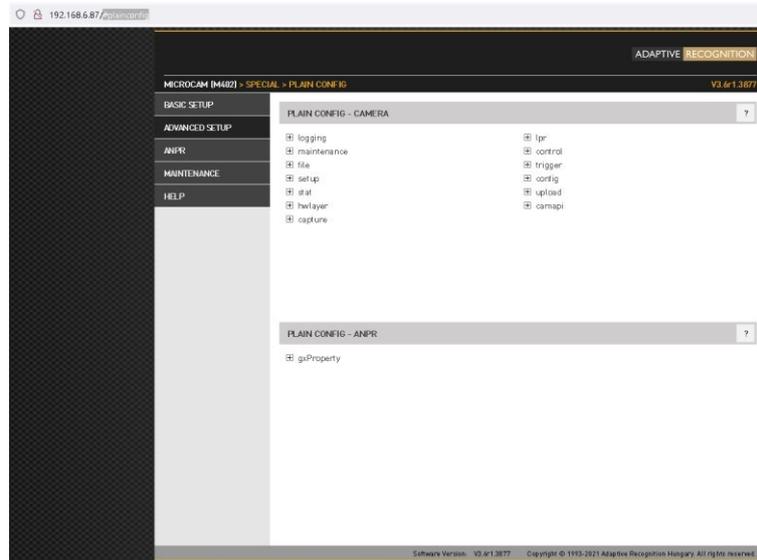


- Switch to **GPS IP forwarding** section, then;
 - activate the [enable] checkbox
 - fill in the desired port number in [Local Port] field
 - activate all location format [RMC, GSA, GGA, GSV] checkboxes
 - click SAVE

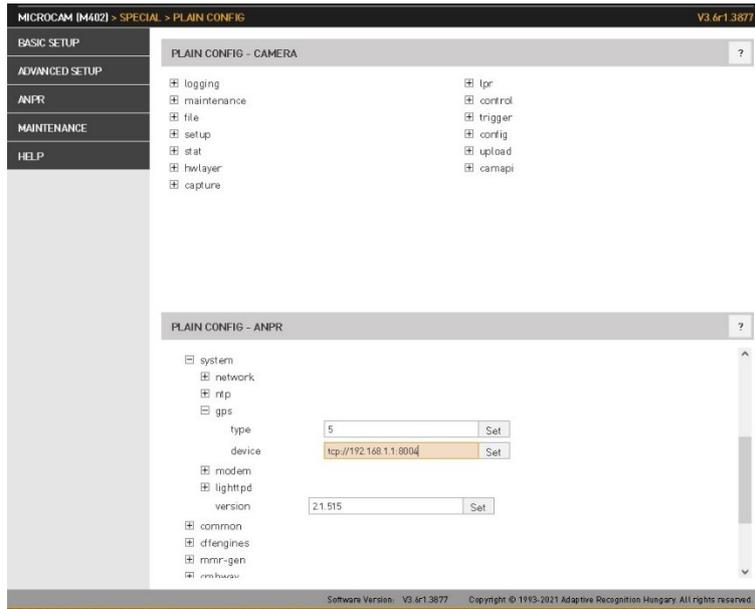


3.3. CONFIGURING ANPR CAMERA

- Access the camera's **Plain config** interface via web GUI, using 'IP-address'/#plainconfig



- Set the following property values, by following the tree-structure configuration panel by inserting the new value, then clicking on Set and rebooting the device after each property change
 - `gxProperty/default/cff/capture/gps/enabled: 0 => 1`
 - `gxProperty/system/gps/type: 0 => 5`
 - `gxProperty/system/gps/device: tcp://'IP-address:PORT'`
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