Quick Start Guide

SNAP ANPR Wall Mount Processor

Model 5411 1-Lane Network
Model 5412 2-Lane Network
Model 5413 3-Lane Network
Model 5414 4-Lane Network

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About this Guide
This guide is intended for installation and commissioning engineers who are familiar with SNAP ANPR processors. It covers the initial setup of the complete range of wall mount ANPR processors but much of the content also applies to our ANPR processors which are based on standard PC architecture.

Safety Notices Used In This Manual
Important! - Indicates a potential hazard that could seriously damage the equipment or endanger the engineer or subsequent user. Do not proceed beyond these notices until you have fully understood the implications.

Legal Notice
Camera surveillance is prohibited by law in some countries. Check the laws in your local region before using ANPR cameras and associated equipment.

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Support
Should you require any technical assistance, please contact your SNAP ANPR reseller.

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1. Description

These SNAP ANPR processors will recognise and log vehicle number plates from live ANPR camera video feeds. The processors feature a wide range of interfaces which enable specific actions to be taken based on whether the vehicle is known to the system; these include opening vehicle barriers or gates, displaying custom messages on driver feedback signs or raising alerts.

The processors are available in 1, 2, 3, and 4-lane versions and all feature networking as standard. However, all models can be upgraded in the field without restriction and without the need for any additional hardware.

2. Installing the Processor

These units are intended for wall mounting in plant rooms, equipment cupboards and street cabinets. Choose a location where all power and signal cables can enter through the bottom face of the cabinet.

Five cable glands are provided for incoming cables. If you plan to use surface conduit, just remove the large nylon gland and you can directly connect 20mm or 25mm conduit using the adaptor supplied.

VGA and USB connectors are provided for setup purposes. If the location is unsecure (such as a MSCP), you can disconnect these cables internally to prevent unauthorised use.

Important!
This product is not weatherproof and should be sheltered from rain and excessive moisture.

2. Installing the Processor (continued)

The cabinet is supplied with four wall hangers which must be used. These just simply screw into the four rear fixing holes provided.

Important!
Do not drill any additional holes in this cabinet or attempt to remove the internals as this will invalidate the warranty.
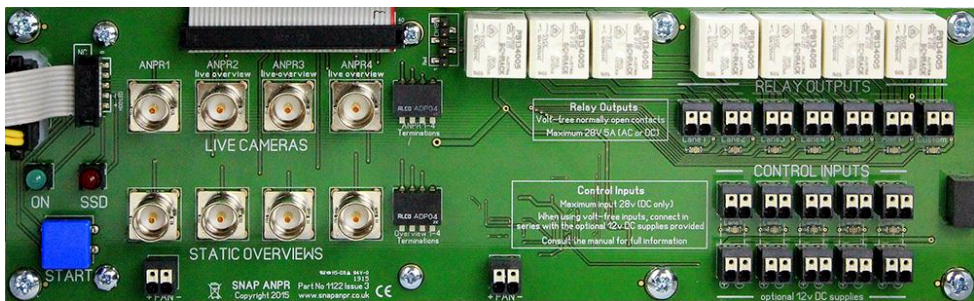
3. Connections

This unit requires a 230v ac mains power supply fused at 3A. A three-pin screw-termination IEC socket is provided for terminating the incoming power cable after it has passed through the cable gland or conduit entry.

Important!
This product must be earthed. You must use a three-core mains cable to power this equipment.

Connect incoming video signals to the BNC connectors provided. There is one colour overview input for each ANPR camera – connect these to any free *Live Overview* input but, once these are all used, connect to the *Static Overview* inputs. Live inputs are the first choice since the overview image is taken within 20ms of the ANPR capture, whereas static overview inputs can take up to 300ms before the image is recorded.
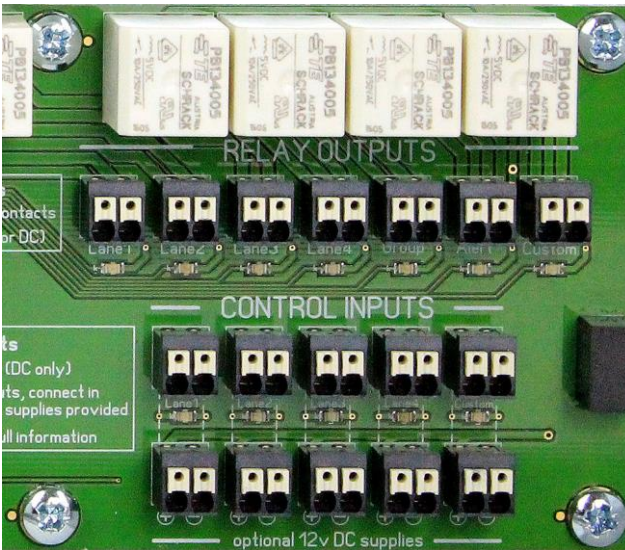
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3. Connections (continued)

Ensure the video termination switches are in the down position unless the video signals are being looped through to other equipment.

Relay output terminals are provided for each of the four lanes. These are normally-open contacts which close when an authorised vehicle is detected. The duration of this closure is 1 second by default but can be changed in the software. These relay outputs are primarily used for opening barriers, gates and road blockers.

The *Group, Alert* and *Custom* relay outputs are configured in the software.

The control inputs are used for special applications, such as when it is necessary to inhibit ANPR capture on a specific lane at certain times.

For maximum flexibility, the system is designed to accept volt-free closing contact inputs or voltage controlled inputs (up to 28v).

When using volt-free control inputs, you must wire your relay cable-pair in series with the optional 12v dc supply provided before connecting to the *CONTROL INPUT* terminal block.

Important!
Do not connect mains voltages to these relay outputs or control inputs. The maximum safe voltage is 28v.

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4. Set Up

Connect a USB keyboard (with trackpad) and a VGA monitor (minimum resolution 1280x1024) to the corresponding external connectors. To start the processor, momentarily press the blue *Start* button. Do not repeatedly press the *Start* button or hold it down continuously.

The initialisation process will take a minute before the *Main Screen* appears and unit is ready for use. All processors are factory set with lane 1 pre-configured. This means that you just need to connect an ANPR camera to the *ANPR1* BNC input in order for vehicles to be automatically recognised and appear on the *Main Screen.*

The main reason for vehicles not be recognised at this stage is due to poor camera set up. The golden rules are:-

(i)   Always view vehicles from the front.
(ii) Ensure the number plates are large enough. The width of the vehicle should fill the frame (see image below left).
(iii) Ensure number plates are fairly level (horizontal) within the image.
(iv) Set the camera exposure for the reflective number plate, not the general scene (which will typically be very dark).

Perfect ANPR Image

Poor ANPR Image

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5. Logging On

Before you can change any settings you will need to log on. On first use, the only account available will be the engineer's account. A sticker showing the default username and password is affixed to the bag containing this manual.

To log on, press the *Log On* toolbar button on the top left of the *Main Screen* (or press F2). The log on screen appears:-
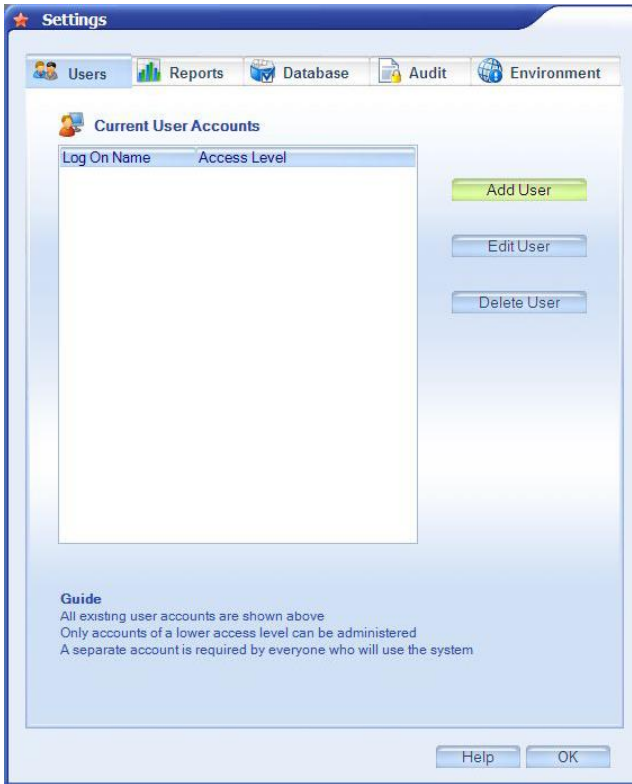

Log On Screen

The engineer's account has unrestricted access to all areas, including diagnostics. This password should not be provided to the end user – instead, the commissioning engineer should create at least one Administrator account for the end user.

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6. Adding Further Users

To add an additional user account, first ensure you are logged-on and then choose the *Settings* toolbar button at the top of the *Main Screen*.

Add User Account

Press the *Add User* button and follow the on-screen instructions. Note that you are only able to add users with a lower account access than your own – this means that any account may be created when logged on as an engineer.

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7. Configuring Additional Cameras

Each processor can accept up to 4 ANPR cameras and each of these four lanes may also have a single colour overview camera. The total number of possible video inputs is therefore 8.

Note that not all of the lanes may be available depending on the processor model.

ANPR cameras are designed to read highly reflective number plates and this usually results in a very dark image (see below left). It is often desirable, however, to record one or more high quality colour overview images of each recognised vehicle to aid identification (below right).

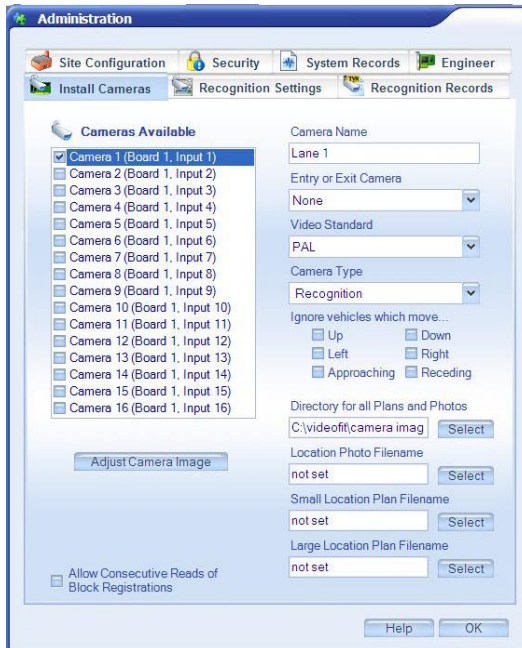
Typical ANPR Image   **Typical Overview Image**

Although lane 1 is pre-configured, if you wish to add further ANPR or overview cameras you will need to configure them (see opposite).

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7. Configuring Additional Cameras (continued)

To add additional cameras, first ensure you are logged-on with either the engineer or an administrator account and then choose the *Admin* toolbar button at the top right of the *Main Screen*. Then choose the *Install Cameras* tab:
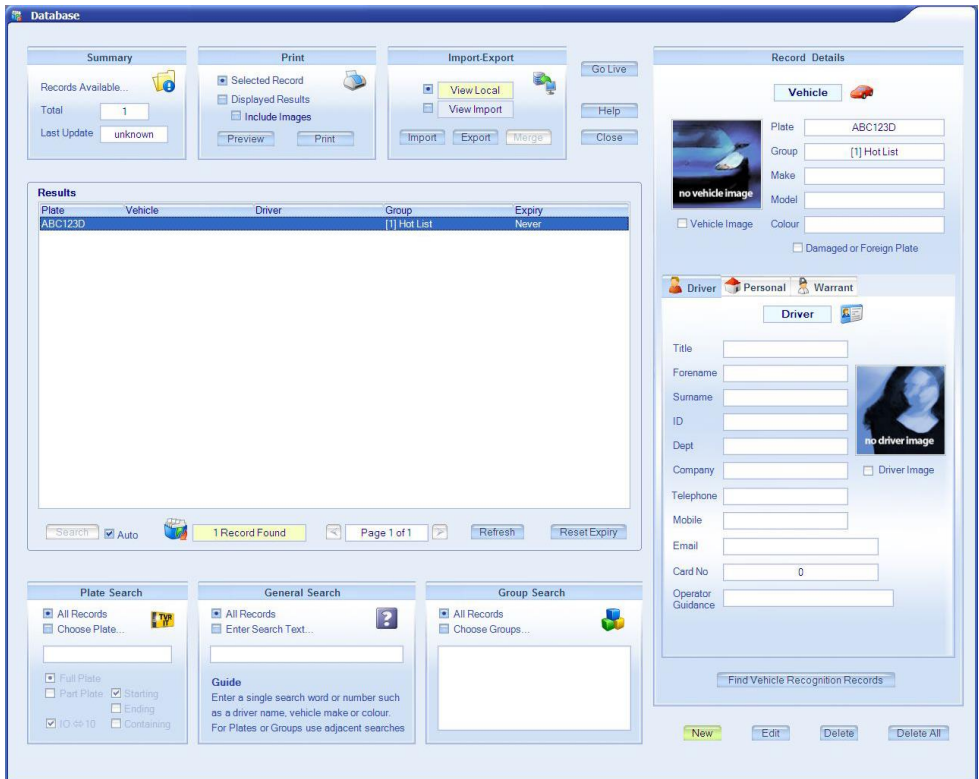

Add Cameras

If you wish to view the live video of any input, select the camera from the list and press the *Adjust Camera Image* button.

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8. Known Vehicle Database

One of the main benefits of an ANPR system is the ability to take various actions based on whether the vehicle is known. Allowing known vehicles to have automatic access to a site or raising automatic alerts for suspect vehicles are common requirements.

Database Screen

Known vehicles are entered in the *Database* screen. To display this window, choose the *Database* toolbar button at the top of the *Main Screen*.

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9. Adding Vehicles to the Database

To manually add a new vehicle, press the *New* button in the bottom right hand corner of the screen. The minimum information you will need to enter are the vehicle registration and the group, although there is a wide variety of additional information that may also be entered.
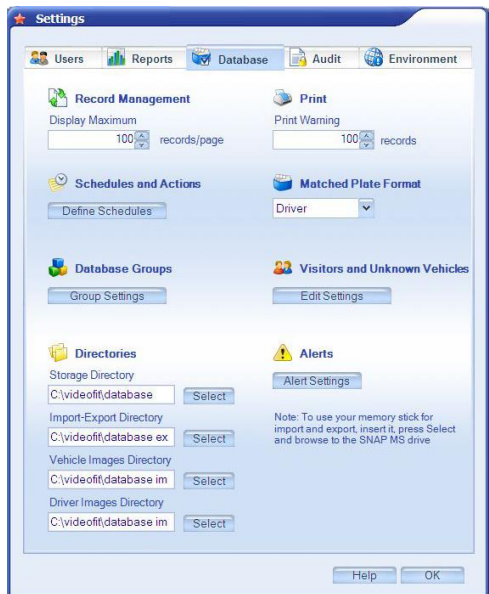
It is the group which determines whether a vehicle will be allowed entry through a particular barrier as well as the content of the LED Sign message, alerts and offences. You should therefore group vehicles (staff, contractors, deliveries, etc) to allow you to control access by a simple modification to the group settings (see next section).

10. Additional Database Groups

There are almost 1,000 groups available for you to use. Groups 1 and 2 are preset as *Hotlist* and *Visitor* respectively and cannot be changed.

To add additional groups, ensure you are logged-on with sufficient access rights and choose the *Settings* toolbar at the top of the *Main Screen*. Then choose the *Database* tab.
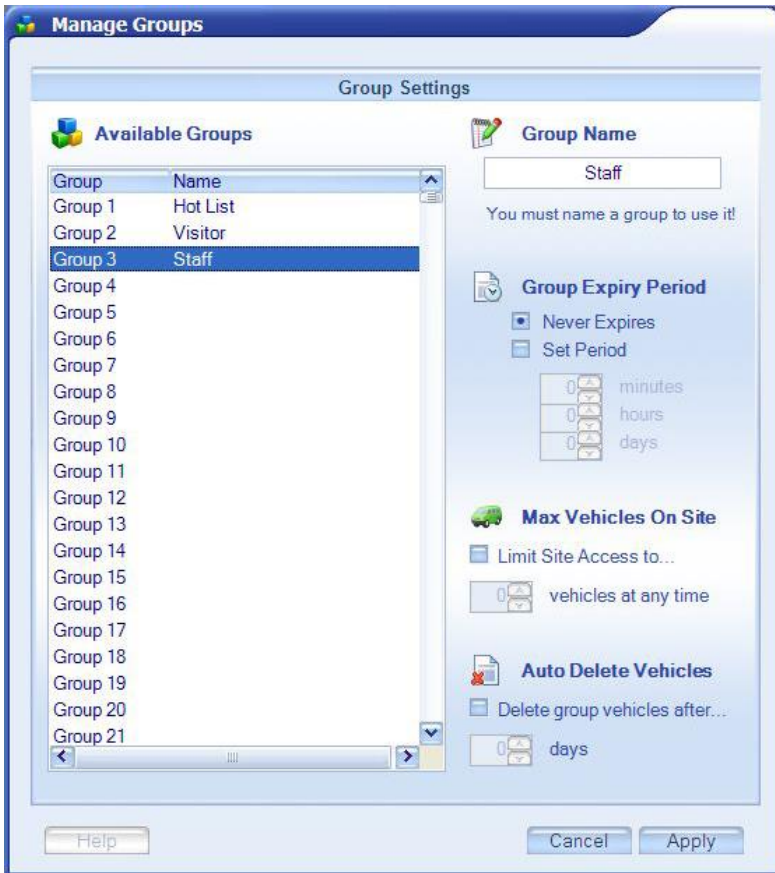
The actions for each group are configured by choosing the *Group Settings* button (see next section).

Database Settings Screen

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11. Group Settings

Here you can name each group, apart from groups 1 & 2 which are fixed. Use the *Group Expiry Setting* if you wish the vehicles to have only a limited period of access (the time period commences when that vehicle is added to the database). This is useful for custom visitor groups, for example, such as *Visitor 8 Hour* or *Contractor 30 Day*.
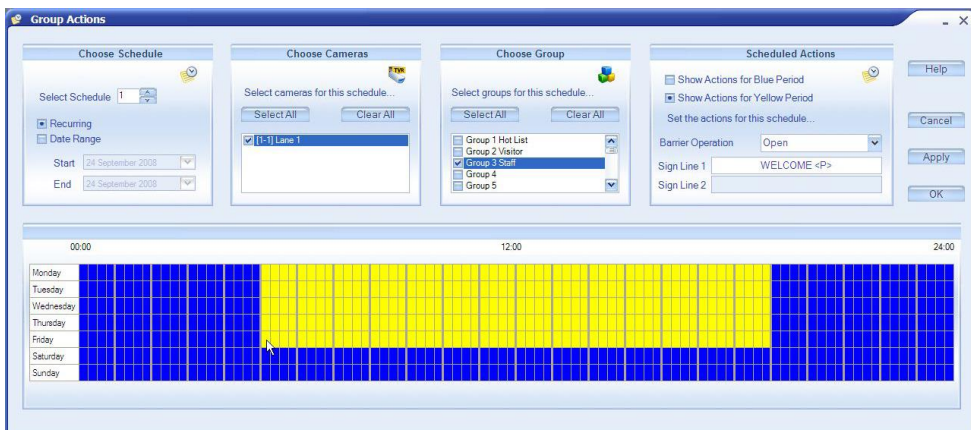

Adding Database Groups

12. Barrier Control & LED Sign Messages

Now that you have set up your groups you can configure which groups are allowed to open which barriers and also apply a time schedule, if required.

Choose the *Define Schedule* button from the *Database Settings* screen to display the scheduled group actions:-

Group Actions & Time Schedules

There are 8 schedules available for you to use, but please ensure you press the *Apply* button to save your settings before changing schedules.

Select the camera(s) and group(s) you wish to manage and then choose the required action for the blue and yellow periods shown on the weekly grid. You can change the blue and yellow periods by dragging with the mouse across the grid.

Note the second message sign entry box will be enabled only if a two-line sign has previously been configured (located at Admin> Engineer>Sign/Serial/Text).

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13. Networking

If you wish to create a network ANPR system then, as a first step, give each processor a unique processor number. This can be found on the *Engineer* tab in *Admin*.

Then choose *Capture* or *Manager* as required and press the *Network Setup button* (see below). Here you will need to add each processor that needs to communicate with this processor, together with the associated IP address.

Network Set Up

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13. Networking (continued)

When creating a network system, the following settings will need to be configured:-

 - User accounts (Capture & Manager)
 - Camera Names (Capture & Manager)
 - Group Names (Capture & Manager)
 - Graphical Reports (Capture & Manager)
 - Alerts (Capture & Manager)
 - Schedules & Actions (Capture)
 - Recognition Settings (Capture)

If required, Auto-correction would normally only be enabled on the capture processors and should be disabled at the Manager(s).

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14. Troubleshooting

Vehicles Not Captured
If the system is not recognising vehicles, park a vehicle at the intended capture point and click the associated camera on the *Main Screen* to check the live image. The plate should have good contrast, be reasonably level in the picture and should be large enough to be read (a standard rectangular plate will be around a quarter of the total image width).

Remember that there is a setting which determines when the same plate is allowed to be captured again – the default setting (10 secs) may be changed by navigating to *Admin>Recognition Settings* from the *Main Screen*. Note that there is a separate setting for each ANPR camera.

Barrier Not Opening
If the barrier or gate is not opening for a vehicle, check the following:-

    (i)   Ensure the plate has been read correctly
    (ii)   Check the vehicle is in the correct group in the Database
    (iii)   Ensure that the group is correctly set to open the barrier for that group, by that camera at that time of day/day of week.

Databases Not Synchronised
For a networked system, any database updates performed at the Manager should automatically appear at the capture processor. If this does not happen, check for connectivity between all processors and that all firewalls are enabled in both directions.

End

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