Nexus ANPR Smart Box

NASBox

OVERVIEW

NASBox is a complete integration solution for Hikvision TCM and Series 7 ANPR cameras. It provides regulated power via PoE+ and an ethernet communications hub for up to 2 (NASBox2) or 4 (NASBox4) cameras. Since each camera can cover up to 3 lanes of traffic (but see note ** below) a single NASBox can provide support for large multi-lane installations.

NASBox automatically retrieves ANPR data and images in real time for every vehicle from each camera connected to it. This data can then be augmented (for example by the incorporation of GPS co-ordinates and the application of meta-data to images) before being transmitted to a wide range of back office systems using industry standard protocols such as UTMC and BOF2.

NASBox provides a broad range of options for both wired and wireless communications to back office systems, including 3G, 4G, dual-band Wifi and gigabit Ethernet. A GPS receiver is included as standard, which provides accurate location information for transmission with ANPR data and can optionally be used to provide accurate time sync. External antenna connections are provided and antenna options are offered both for mounting direct to the box or for connecting via cable (where the NASBox is fitted inside a cabinet).

Nexus ANPR Smart Box	Specifications (NASBox2)
Number of cameras supported	1 camera: NASBox2-1
	2 cameras: NASBox2-2
Cellular communications (modem)	4G (LTE), 3G (HSPA+)
Wireless LAN (Wifi)	802.11 a/b/g/n Dual Band
GPS	GPS/GLONASS/BD
Ethernet	IEEE802.3ab 1000BASE-T
Wired serial communications	USB (Console only - internal)
Non-volatile storage	16GB
Enclosure	Moulded polycarbonate
Ingress protection rating	IP66
Operating temperature range	-30° to +60° C (ambient)
Power supply	48V d.c. (16W typ with 1 camera, 27W typ with 2 cameras)
Unmetered Supply Elexon Charge Code	8070005000100
Dimensions	200 x 120 x 75mm
Weight	0.9kg
Camera Connections (PoE power and data)	2x M20 Pass-thru glands
Ethernet Connection (WAN - data output)	Waterproof RJ45 panel socket
Ethernet Connection (engineer's terminal)	Waterproof RJ45 panel socket
Input power connection	M20 7-pole waterproof connector***

** The output communications channel(s) configured must have sufficient bandwidth to transmit data and images for the volume of traffic seen by all connected cameras.

*** Mating cable mounting plug with solder terminals is included

SMART FEATURES

➢ Simultaneous transmission of ANPR results to multiple back office systems via different communications channels and using different protocols

➢ Automatic cropping of the camera image to provide overview images containing only the vehicle of interest, the area of the overview and the compression being configurable to achieve a range of image file sizes

➢ Optional allocation of vehicles to lanes according to direction of travel

➢ User configurable meta data can be applied to overview images including, for example, camera ID, timestamp, lat/long co-ordinates, vehicle registration

➢ Buffering of up to 100,000 vehicle records in the event of communications outages and automatic forwarding when communications are restored

➢ Image retrieval on demand (where supported by the back office) - images can be requested selectively for vehicles of interest, reducing comms data charges and back office storage requirements

➢ Streaming in real time or batching of data at configurable intervals

➢ Provides time synchronisation for all connected cameras, GPS and SNTP options

➢ De-duplication of camera plate reads to ensure only one plate read per vehicle is output

➢ Optional encrypted transmission of data and images (back office must support)

➢ NEWA (Nexus Engineers Workstation Application) user-friendly software tool included for NASBox configuration and setup via local or remote connections
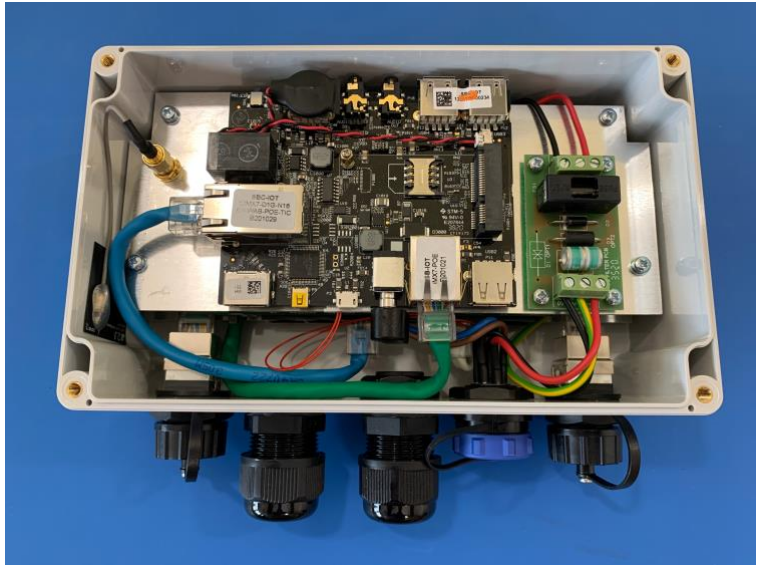
RAWBox POWER FAIL ALERT & WATCHDOG POWER CYCLE OPTION

An optional add-on unit (RAWBox) provides remote power fail alerts and automatic watchdog power cycling.

On detecting loss of power, a "special" plate read (e.g. QQQQQP0) is sent to the Management Server or BOF. In the QRO Management Server (CSGS), the "special" plate generates a system alert which is immediately emailed to the relevant addressees to report that the site has gone offline. Similarly, a BOF can usually be configured to raise an alert when the "special" plate is received. When incoming power is restored, a second "special" plate read (e.g. QQQQQP1) is sent which triggers a further system alert to indicate that the site is back on line.

If the NASBox software determines that there may be an issue (for example with the modem) which it has not been able to resolve by an appropriate soft reset, then it will trigger a power disconnection circuit to power cycle the NASBox. Also, there is a hardware watchdog circuit which is kicked periodically by the software to indicate that the program is running normally. In the unlikely event that the software stops operating normally, the watchdog will time out and will trigger a timed power disconnection causing a power-on reset of the unit.