



Manual

Neon 2502A Neon Camera



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1.0 INTRODUCTION

This document describes the configuration and operation of the Unidata 2502A Neon camera module with the Neon Remote Terminals and Neon Remote Modules and Neon Applications Software.

2.0 INSTALLATION

2.1 Equipment Required

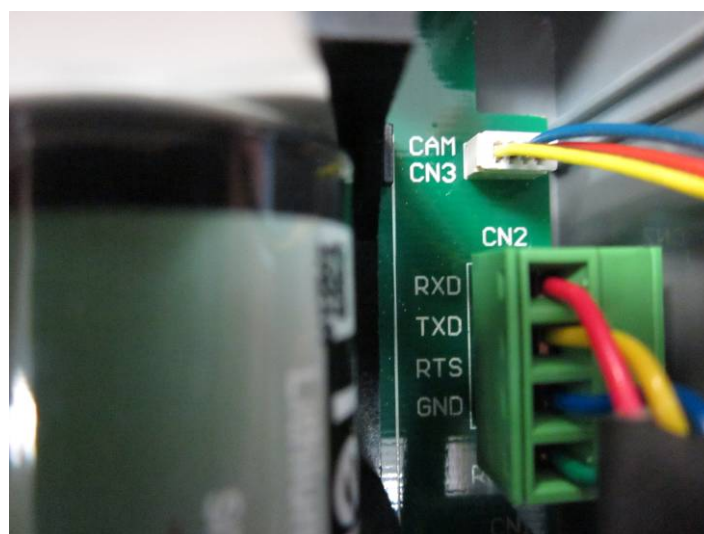
- Laptop PC
- Starlog V4 software
- Commissioning Cable
- Camera to NRT communications cable

2.2 Camera Physical Installation

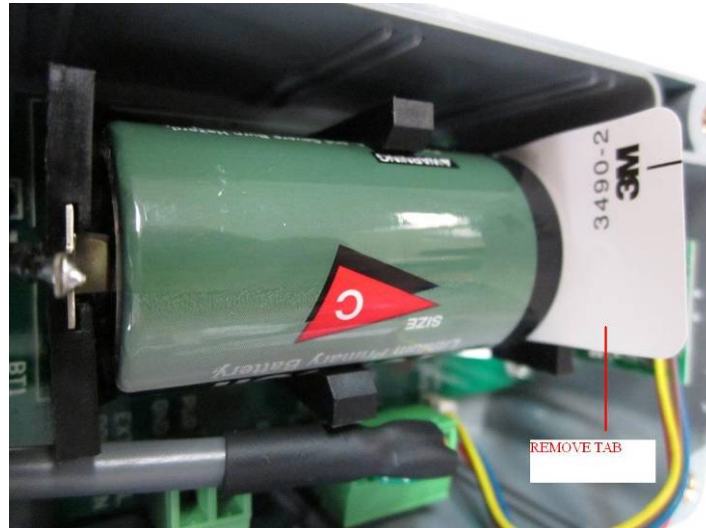
Attach the camera housing to the pole using the supplied mounting hardware.

The housing should be angled slightly downwards to allow water to drain off the glass lens window. The integral sun shade is moveable and can be slid to different positions. Direct sunlight should be kept from striking the glass lens window to obtain maximum picture quality from the camera.

Connect the data cable to the Camera module. The wiring colours are shown below:



Remove the internal battery protective shipping tab and connect external power supply (if available).



Connect a power source, nominally 12/24 Volts, as per the photo below, labelled PWR and GND



3.0 CAMERA SITE COMMISSIONING

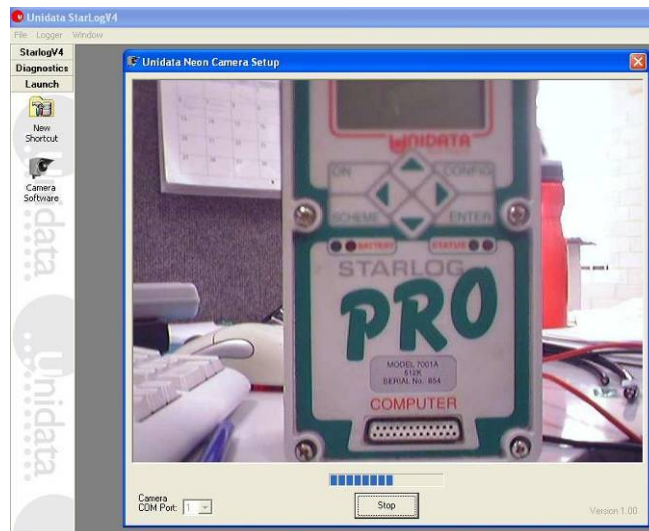
The Starlog Version 4 software contains an application to assist with camera shot orientation and focusing. Connect the Camera module to your PC using the Installation cable. Take care to plug in the installation cable the correct way around (each end is labelled).

Starlog V4 software revision 82 and higher have the camera setup program embedded. If you are using an older revision of software, run the supplied program CameraSetup.exe. For version 82 and higher, open Starlog software on your PC. Click the Neon Camera icon in the left hand task bar.



Select the appropriate COM port from the dialog box. Click on the Start button. The camera will begin to take 640 x 480 JPEG pictures. The picture will be updated approximately once every 5 seconds. Adjust the camera position to achieve the desired shot framing.

Next, adjust the camera focus if required. The focus can be adjusted by screwing the lens clockwise or anti-clockwise. Viewed from the front of the camera, clockwise will focus on distant objects, anti-clockwise will focus on close objects.



When the camera shot view and focus are correct, click the stop button. Disconnect the camera module installation cable from the camera module.

Connect the Camera module to the NRT, by plugging the 9 pin D connector into the NRT serial port.

Site Commissioning is now complete.

4.0 TAKING A PHOTO

There are two ways to take a photo, via the NRT scheme (either at a regular interval or when an event happens), or on demand via the Neon web interface.

4.1 Taking a Photo via the Neon Web Interface

To take a photo via the Neon web interface, please follow the following steps:

- Under the Loggers Tab, click on the Camera Tab and then Click on Add Camera.
- Select Camera 0 from the drop down box.
- Enter a description.
- Select the desired resolution for the picture.
- Click on the Insert button when done.

Note that the resolution selected will affect the file size of the generated photo. As a guide, a 640 x 480 picture will be approximately 20 to 25K bytes. This data size should be taken into account when selecting a monthly data quota for the NRT SIM card or Satellite account.

Configuration Parameters

ID Number: 44 ☒ Active ☐ Decommission
Logger Name: test
Logger Type: Unidata
Node: ..v33 testing 2014D flash
Cluster: Not Specified

Cancel Save Delete

Communications

Nrt

NRT Serial Number: 0
SIM Reference:
NRT ID: 44
Comms Frequency: 5 (Minutes)
Comms Offset: 00:00
Last Comms: 11:35 28/06/2011
(HH:MM)
Retry Attempts: 0
Retry Wait Period: 0 (Min)
Data Late Delay: 150 (Sec)
Model: 2014D Ext Mem
External Power: 12V
Auto Re-Init: ☐

Internal Logger Ancillary Logger Commands Logger Registers Real Time Data **Cameras**

Add Camera

Camera	Description	Resolution
0	Camera1	640x480

Insert
Cancel

4.2 Taking a Photo on Demand

To take a picture on demand, click on the Capture button. This will queue a command to be sent to the NRT upon its next communication time (as set in the Comms Frequency). The next time the NRT communicates to the Neon server, it will process the command, take a picture, and upload it to the Neon server.

Configuration Parameters

ID Number: 44 ☒ Active ☐ Decommission
Logger Name: test
Logger Type: Unidata
Node: ..v33 testing 2014D flash
Cluster: Not Specified

Cancel Save Delete

Communications

Nrt

NRT Serial Number 0
Comms Frequency 5 (Minutes)
Retry Attempts 0
Model 2014D Ext Mem

SIM Reference
Comms Offset 00:00 (HH:MM)
Retry Wait Period 0 (Min)
External Power 12V

NRT ID 44
Last Comms 11:35 28/06/2011
Data Late Delay 150 (Sec)
Auto Re-Init

Internal Logger Ancillary Logger Commands Logger Registers Real Time Data Cameras

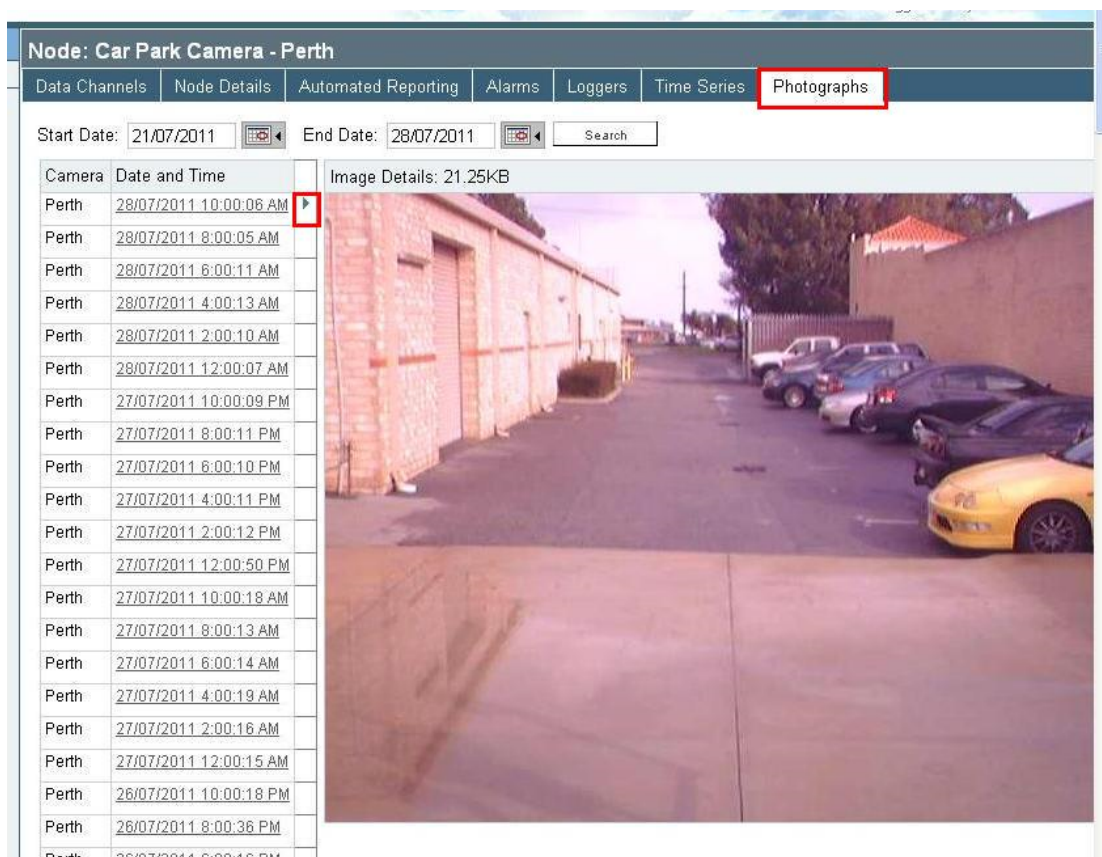
Add Camera

	Camera	Description	Resolution	
Capture	0	Camera1	640x480	Edit

To take a picture via the NRT scheme, contact your Unidata representative for assistance.

4.3 Viewing a Picture

Click on the Photographs Tab and this will show a list of Photographs. An arrow will appear next to the picture currently being displayed. Click on a different Date and Time to display that picture.



Node: Car Park Camera - Perth

Data Channels | Node Details | Automated Reporting | Alarms | Loggers | Time Series | **Photographs**

Start Date: 21/07/2011 End Date: 28/07/2011 Search

Camera	Date and Time	
Perth	28/07/2011 10:00:06 AM	▶
Perth	28/07/2011 8:00:05 AM	
Perth	28/07/2011 6:00:11 AM	
Perth	28/07/2011 4:00:13 AM	
Perth	28/07/2011 2:00:10 AM	
Perth	28/07/2011 12:00:07 AM	
Perth	27/07/2011 10:00:09 PM	
Perth	27/07/2011 8:00:11 PM	
Perth	27/07/2011 6:00:10 PM	
Perth	27/07/2011 4:00:11 PM	
Perth	27/07/2011 2:00:12 PM	
Perth	27/07/2011 12:00:50 PM	
Perth	27/07/2011 10:00:18 AM	
Perth	27/07/2011 8:00:13 AM	
Perth	27/07/2011 6:00:14 AM	
Perth	27/07/2011 4:00:19 AM	
Perth	27/07/2011 2:00:16 AM	
Perth	27/07/2011 12:00:15 AM	
Perth	26/07/2011 10:00:18 PM	
Perth	26/07/2011 8:00:36 PM	
Perth	26/07/2011 6:00:16 PM	

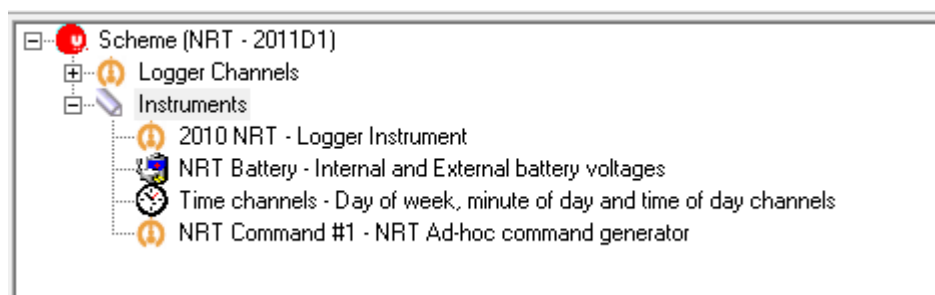
Image Details: 21.25KB

The preview window shows a car park scene with a yellow car in the foreground and several other cars parked in the background. A red arrow points to the first row of the table, indicating the currently selected image.

4.4 Scheme Takes a Photo Every 'n' Minutes

This section describes how to create a scheme that takes a regular photo using StarlogV4. The interval between photos is configured in the scheme using scheme Events.

Create a new NRT scheme using StarlogV4 if you do not already have one. Open the scheme using StarlogV4's Scheme Editor and add the "Time channels" instrument and the "NRT Command" instrument to the scheme from the PDLTRANS Unidata Instrument Library.



Next create a "take photo" NRT command file using a Hexadecimal editor such as Hex Workshop. Any hex editor will do.

Enter the following hexadecimal bytes into the editor and save the file with an appropriate name and using the ".cmd" suffix.

E.g. "Take photo 640x480 camera 0.cmd"

04 22 05 03 07 30 05 00

Double click on the "NRT Command" instrument in the scheme to open it and use the "Add Command" button to add the previously created "take photo" command file to the instrument.

Now go to the Events page of the Scheme Editor. Add a new Event and set the properties as per the picture below. Be sure to use the "Delta Channel A>B" Event, set Channel A to "Time channels – MOD" (MOD means Minute Of Day) and set Channel B to how often you want to take a photo in minutes. Set the Output action to your "take photo" NRT Command. Save the scheme and upload it to Neon.


Name	Description	Event	Parameter A	Parameter B	Parameter C	Output	Log Buffer
Log While	Enables logging to Main Buffer when true	Always					
Regular Photo	Take Photo on Regular Schedule	Delta Channel A > B	MOD	60			

Name
Regular Photo


Description
Take Photo on Regular Schedule


☒ Enable Event


Event
Delta Channel A > B

Channel A: {}
 Time channels - MOD

B
60

Output
 bc Command - Take a 640x480 photo camera 0.cmd

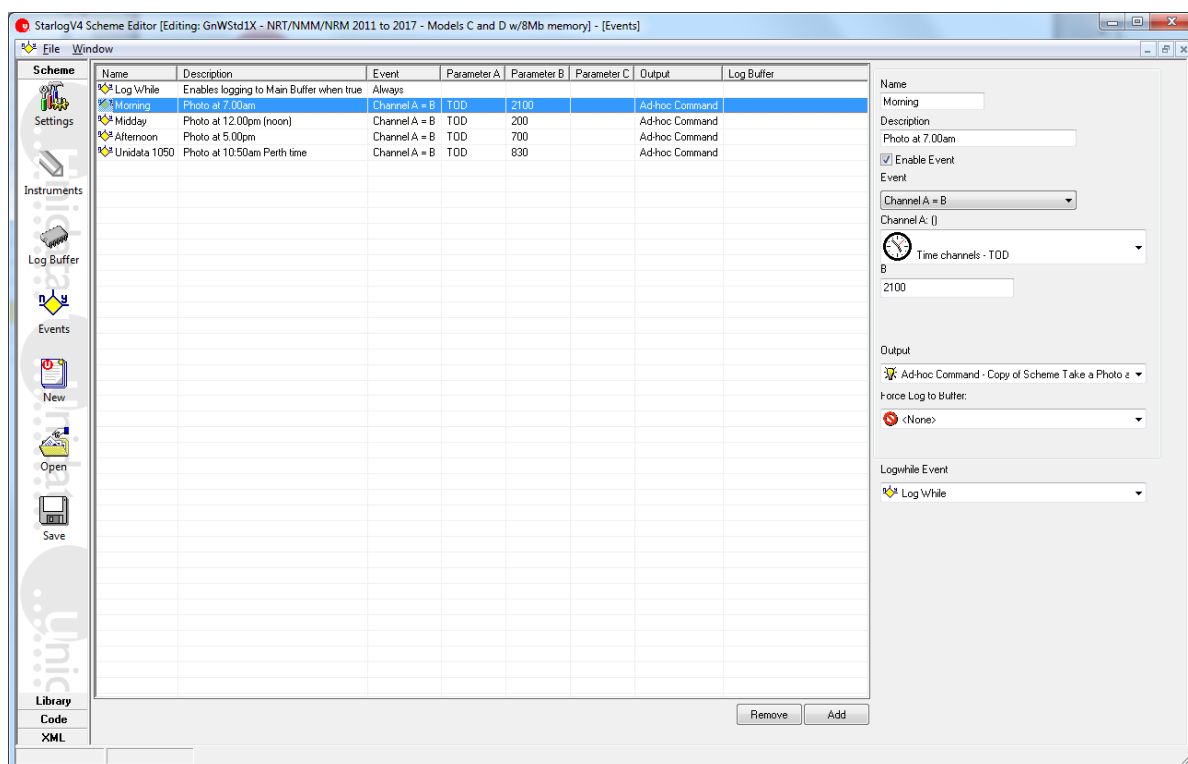
Force Log to Buffer:
 <None>

Logwhile Event
 Log While

4.5 Scheme Takes a Photo according to a Schedule

If you wish to take photos on a schedule, only at specific times of the day (this is often done to avoid taking photos in the middle of the night if there is no lighting available), then you can add individual events for each time that you want to take a photo.

In this case you use the TOD “Time Of Day” data channel from the “Time channels” instrument, with the “Channel A=B” event. Just remember that times are entered into Channel B as UTC times, not local time! You must allow for the difference between UTC time and the time zone that the camera is in. The same “NRT Command” is used for each event.



The screenshot shows the StarlogV4 Scheme Editor interface. The main window displays a table of events with columns: Name, Description, Event, Parameter A, Parameter B, Parameter C, Output, and Log Buffer. The table contains four rows of events, all using the 'Channel A = B' event type and 'Ad-hoc Command' output.

Name	Description	Event	Parameter A	Parameter B	Parameter C	Output	Log Buffer
Log While	Enables logging to Main Buffer when true	Always					
Morning	Photo at 7.00am	Channel A = B	TOD	2100		Ad-hoc Command	
Midday	Photo at 12.00pm (noon)	Channel A = B	TOD	200		Ad-hoc Command	
Afternoon	Photo at 5.00pm	Channel A = B	TOD	700		Ad-hoc Command	
Unidata 1050	Photo at 10.50am Perth time	Channel A = B	TOD	830		Ad-hoc Command	

The right-hand panel shows the configuration for the selected 'Morning' event. It includes fields for Name, Description, and a checkbox for 'Enable Event'. The 'Event' dropdown is set to 'Channel A = B', and the 'Time channels - TOD' dropdown is set to 'B'. The 'Output' dropdown is set to 'Ad-hoc Command - Copy of Scheme Take a Photo'. The 'Logwhile Event' dropdown is set to 'Log While'.

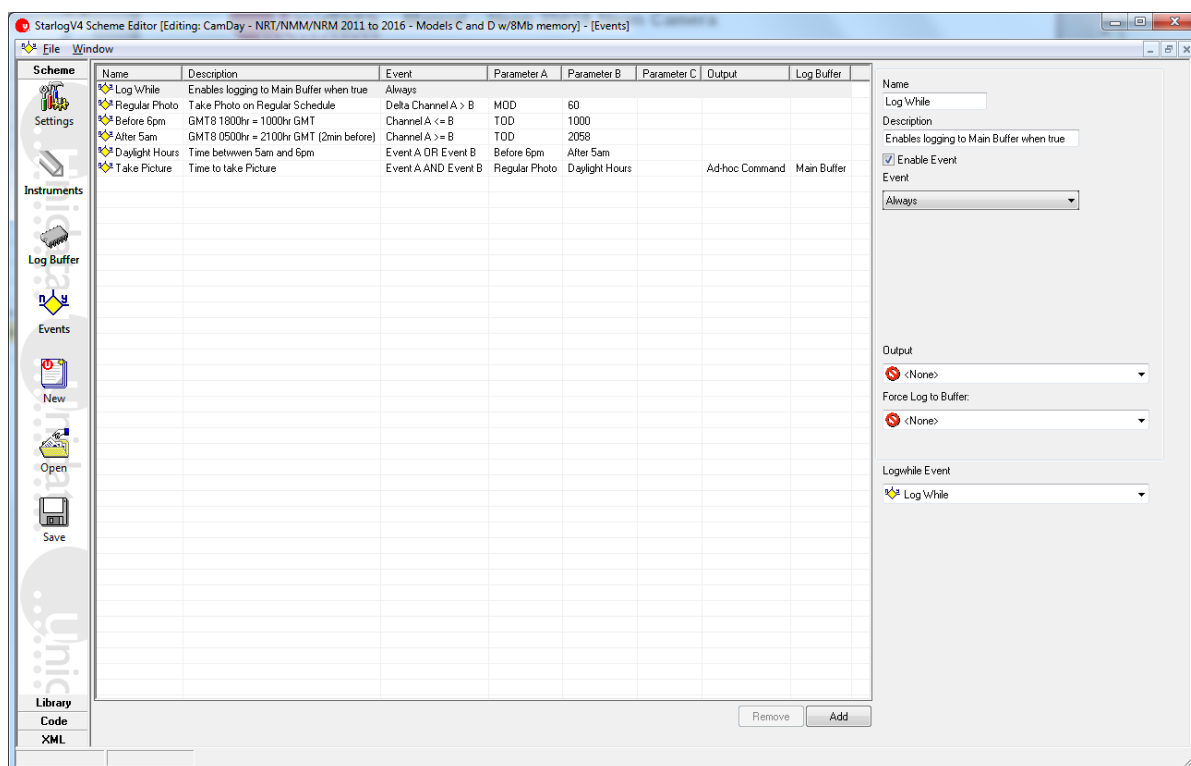
4.6 Scheme Takes a Periodic Photo Only During Specific Hours

The previous two methods can be combined to take regular photos only during certain times of the day - usually only during daylight hours.

Additional events are used with the periodic “take photo” event to restrict the times that the periodic “take photo” event will fire.

Note that the “Before 6pm” event must be “Parameter A” and the “After 5am” event must be “Parameter B” in the “Daylight Hours” event. The event with the smaller of the two “Parameter B” values must be used as “Channel A” for the “Event A OR Event B” logic to work correctly.

Name	Description	Event	Parameter A	Parameter B	Parameter C	Output	Log Buffer
Log While	Enables logging to Main Buffer when true	Always					
Regular Photo	Take Photo on Regular Schedule	Delta Channel A > B	MOD	60			
Before 6pm	GMT8 1800hr = 1000hr GMT	Channel A <= B	TOD	1000			
After 5am	GMT8 0500hr = 2100hr GMT (2min before)	Channel A >= B	TOD	2058			
Daylight Hours	Time between 5am and 6pm	Event A OR Event B	Before 6pm	After 5am			
Take Picture	Time to take Picture	Event A AND Event B	Regular Photo	Daylight Hours		Ad-hoc Command	Main Buffer



5.0 ROUTINE MAINTENANCE

The glass lens window on the camera housing should be wiped with a clean soft damp cloth each time the site is visited.

Estimated battery life for the internal C cell lithium battery is 2,000 pictures or 5 years, whichever occurs first.

The internal battery should be changed before this interval.