

Intrepid Control Systems, Inc.

Video Logging using wireless data logger with GPS settings

Document Number: G-ICSI-1005

Rev 2.0 08/2014

Contents

1. Introduction:	3
2. Video Recording.....	3
2.1 Hardware:	3
2.2 Camera setting.....	3
2.3 Script Configuration.....	6
2.3.1 Create function block for GPS Enable/Disable:	6
2.3.2 VehicleScape DAQ configuration for Video Logging:	7
2.4 Logger GPS setting	9
2.4.1 ‘Enable GPS Update’ option :.....	9
2.4.2 Enable ‘Use GPS satellite’ Option:.....	9
2.5 Hardware Setup:	10
2.6 Extractor setting to extract the logged data from the SD Card	11
2.7 Playback the logged data in VSpy for Video and GPS Track.....	13
3. Contact Us:	14

1. Introduction:

Vehicle Spy 3 has a new feature for logging the streaming video captured by the camera connected to neoVI Plasma/ION. Video data logging feature is very useful to check synchronized status of vehicle parameter status, vehicle position on map and video of that time.

This document explains about all the settings and process for Video Data Logging using camera and wireless data logger.

2. Video Recording

2.1 Hardware:

neo VI Plasma/ION, Axis IP camera 1214-E

2.2 Camera setting

Axis IP camera is used for video logging in Plasma/ ION through DAQ port. It supports recording from up to 8 cameras. Using Axis 1214-E is recommended.

Camera has to be configured to connect with Plasma/ ION.

Following are the steps for configuring the Camera. Make sure to SAVE the settings in each step.

- Step 1: After connecting the camera to network, use axis IP utility (<http://www.axis.com/techsup/software/iputility/software.php>) to locate the camera. It will detect camera automatically and show camera details as in Figure 1.

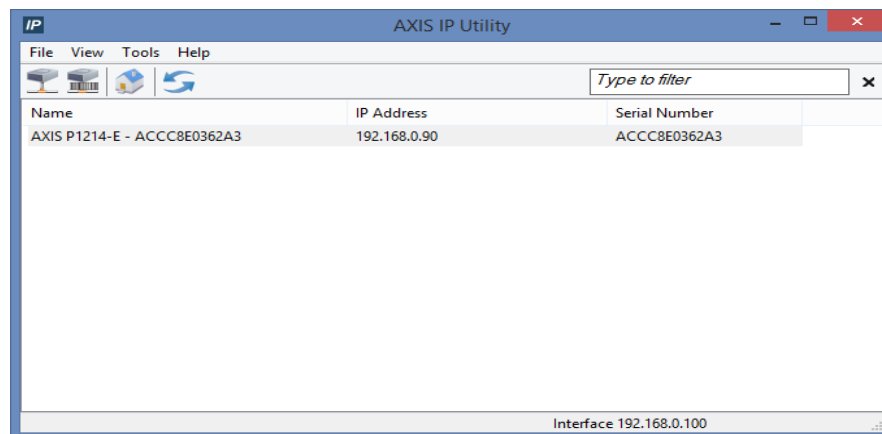


Figure 1: Detect Camera for Video Logging in Axis IP Utility

- Step 2: Go to the homepage. User will be prompted for a password if logging in for the first time. Create username and root password and press Ok. It will open Axis camera page on network with live view.
- Step 3: Go in 'Setup' option. Select Basic setup → Users → Select Enable anonymous viewer login and press Save button (Figure 2)

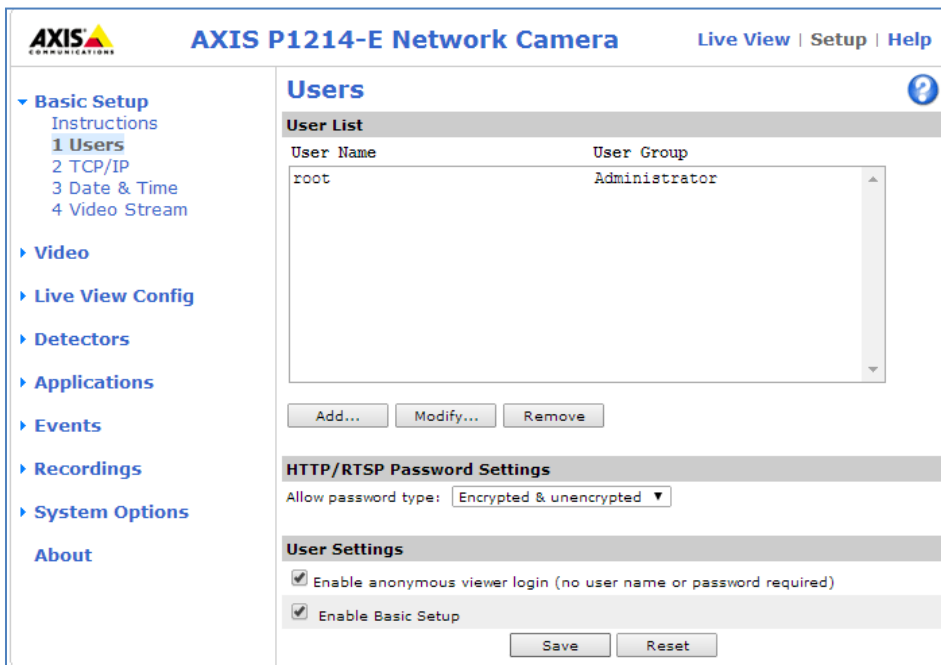


Figure 2: Setup Camera for Video Logging in Axis IP Utility

- Step 4: Go in Basic Setup → TCP/ IP → Enable IPv4 and Select ‘Use the following IP address’. Create new IP address for camera as follows and press ‘Save’ button (Figure 3)
 - IP address: 192.168.2.x - x ranges from 1 to 8. When connecting multiple cameras use different IP's. Using cameras with same IP will result IP conflict.
 - Subnet Mask: 255.255.255.0
 - Default router: 192.168.2.254

The screenshot displays the web interface for an Axis P1214-E Network Camera. The page title is "AXIS P1214-E Network Camera" with navigation links for "Live View", "Setup", and "Help". A left sidebar contains a menu with "Basic Setup" (sub-items: Instructions, 1 Users, 2 TCP/IP, 3 Date & Time, 4 Video Stream), "Video", "Live View Config", "Detectors", "Applications", "Events", "Recordings", "System Options", and "About". The main content area is titled "Basic TCP/IP Settings" and includes a help icon. It is divided into several sections: "Network Settings" with a "View" button; "IPv4 Address Configuration" where "Enable IPv4" is checked, "Obtain IP address via DHCP" is unselected, and "Use the following IP address:" is selected. The IP address field contains "192.168.2.1", the subnet mask is "255.255.255.0", and the default router is "192.168.2.254". A "Test" button is next to the IP field. "IPv6 Address Configuration" has "Enable IPv6" unselected. The "Services" section has "Enable ARP/Ping setting of IP Address" and "Enable AVHS" checked. Under "Enable AVHS", "One-click enabled" is selected over "Always". There are input fields for "Proxy:", "Proxy port:" (containing "3128"), "Proxy login:", and "Proxy password:". The "Proxy authentication method:" has "Basic" selected over "Digest" and "Auto". At the bottom, there is a "Settings..." button for "AXIS Internet Dynamic DNS Service" and "Save" and "Reset" buttons. A footer note says "See also the [advanced TCP/IP settings](#)".

Figure 3: Basic TCP/IP settings of Camera in Axis IP Utility for Video Logging

The Camera is now set with new IP address.

2.3 Script Configuration

2.3.1 Create function block for GPS Enable/Disable:

- Cameras can be enabled/ disabled during runtime using CoreMini signal.
- Add a Function Block as a Script from ‘Scripting and Automation → [Function Block](#)’ Use ‘Set Value’ command and select the signal from Expression builder window
 → Physical IO → General neoVI Hardware → Video Recording Enable.
- Each bit of Video Recording Enable signal corresponds to one camera. LSB starting from 192.168.2.1 to 192.168.2.8 (Figure 4 (2))
- Similarly, GPS can be enable/disable using function block. Use ‘Set Value’ command and select the signal from Enter Expression window → MISC → GPS enable. (Figure 4 (1))

Step	Description	Value	Comment
1	Set Value	{GPS Enable} = 1	// GPS Enable
3			
4	If	{HS CAN (Rate) :net0-1}>1	
5	Set Value	{Video Recording Enable} = 01	// Enable Video recording of camera 1
6	Else		
7	Set Value	{Video Recording Enable} = 0	
8	End If		
9			

Figure 4: Function Block for GPS Enable/Disable

2.3.2 VehicleScape DAQ configuration for Video Logging:

- Go to Measurement → VehicleScape DAQ → Standalone logging.
- Create and configure collection for Entire bus (Figure 5)

The screenshot displays the 'Standalone Logging' configuration window. At the top, there are tabs for 'Database/Hardware Setup', 'Channels', 'PC Logging', 'Standalone Logging', 'Gateway', and 'Online'. A 'DAQ 1' tab is also visible. Below the tabs, there are buttons for 'Messages', 'Histogram', and 'Bus Query'. The main configuration area is divided into several sections:

- File Name Setup:** A text field contains 'Vehicle Log' and a checked checkbox for 'Append Time and Date to file name'.
- Message Collection Options:** Radio buttons are selected for 'Entire Bus' and 'Selected Channels'. An 'Advanced Options...' button is present.
- Collection Start Options:** Radio buttons are selected for 'When Expression is True'. A text field contains the expression '{HS CAN (Rate) :net0-1}>=1'. Below it, there are checkboxes for 'OR neoVI MIC button press' and 'OR neoVI MOTE / Push Button Pendant on MISC 5 button press'.
- Always Collect DAQ Channels:** A checkbox for 'Always DAQ' is unchecked.
- Collection Configuration:** Radio buttons are selected for 'Finish After # of Messages'. The text field shows '100000' and '~6.10352MB'. Another radio button is selected for 'Finish on Expression' with the expression '{HS CAN (Rate) :net0-1}<=1'.
- Restart Options:** Radio buttons are selected for 'Restart'. Text explains the actions for 'Stop', 'Restart', and 'Force Restart'.
- Collection Upload (wireless only):** Checkboxes for '3G' and 'WiFi' are checked.

Figure 5: VehicleScape DAQ configuration for Video Logging

- Check 'Enable video logging' checkbox from Generate option of standalone logging tab to enable video logging (Figure 6).

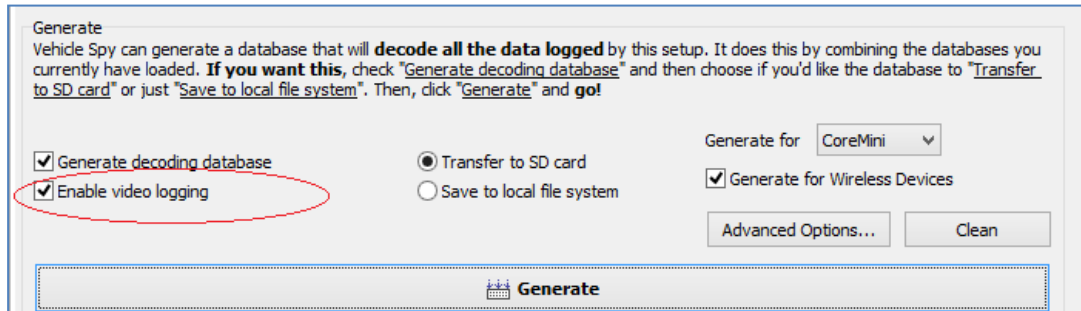


Figure 6: Checkbox for enabling Video Logging

- Optionally, user can also select the Frames per second and resolution for the camera. This can be done from the 'CoreMini Executable Generator' window. click 'Generate' button it will open this window.
- Select 'Advanced setting' tab and configure frame per second and resolution parameter of camera (Figure 7).

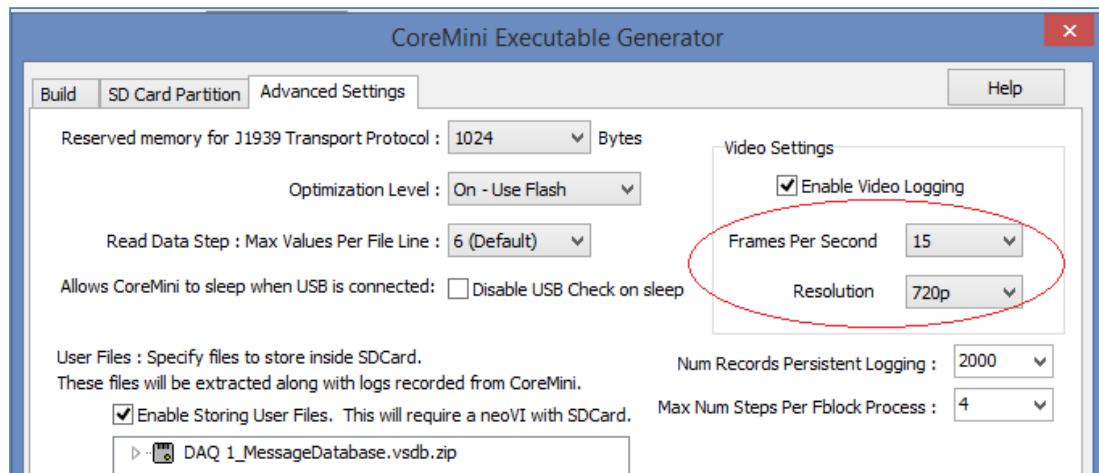


Figure 7: Settings for Video Logging in CoreMini Executable Generator

- A .wivi will be created after this window is closed. Upload this .wivi file into the device.

2.4 Logger GPS setting

2.4.1 'Enable GPS Update' option :


- Select 'Wireless neoVI' icon  from the logger main screen.
- Go to 'WirelessneoVi setting'. Click on 'GPS/Location' option.
- Checked 'Enable GPS Update' (Figure 8 (1)).
- It will enable GPS and display the GPS symbol on top of the Screen (Figure 8 (2)).
- Set other option as per requirement.



Figure 8: Settings to Enable GPS Update from the device

2.4.2 Enable 'Use GPS satellite' Option:

- Select 'Setting' icon  from the logger main screen.
- Click on 'location and security' option.
- Enable 'Use GPS satellite' Option.

2.5 Hardware Setup:

- Fit Camera sensor end on vehicle in such way that it will capture view as per requirement.
- Connect other end of camera (LAN cable) to the DAQ port of logger device.
- Arrange vehicle battery power to power up the camera.
- Connect Logger (Plasma / ION) to vehicle using OBD connector.
- As Ignition on, Logger script will start and camera will start video recording.
- The LEDs from logger can be used to study the logger and camera status:
 - LED 1 on logger is blinking fast (CoreMini is running).
 - LED 2 on logger is blinking with about 2 seconds cyclical time (Data is written to SD card)
 - LED NET on camera is blinking very fast (Video data is captured and transferred via the Ethernet port. It will take about 2 minutes to camera boot up before LED NET blink.)

2.6 Extractor setting to extract the logged data from the SD Card

After logging data, remove SD card from logger and connect to the laptop or to the PC using USB card reader to extract data.

- Go To ‘Tools’ → ‘Utilities’ → ‘Extract/Export’.
- Extract/Export window will show the following details(Figure 9)
 - Card data status in per cent.
 - Start and stop time.
 - Source data: SC card name
 - Output Data: browse folder where you have to store extract data.

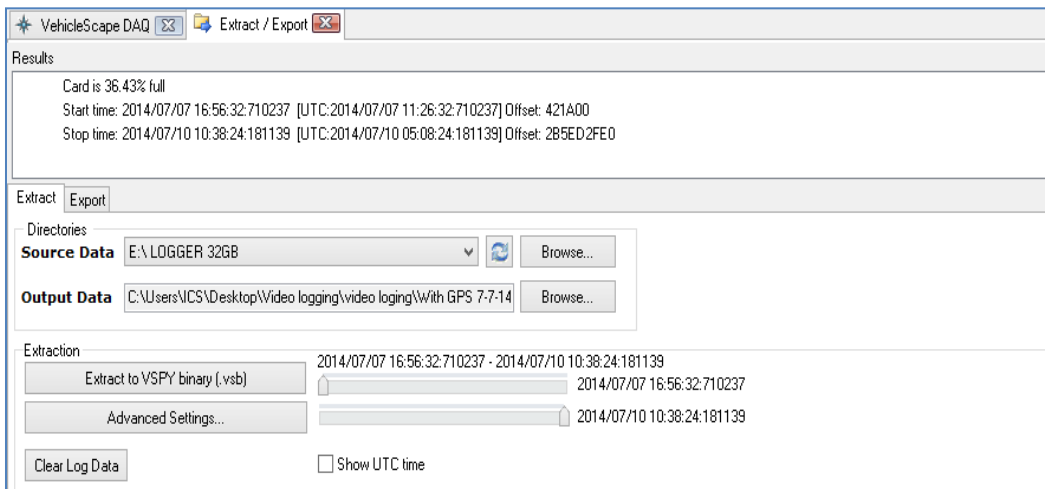


Figure 9: Extractor setting to extract the logged data from the SD Card

- Click on ‘Advanced Setting’ from Figure9 to open a dialog ‘Advance Extractor Options’ (Figure10).
 - Select ‘General’ option. You can check for combine VSB file option to combine all vsb collection.
 - Select ‘Advanced’ option (Figure10). Check ‘Generate Video from Extracted Images’ option to get video (AVI format) after extraction. Or else check only ‘Extract JPEG images’.
 - Press OK.
- Click on ‘Extract to VSPY binary (.vsb)’ option to start extraction.

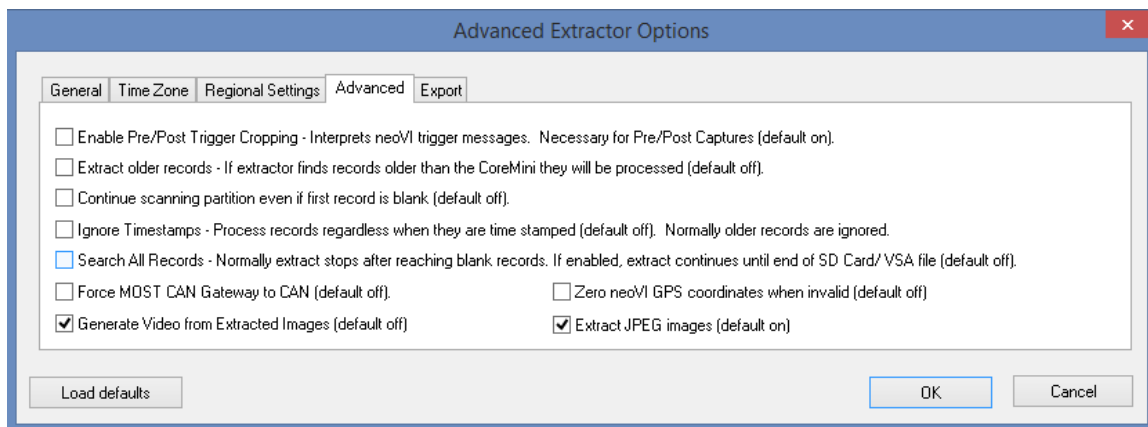


Figure 10: Advanced Extractor options to generate images or a video of the logged data

- The extracted video/ image will be stored in "video" folder in the output directory selected by the user.

2.7 Playback the logged data in VSpy for Video and GPS Track

- Go to 'Run with Simulation' and browse extracted data location. Select 'Combine Logs.vsb' file.
- Go to 'Spy Network' → [Messages](#). It will show all logged messages (Figure 11(1)).
- Go to 'Measurement' → 'Video Frames review' for video data playback (Figure 11(2)).
- Go to 'Measurement' and select 'GPS and Maps'. It will show the running status of vehicle on GPS map (Figure 11(3)).
- You can check any logged signal status from message view or plot the signals in [Signal plot](#) (Figure 11(4)).
- Above all views will be synchronized with each other.
- You can adjust the running speed by scrolling the speed bar (Figure 11(5)). For normal running keep speed at 1.00x (Figure 11(6)).
- Hence, any signal status, vehicle position on map and video for the same time can be monitored.
- Please refer the playback files from the link : [Video Logging Extracted data.zip](#)

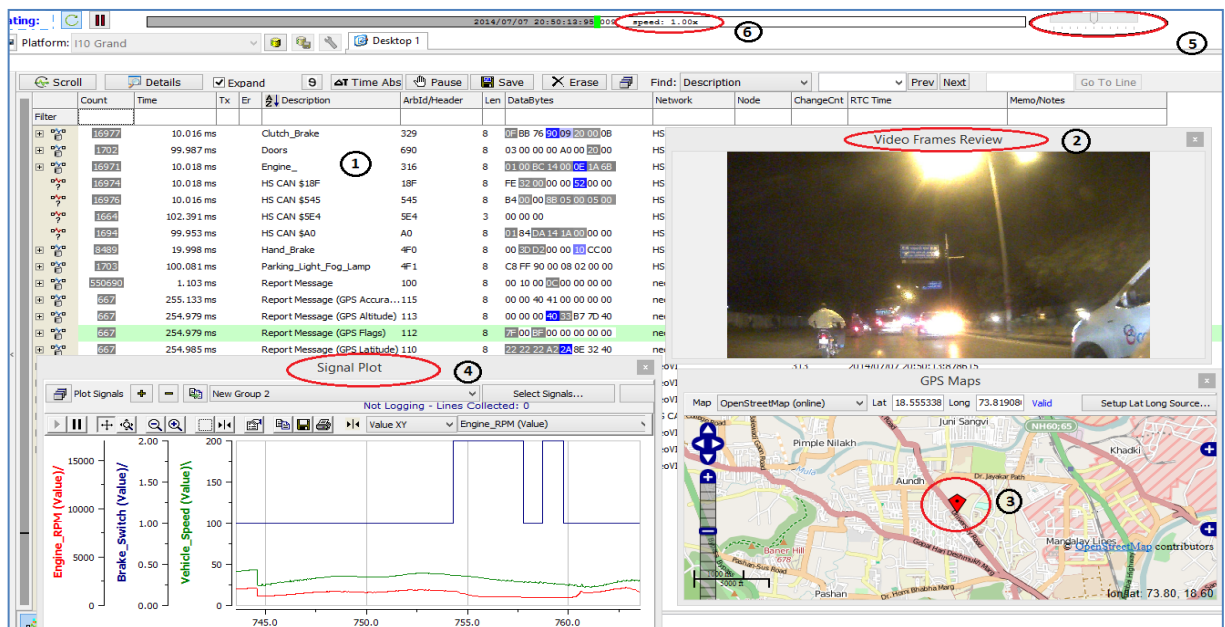
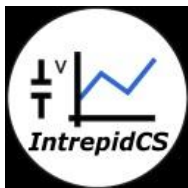


Figure 11: Playback the logged data in VSpy to view the video and the GPS tracker

3. Contact Us:



Intrepid Control Systems, Inc.

Email: icsindia@intrepidcs.com

Website: www.intrepidcs.com