



ADR Plus v6.02 Firmware

Quixote Traffic is pleased to announce the release of Version 6.02 firmware for the ADR Plus Product Line. This update for the ADR Plus firmware adds AxleLight laser sensor functionality to the ADR line. The AxleLight is a new, non-invasive laser-based vehicle sensing system that was brought to the vehicle counting and classification markets by Quixote Traffic in the Spring of 2007.

Product **Firmware for the ADR Plus Product Line**
Version..... **Version 6.02**
Release Date **May 4th, 2007**

Product Compatibility

This firmware upgrade is compatible with all **ADR-1000 Plus**, **ADR-2000 Plus**, and **ADR-3000 Plus** automatic data recorders. This firmware will not work with the older, non-“Plus” ADR-1000, ADR-2000, and ADR-3000 units. This update is not typically performed as a field upgrade. It is normally installed during manufacturing or during factory repair work. Version 6.02 of the firmware can be installed with one of the following language files installed: American, American/Spanish, or American/Canadian French.

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In order to use the AxleLight laser sensors with this firmware, the ADR Plus unit must have an SC-514P Contact Closure Board installed to function as the connection point between the ADR Plus and the laser sensor(s).

This product is compatible with **TOPS™**, Quixote Traffic’s Windows-based ADR data retrieval software. The update requires version 3.6 or higher of the TOPS software.



Note It is recommended that this firmware should not be used with any version of TOPS older than version 3.6. Additional information stored in the ADR files starting with the version 5.53 firmware may cause unpredictable results when used with older versions of TOPS.

Protocol Support

This version of the firmware supports the standard Quixote ADR protocol. It can be used with any software package that is compatible with this protocol.



Note ADR Plus devices running **Version 6.02** firmware may no longer be fully compatible with TDP.

Support for the StopWatch+ Add-on Module

Version 6.02 firmware continues to support Quixote Traffic's StopWatch+ add-on module for the ADR 3000 Plus. StopWatch+ expands the functionality of an ADR-3000 Plus; retaining the full historical data collection features of the standard ADR-3000 Plus, while adding simultaneous real-time data gathering capabilities. These StopWatch+ functions can be used to assess the performance of roadway systems during emergency and disaster situations. For more information about StopWatch+, including how to purchase the package, contact your nearest Quixote Traffic distributor. For the nearest distributor in your area, call 1-800-245-7660.

Updating the Firmware in an ADR Plus Unit

To update the firmware in an ADR Plus unit in the field via a direct connection, you will need the following items:

- Notebook or portable PC that has Quixote Traffic's **ADR Firmware Upload Utility** installed
- DB-9 to CPC-8 direct-connect serial cable (p/n 81-321) (**ADR-1000 Plus and ADR-2000 Plus**)
or
DB-9 to DB-9 direct-connect serial cable (p/n 81-296A) (**ADR-3000 Plus**)
- the ADR **Version 6.02** firmware update file:

Table 1 — Version 6.02 firmware files

Firmware version	Filename
v6.02 firmware - American English	V602-A_97-508-D.bin
v6.02 firmware - American / Spanish	V602-AS_97-508-A.bin
v6.02 firmware - American / Canadian French	V602-AC_97-508-E.bin

If you need additional assistance to perform the ADR Plus firmware update, contact the Quixote Traffic Technical Service Center using the contact information provided on page 5 of these release notes.

Enhancements

Several new features and functions have been added to the ADR in firmware Version 6.02. Most, but not all, of these enhancements are in support of the new AxleLight functionality of the ADR Plus units.

Table 2 – New features included in Version 6.02 of the ADR Plus firmware

Feature	Description
Laser menu	Added menus to support the new Quixote Traffic AxleLight Laser Sensor. The ADR can now support up to eight lanes of count, or four lanes of classification using one or two attached AxleLight laser sensors.
Laser comm settings	A Laser command on the Comms setup menu now allows the operator to configure communications to one or two AxleLight laser sensors.
Laser auto-calibration	An auto-calibration tool is now provided in the ADR firmware to allow the operator to 'dial-in' the distance measuring capability of the AxleLight laser sensor. This feature measures the distances to vehicles on the actual roadway to automatically set the distances of lane boundaries.
Laser Counting from Median	An ADR can now support counting vehicles on a divided highway when the ADR and its laser sensors have been installed in the median.
Support for new Daylight Saving Time dates	In the United States, the dates for the beginning and ending of Daylight Saving Time changed in 2007. The Version 6.02 firmware uses the updated dates as the trigger for it to modify its internal clock.
Increased available node count in a classification tree	Increased the amount of available storage for vehicle definitions by 50%. This allows users to create larger classification schemes. Previously, the maximum number of data 'nodes' that could exist in a classification tree was 512. This has been updated to 768 possible data nodes.
Alternate sensor styles for SC514 card sensors	The SC514 contact closure card can now be configured in the Setup menu to be a source of either presence or axle sensors.
New default for summation during StopWatch+ operation	When StopWatch+ summation is enabled, the default for summation totals has been changed from "By Flow" to "By Lane".
Shutdown counter	The ADR now provides a count of the number of times the ADR has entered shutdown mode during the current hour. This value is shown under the 'ShutDown LED On' sub-menu on the 'Engineering' menu. This count is reset every hour.
Setup files can now be saved when ADR is Armed	The default value of space allocated for Setup files on the CPU or on an external media, if available, has been changed to 5%. This allows users to save setup files after the ADR has already been armed without having to quit the ARMED mode in order to allocate storage for them.
Setup files no longer overwrite oldest file	Previously, if there was not sufficient room in the memory allocated for Setup files to store the requested file, the ADR would automatically delete the oldest file and use that space to store the new file. Instead, it will now report an error if there is insufficient space allocated for Setup Files. The operator can then allocate more space, or manually delete older files to free up sufficient space for the new setup.
Freeze function added to the Count Monitor screen	Pressing the number '3' while in the Count Monitor screen of the ADR Plus will freeze the current display. The screen will continue showing those values until the '3' key is pressed again.
File Frequency is locked while Armed or Recording	If the ADR is either armed or recording data, an operator can no longer change the file frequency (e.g. 24/48/72 Hr, 7 Day, Daily, Continuous) of the active setup.
Study ending time shown on the Check Setup screen	The Check Setup screen now shows the planned ending time of the current study when the ADR is armed or recording. This will be either the actual end date and time, or it will report 'Daily' or 'Continuous' for those types of studies.
Lane hysteresis	Sensitivity hysteresis settings for the AxleLight laser sensor are now available in the Sensitivity menu.

Issues Addressed in this Release

The following are known issues that existed in previous releases of the ADR Plus Firmware which have been rectified in Version 6.02:

Table 3 – Issues fixed in the Version 6.02 release

Issue	Resolution	ECR #
When a setup file was stored on the ADR, but without enough room to contain the file, no error was being reported.	The ADR will now generate a write error when there is not enough room in memory to store a setup file.	N/A
Previously, the ADR Plus would allow an operator to change the file creation frequency even while a study was running.	While a study is running, the ADR Plus will no longer allow an operator to change the file creation frequency setting. This prevents files from being corrupted half way through a study.	2217
Setting a study's File Frequency to 24Hr, 48Hr, 72Hr, or 7 DAY would cause the study to auto arm, even if the auto arm feature has been disabled.	When Auto Arm is disabled, no file frequency setting in a study will cause the study to auto arm.	2232
A Gap/Headway reading that occurred over a minute boundary of the internal clock sometimes created uncertain results.	The calculation of Gap/Headway over a minute boundary has now been corrected.	2477
Gap and Headway now make allowances for tailgating	When a pair of (or more) vehicles are determined to be 'tailgating' by the ADR firmware, the calculations for headway and gap are now set to '0' for all vehicles, except the first, determined to be tailgating.	N/A

Additional Guidance

These are some other sources of information on the ADR Plus series of automatic data recorders.

Documentation

These documents are available for the ADR Plus products and other related products available from Quixote Traffic.

Table 4 — Additional documentation available for ADR Plus products and related hardware

Document	Part Number
ADR Plus User's Manual	99-133
StopWatch+ Release Notes	99-348
TOPS Installation Manual*	81-896
TOPS Operating Manual*	81-897
TOPS v3.6 Release Notes*	99-291
ADR-1000/ADR-2000 Getting Started Guide	119c/507

Technical Support

In order to receive customer support on your ADR unit, you must register it with Quixote Traffic. This contact information will connect you with the ADR technical support staff of Quixote Traffic Corporation, should you require additional help concerning this firmware update.

Quixote Traffic Corporation - ADR Technical Support

2511 Corporate Way
 Palmetto, FL 34221
 toll free in the U.S.: 1.800.245.7660
 tel: 1.941.845.1200
 fax: 1.941.845.1504
 email: tech.support@quixotecorp.com

* The TOPS Installation CD also includes copies of these documents in PDF format.