



Rahm Emanuel
Mayor

Department of Police • City of Chicago
3510 S. Michigan Avenue • Chicago, Illinois 60653

Garry F. McCarthy
Superintendent of Police

Date: August 15, 2012

ACLU

Attn: Karen Sheley
180 N. Michigan Ave., Suite 2300
Chicago, IL 60601

RE: NOTICE OF RESPONSE TO FOIA REQUEST
REQUEST DATE: July 31, 2012
FOIA FILE NO.: 12-2597

Dear Ms. Sheley:

The Chicago Police Department is in receipt of your multi-part Freedom of Information Act (FOIA) request in which you "seek information about Automatic License Plate Reader ("ALPR") technology." Your request is overly broad and is more akin to a discovery request than a FOIA request for specific documents. Your request is, by its nature, overly broad. Despite the breadth of your request, the Department has made its best effort to interpret the focus of your request and provide you with responsive records. If you believe that we have too narrowly interpreted your request, or you seek documents in addition to what has been provided, please specifically identify what other documents you would like produced.

Your request was reviewed by the undersigned, the Research & Development Division, the Education & Training Division, the Fleet Management Division, and the Public Safety Information Technology Division. It has been determined that your request is granted in part and denied in part.

The information contained within this letter and within the provided documents and DVD shall serve as the Department's response. First, it is important to convey information related to the operation of the ALPR's, including the type of data collected by the ALPR's. ALPR data is comprehensive; meaning that when the system is turned on, it is always scanning plates. When a plate is scanned, the date and time, GPS coordinates, plate number, identification of the ALPR system that scanned the plate, a color image and infrared image of the plate are collected. This data is retained for as long as possible, however the data related to a plate that registers as a "hit" is permanently retained. "Hits" are based on information received from the NCIC federal stolen plate list, the Illinois State Police hotlist, the Secretary of State wanted persons registration list, and the Chicago Police Department hotlist. The data related to "non-hits" is destroyed once the 40 GB storage limit has been reached.

Next, the data retention/deletion process is as follows: color images are deleted first, usually after about two weeks; next infrared images are deleted, usually after about four weeks; finally metadata is deleted, usually after about seven weeks. Due to the fact that "hits" are retained permanently, the amount of storage available for "non-hits" is constantly shrinking, thus making the retention times of "non-hit" data shorter and shorter. The data that is retained is stored in the CLEAR data warehouse. This data has not been disseminated to any outside agencies. The data is viewable by all sworn personnel; however there are no audit trails of document access.

The enclosed records, which include a list of Department vehicles equipped with ALPR's, two procedure manuals, a user guide, two Motorola brochures, and a DVD are also responsive to your request. Furthermore, the below web address links to the Motorola contract that covers ALPR's. The contract is well over 100 pages.

<http://webapps.cityofchicago.org/VCSearchWeb/org/cityofchicago/vcsearch/controller/contracts/display.do?contractNumber=8873>

Emergency and TTY: 9-1-1 • Non Emergency and TTY: (within city limits) 3-1-1 • Non Emergency and TTY: (outside city limits) (312) 746-6000

E-mail: police@cityofchicago.org • Website: www.cityofchicago.org/police

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Finally, in gathering the records responsive to your request, it was determined that one document, a software manual, is exempt from disclosure. The aforementioned software manual contains confidential and proprietary information. Accordingly, it is exempt from disclosure under the following exemption found in the Illinois Freedom of Information Act:

5 ILCS 140/7 (1)(o) Administrative or technical information associated with automated data processing operations, including but not limited to software, operating protocols, computer program abstracts, file layouts, source listings, object modules, load modules, user guides, documentation pertaining to all logical and physical design of computerized systems, employee manuals, and any other information, that, if disclosed, would jeopardize the security of the system or its data or the security of materials exempt under this Section.

If I can be of further assistance, please contact me at (312) 745-5308 or the following address:

Chicago Police Department
Attention: Freedom of Information Officer
Records Inquiry Section, Unit 163
3510 S. Michigan Ave., Room 1027
Chicago, IL 60653

Sincerely,


P.O. Rory P. O'Brien #7818
Freedom of Information Officer
Department of Police
Record Services Division

To the extent that you consider this a denial, you have a right of review by the Illinois Attorney General's Public Access Counselor (PAC). You can file a request for review by writing to:

Public Access Counselor
Office of the Attorney General
500 S. 2nd Street
Springfield, Illinois 62706
Phone: 312-814-5526 or 1-877-299-FOIA (1-877-299-3642)
Fax: 217-782-1396 E-mail: publicaccess@atg.state.il.us

If you choose to file a Request for Review with the PAC, you must do so within 60 calendar days of the date of this denial letter. 5ILCS 140/9.5(a). When filing a Request for Review, you must include a copy of the original FOIA request and this denial letter. You may also seek judicial review of a denial under 5 ILCS 140/11.

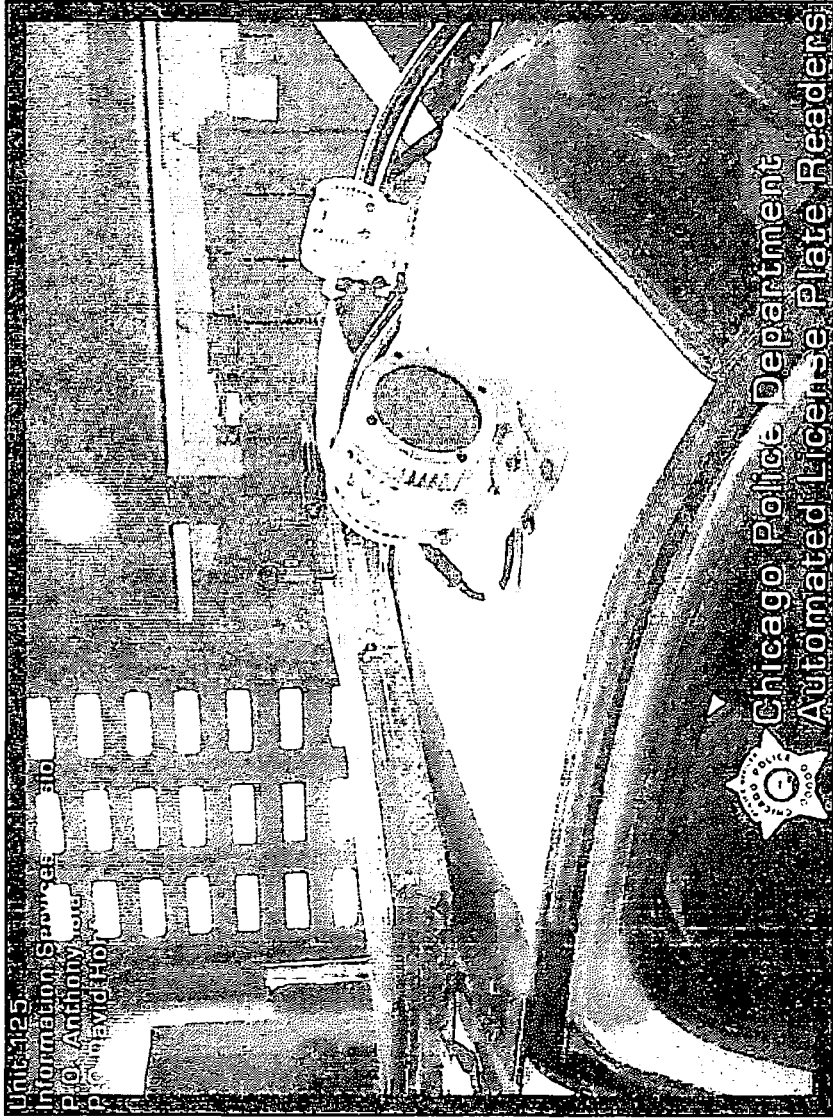
Assigned License Plate Readers (ALPR)

Unit/District of Assignment	Vehicle#	
001	8058	
002	8213	
002	8706	
003	7171	
004	7625	
005	8111	
006	8690	
007	8126	
008	8179	
008	8080	
009	7304	
010	8634	
010	8580	
011	8216	
011	8699	
012	7711	
013	8220	
014	7959	
015	7876	
015	7834	
016	8586	
017	8055	
018	7326	
019	8742	
020	8717	
022	7831	
024	7236	
025	7720	
Violence Reduction/Unit 140 (887)	8190	
Violence Reduction/Unit 140 (887)	7855	
Violence Reduction/Unit 140 (003)	8014	
Violence Reduction/Unit 140 (019)	8069	
Unit 212	7698	
Unit 212	7871	

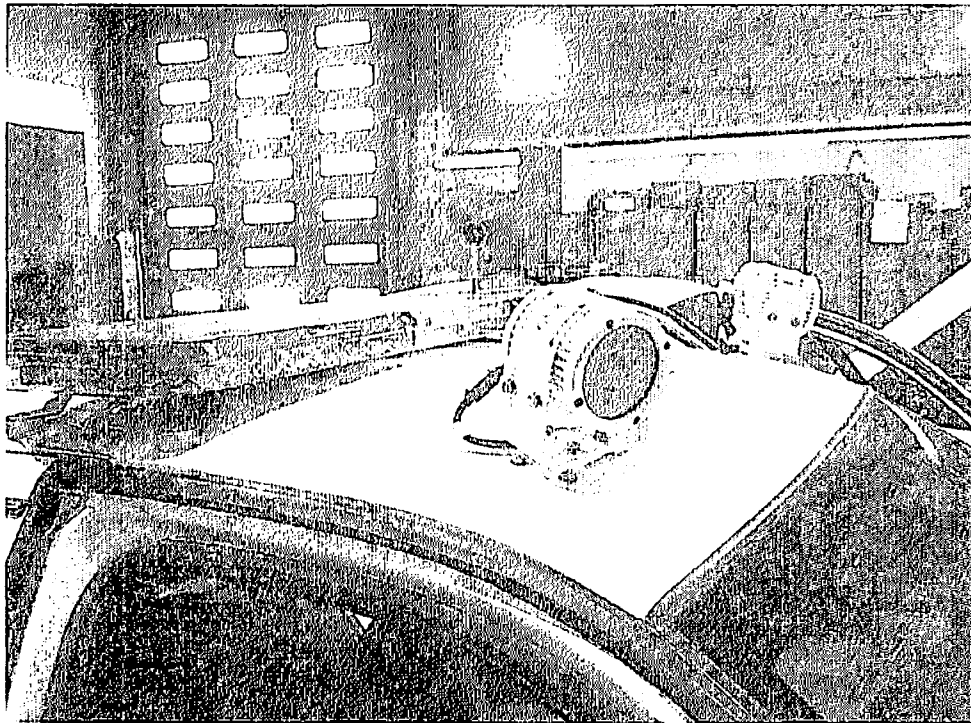
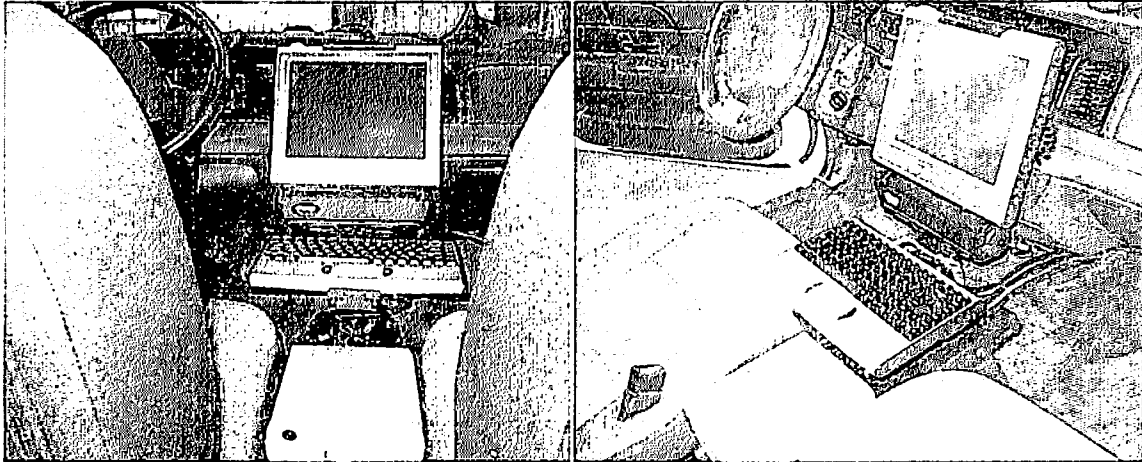
8/8/2012

Created by PO K. Frierson

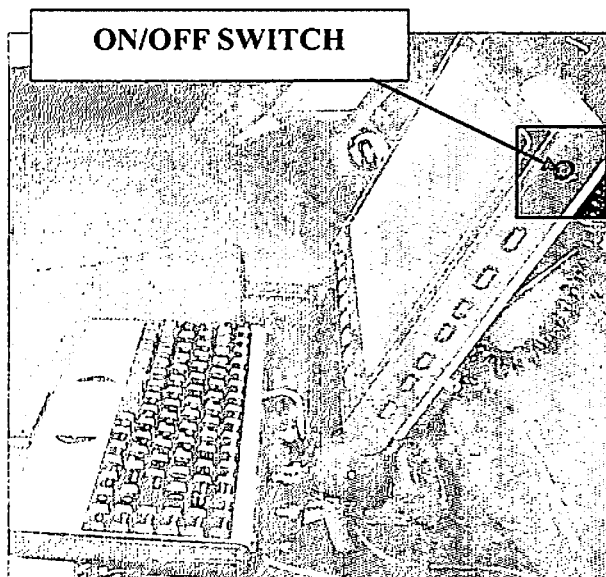
MOTOROLA / PAGIS Automated License Plate Reader User Guide



The Crown Victoria's outfitted with the Motorola / PAGIS ALPR system differ from the standard CPD vehicle. These cars utilize a different in car computer called the MW800. Through this computer officers will be able to utilize not only ALPR functionality but PCAD and I-CLEAR as well.

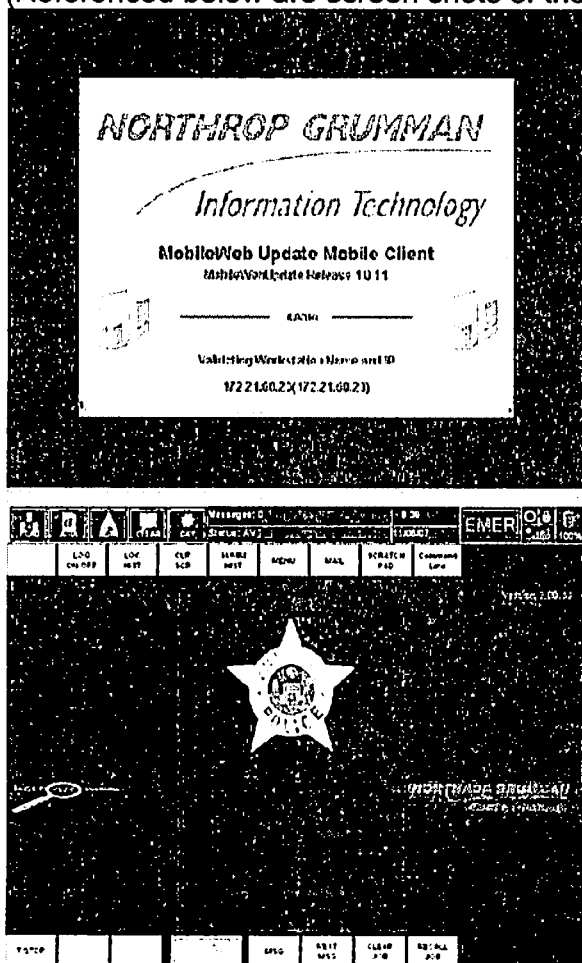


When starting your tour of duty you must first turn on the MW800. The ON / OFF switch is located on the upper right-hand side of the monitor. Pressing this top button will turn the computer ON / OFF. (Press and hold down this button for a minimum 2-3 Seconds. In order to turn the computer on the vehicle must be turned on as well.)

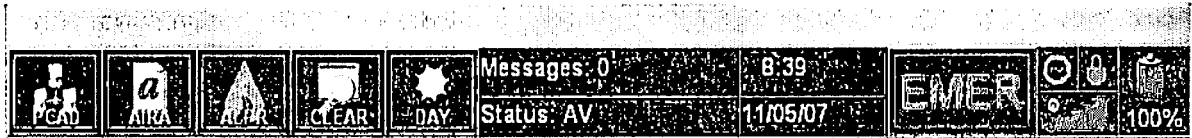


Once you have turned the MW800 on it will take about 3 – 5 Minutes for the ALPR and the Mobile Web Toolbar to fully boot up and load to where you are ready to use the functions of the PCAD Toolbar and ALPR PAGIS Software.

(Referenced below are screen shots of the Computer first turning on.)



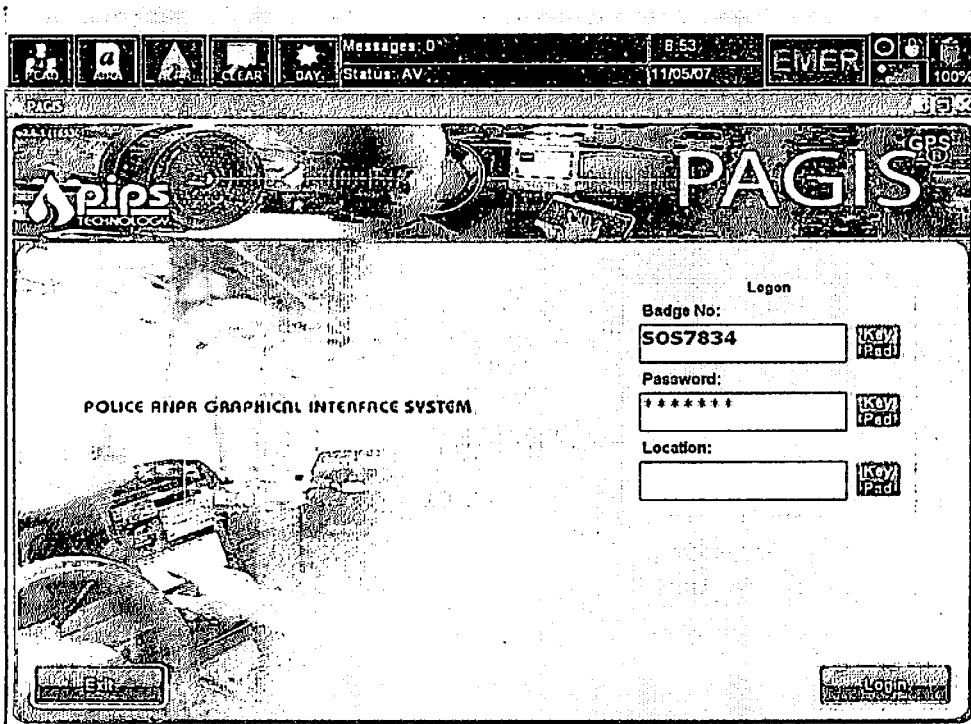
Mobile Web Toolbar



PCAD	Takes user to the PCAD Screens.
AIRA	Disabled in ALPR Vehicles.
ALPR	Switches to the PAGIS ALPR Live Screen / Starts PAGIS.
CLEAR	Switches to I-Clear Homepage.
NIGHT / DAY	Toggles PCAD Toolbar / Screen - night and day modes.
EMER	Emergency Button

Starting ALPR Software

To start up the ALPR software simply click on the button on the Mobile Web Toolbar labeled ALPR using the mouse or touch screen. The PAGIS ALPR software will initially show a login screen. There is no need to enter any data here. The system will automatically log the officer into The PAGIS software.



Key note: Before starting the PAGIS ALPR Software be sure the Mobile Web Toolbar and PCAD have fully loaded. Check this first by logging into PCAD.

Understanding the PAGIS ALPR Live Screen

The screenshot shows a mobile web browser interface for the PAGIS ALPR system. At the top, there is a status bar with 'Messages: 0', '8:47', '11/05/07', and '100%' zoom. Below this is a 'Live Camera Image' header. The main area is split into two panels: 'Left' and 'Right'. The 'Left' panel shows a car with license plate 'M116770'. The 'Right' panel shows a car with license plate '211 9041'. Below the images are two sets of controls, each with 'Go!', 'IR', and 'Take Pic' buttons. Below these are buttons for 'Search Entry', 'Review', 'Begin Shift', 'End Shift', 'Cam Mode Police', 'Admin', and 'Log Out'. Three callout boxes provide instructions: one for the top image (captured image), one for the lower image (ALPR interpretation), and one for the 'Search Entry' button (manual license plate check). Another callout box explains the 'Begin Shift' and 'End Shift' buttons (used for shift tracking).

Live Camera Image

Left Right

The top image displays a captured image from the camera of the cars license plate.

The lower image is what the ALPR software interprets as the plate number.

Go! IR Take Pic M116770 Go! IR Take Pic 211 9041

Search Entry Review Begin Shift End Shift Cam Mode Police Admin Log Out

If officers want to manually enter a license plate to check its status you would click this button. It will take you to another screen.

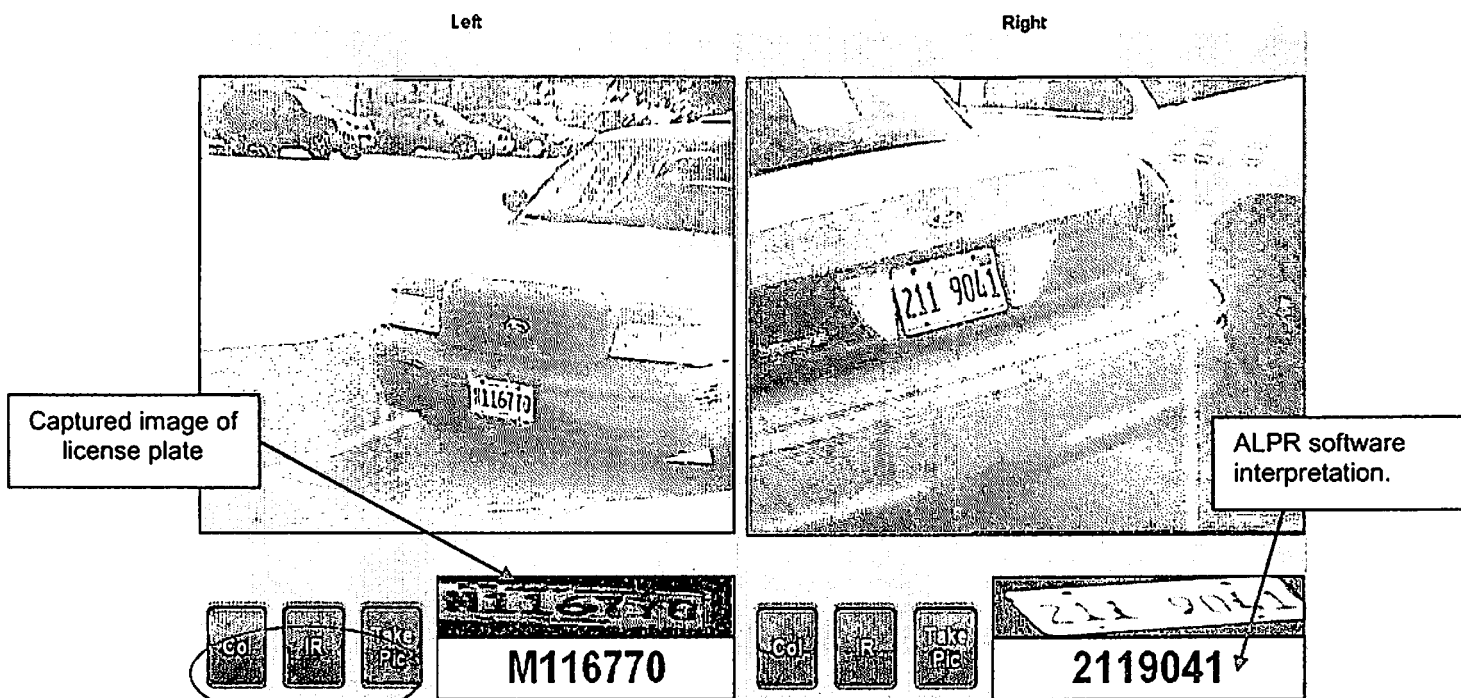
This button will allow you to view a page that shows the running total of plate-reads, hits, Misreads, Audits, and Database fields..

"Begin Shift" and "End Shift" These two buttons must be pressed at the start and end of every tour of duty.

When in operation the "Live Screen" will automatically change each time a plate is captured. This area will display a color image of the vehicle whose plate was captured.

With each capture and "Live Screen" change, the plate read will also change.

- The top plate image is and actual close-up of the license plate.
- The lower image is what the ALPR software has interpreted the license plate image to be.



Col: This will show you a live video feed from the ALPR cameras.

IR: This will display the infrared camera feed

Take Pic: This will take a "snapshot" of what is currently being shown in the preview window.

ALPR "Hits"

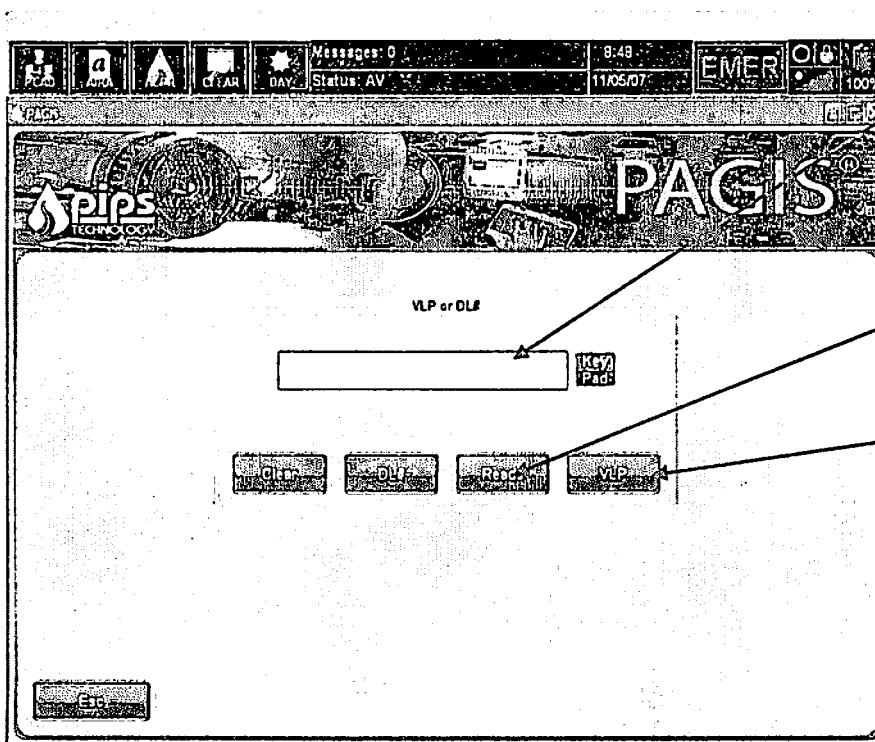
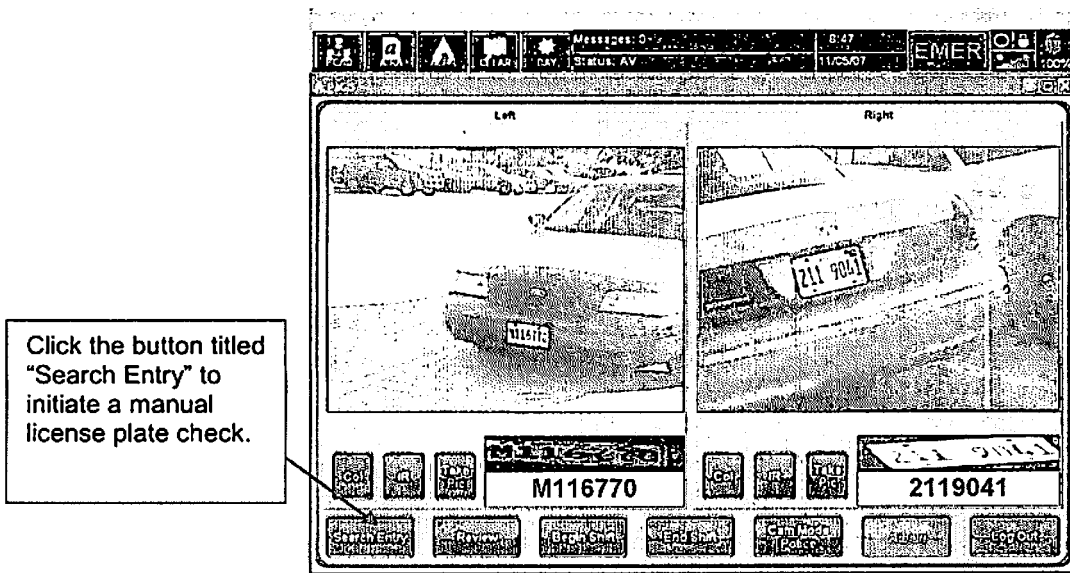
If the ALPR software receives a "Hit" this is the screen that will show. The "Hit" screen will display on top regardless if you are in PCAD, I-Clear or other applications. An audio alert will also be triggered to notify the officer(s).

The screenshot shows the ALPR 'Hit' screen with the following data and callouts:

- Top Bar:** Includes 'PCAD', '8:45', '11/05/07', 'EMER', and '100%'.
- Left Panel:** Shows 'Left' camera view, coordinates '41.85271, -87.6661633333333', date '11/3/2007 8:37:55 PM', and a 'Miss Read' button.
- Center:** Displays a 'Captured image of license plate' showing '6946562' and 'ALPR software interpretation' showing '6946562'.
- Right Panel:** Shows 'Hit' details: 'GEO: Hoffman', '6946562', 'IL', '2004', 'GRYIGRY', 'DODGE4 DOOR', and 'WANTED'. A callout box explains these fields will populate with specific demographics.
- Bottom:** Includes a 'Comments' box for a short narrative, 'ESC' button, 'Prev', '4/4', 'Next', and 'Save' buttons. A callout box explains the 'ESC' button returns to the Live Screen.

Manually Searching a License Plate

On the Live Screen page of the ALPR software you can manually enter a license plate # to search if it is a "Hit" or to check to see if you have captured the plate #.



1. Enter a License Plate Number or a Drivers License Number in the text field.

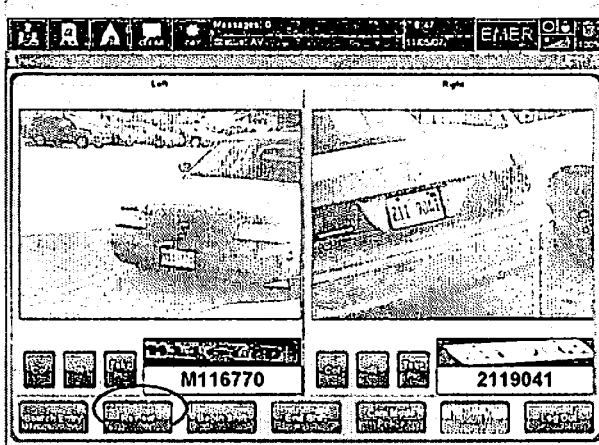
2. After you have entered a Plate Number you can do one of the following.

- Hit the "READS" button to see if during your tour you have previously scanned that plate
- Hit the "VLP" button to search if the plate in question is a "Hit" on one of the database.

3. You will either get a message "NO PLATE FOUND" or the plate will be a "Hit". In this case you will be taken to "Hit Screen" shown on the previous page.

Review

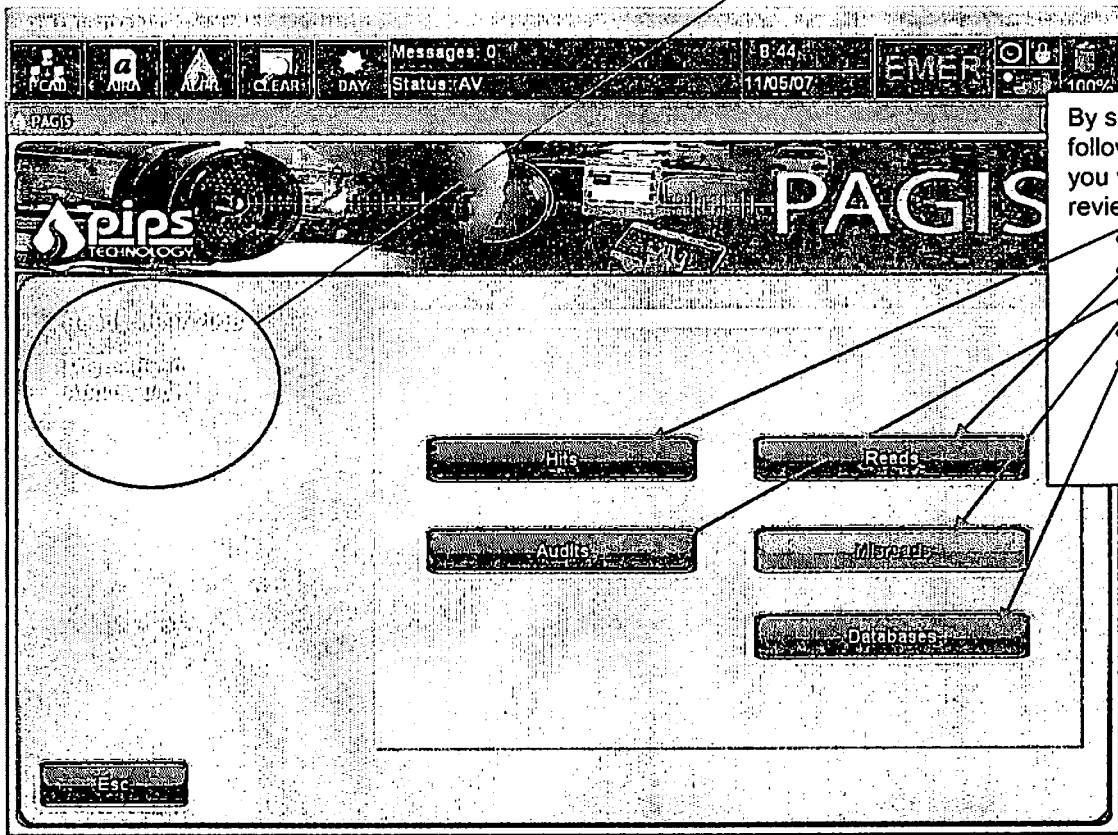
The Review button located on the Live screen allows you to keep track or look back at license plates captured, Hits, Misreads, Audits, and Databases.



This area of the window indicates the following information

- Reads
- Hits
- Misreads
- Audits

Under this information the larger of the two numbers for Reads and Audits is the actual number.



By selecting the following buttons you will be able to review the following

- Hits
- Reads
- Audits
- Misreads
- Databases

Databases

Under the database button from the previous page you can actually view the files downloaded on to the computer wirelessly to identify that the ALPR is currently updating the HOTLIST and NCIC files properly.

The screenshot shows the PAGIS interface with a table titled "2 Databases". The table contains the following data:

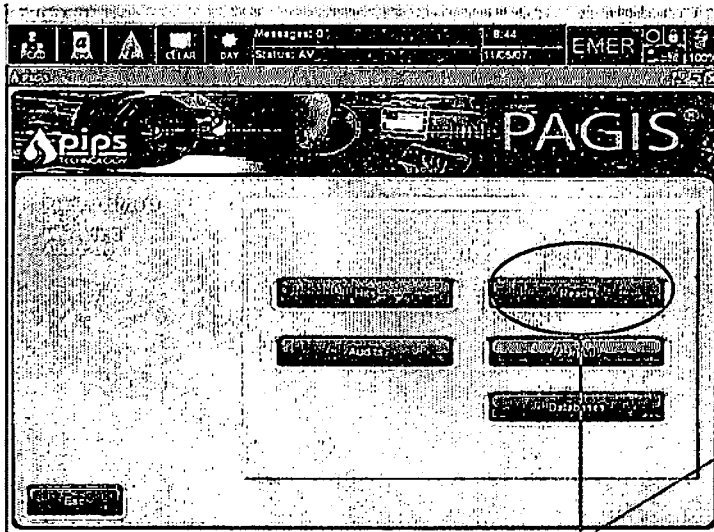
Database Name	Last Updated	Value
GPS Hotlist	11/5/2007 8:41:11 AM	100
NCIC	11/5/2007 8:41:11 AM	150

Buttons at the bottom of the interface include "Esc", "Sync", and "Search".

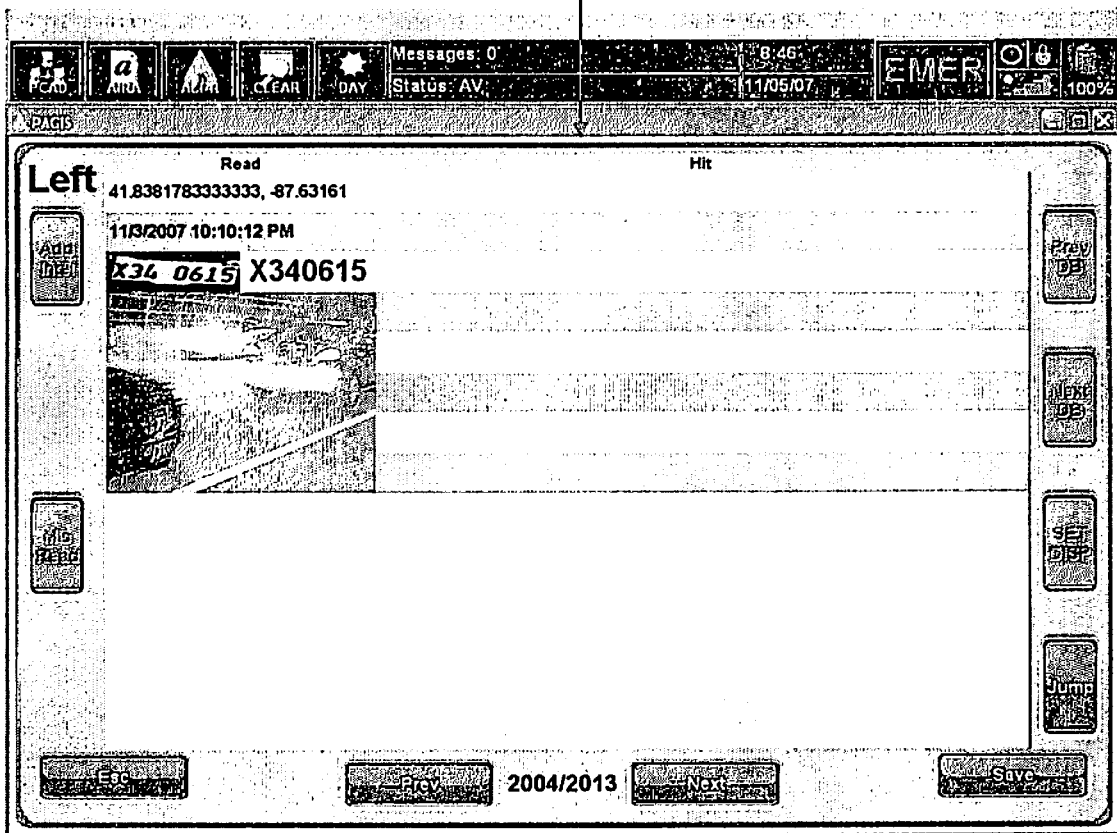
Shown here are the two databases HOTLIST and NCIC. Also shown is the date and time when the databases were last updated

- Important information to note on this page is whether or not the two databases are currently updated. If for some reason they are not updated meaning the date field is a few days old escape out to the "Live screen" and perform an "End Shift" followed by "Begin Shift".
- The "End Shift" and "Begin Shift" buttons are programmed to download as well as send off information regarding the statistics of the plate reader you are working in as well as download the most current updated HOTLIST and NCIC Files. Also performed with these two functions is the reset of plate reads so that you can keep track of the correct number of reads, misreads, and hits during your tour of duty.

Reads



Under the review button you can select the follow Reads button to look back at previously captured plate images as well as vehicle images. You can also look back at Misreads and Hits in regards to The Review Button and It will display the same window in regards to Hits and Misreads.





The Motorola MW810

Rugged fixed-mount computer. Optimized for wireless. Optimized for mobility.

In the harsh environments of mission-critical vehicles, access to vital information when and where you need it most is crucial.

The Motorola MW810 rugged fixed-mount computer provides reliable, mobile wireless connectivity and computing power for mission-critical applications.

The high-performance computing platform is optimized to deliver seamless mobility at highway speeds. Motorola's three-piece design allows flexible installation options, including choice and location of CPU, display, and backlit keyboards.

Fully-Rugged.

Durable and reliable so you have access to vital information even in harsh conditions. Operate with confidence in mobile environments and under stressful conditions.

Fixed-Mount System for Vehicles.

Provides mobile connectivity and computing power for vehicle users. Internal GPS and Dead Reckoning GPS module options work with your applications to provide accurate vehicle location so you can manage your fleet and deploy resources more effectively.

Versatile Three-Piece Design.

Allows for flexibility and ease of installation in space-limited vehicles. Individual components can be purchased separately.

High Performance Display.

Transflective, high contrast display performs extremely well even in difficult lighting conditions. Display design enables shortcuts to the most important user functions.

Optimized for Wireless.

Expanded wireless networking capabilities, including new internal cellular modem options, for better access to information

The most advanced mobile data computer on the road

The Motorola MW810 offers a range of integrated radios and GPS options so the vehicle user can stay connected via one or more wireless networks. Optional expansion boards provide a wide range of I/O ports to support external radios, dual displays, and peripheral devices. The backlit keyboard and display options offer outstanding performance even in the most difficult lighting conditions.

- Fully-Rugged
- Fixed-Mount System for Vehicles
- Versatile Three-Piece Design
- Intel® Core™2 Duo Processor Options
- Expanded I/O Capabilities
- Supports Multiple Internal Radios
- Dual Display Option
- High Brightness, High-Contrast Display Option



NEW: Intel® Core™2 Duo Processor Options

More power for multi-tasking. "Intel Core 2 Duo processors have two processing cores – or computing "brains" – that can handle multiple tasks in less time while consuming less power." *Intel Corporation, Press Release, August 28, 2006*

Expanded I/O Capabilities

Choice of I/O configurations allows you to outfit all vehicle types with the same CPU platform – simplifies equipment maintenance and life cycle management.

Supports Multiple Internal Radios

Use multiple wireless modems and your choice of Mobile VPN software for secure, seamless multi-network roaming so you are never out of touch.

Exceptional Display Technology.

MW810 displays feature a resistive, tempered glass touchscreen interface. Our high brightness display option features 1200 NIT brightness with 1:400 contrast ratio and outstanding viewing angles, so both driver and passenger can easily view on-screen information.

Over 75 Years of Understanding the Needs of Government Agencies.

Over 75 Years of Wireless Communications

Like all Motorola products, the MW810 is built to our stringent standards for quality and reliability. We pioneered the design and development of quality wireless communications systems, and we're leading the way again with solutions for today... and the future. Whatever your requirements, Motorola has the resources and expertise to provide the networks, the software and the devices to meet your changing needs.

Touch of a Button Sends a Message

Eight softkey buttons, backlit for visibility and situated across the bottom of the display, can be assigned to different functions under mobile application software control. A one-touch emergency key located on the top of the display can be easily reached to send a distress signal – eliminating the need for keyboard or radio use in a crisis situation.

Easily Modify Display Settings

On Screen Display software and a multi-function knob allow users to easily control basic settings such as volume, brightness, and contrast.



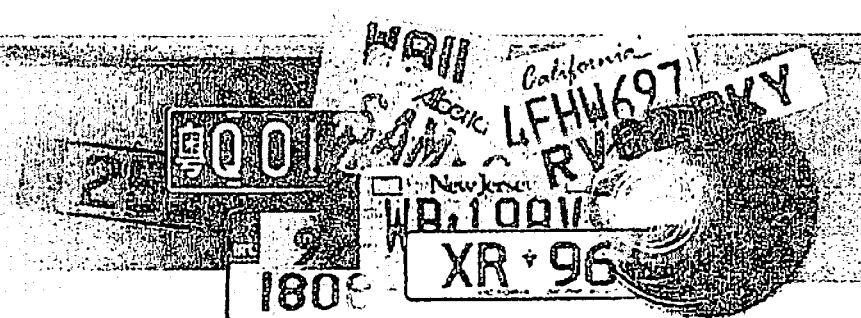
MOTOROLA

Motorola, Inc. 1301 E. Algonquin Road, Schaumburg, Illinois 60196 U.S.A. www.motorola.com/datasolutions
MOTOROLA and the stylized M Logo are registered in the U.S. Patent and Trademark Office. All other products or service names are the property of their registered owners. © Motorola, Inc. 2007

RC-14-2033

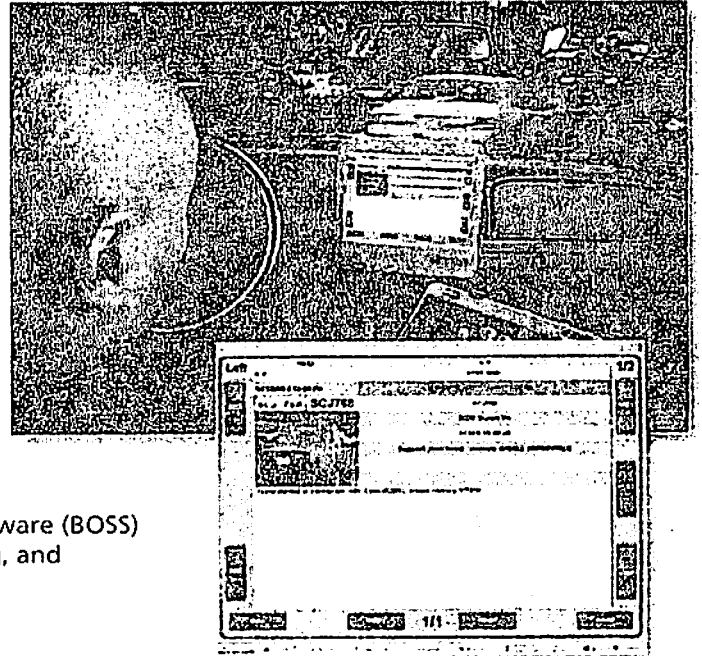


A Federal Signal Company



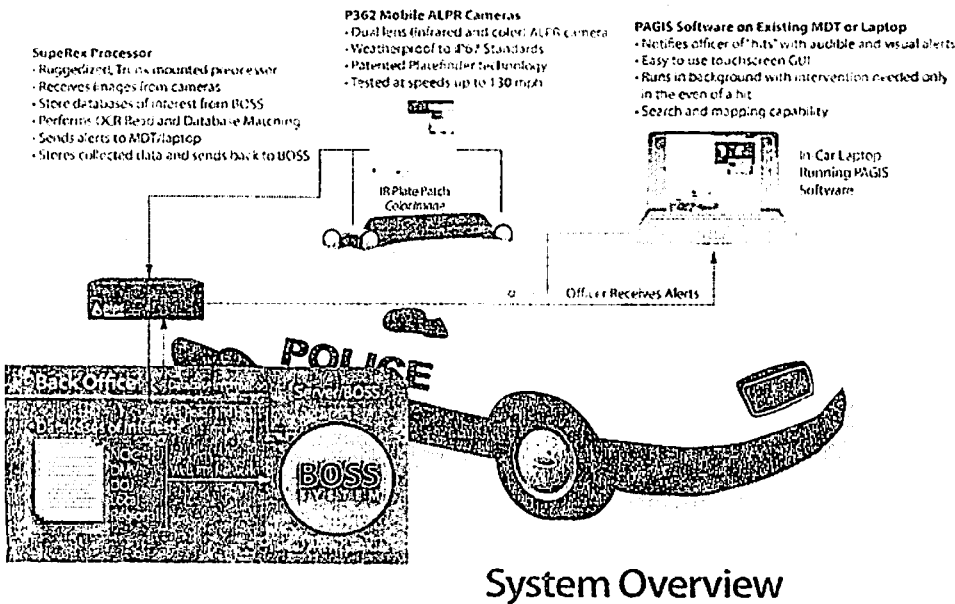
PAGIS® Police ALPR Graphical Interface System

- ||| PAGIS packages PIPS' industry leading ALPR technology and superior performance into a complete mobile law enforcement solution
- ||| High volume, accurate, license plate capture at speeds of up to 160 mph
- ||| Instant plate check against any number of specified databases, (NCIC Stolen, Felony Warrants, Amber Alerts, local hot lists, etc) with immediate alerts to the officer of any "hits"
- ||| Seamless operation with PIPS' Back Office System Software (BOSS) for data management, querying and mining, mapping, and networking with other agencies.



PIPS is the only ALPR provider in North or South America to design, manufacture, and support a complete range of ALPR equipment, software, and services – the result is a unique engineered solution designed to provide superior performance even in the harsh environments of a patrol application.

Field Application



The PAGIS system consists of up to four PIPS P362 dual-channel (color and infrared) cameras connected to a PIPS SuperRex trunk-mounted processor, and the PAGIS in-car officer software interface.

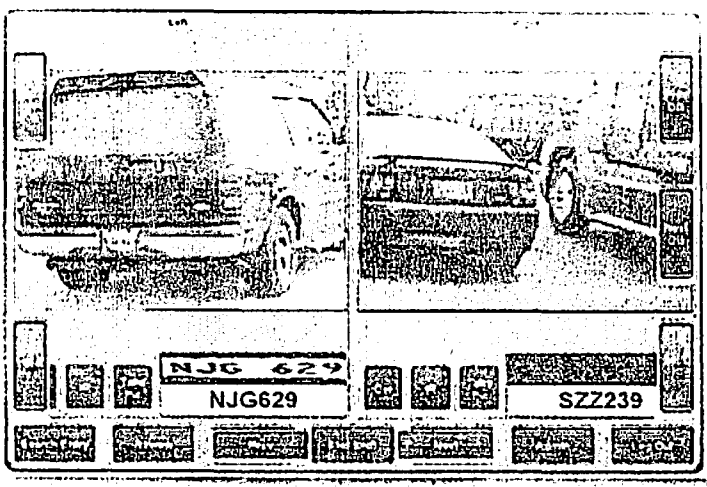
Patented PIPS Platefinder and Triple Flash technologies, along with proprietary PIPS advanced OCR engines tailored to the state or region of interest, complete the package. PAGIS is the only solution to offer seamless integration with PIPS Back Office System Software (BOSS).

System Overview

PIPS Technology

Features of PAGIS® include:

- Simultaneous monitoring of up to four dual-lens cameras
- Vehicle record contains infrared image of plate with corresponding OCR translation, color image of vehicle, date and time stamp, GPS coordinate, and relevant information from the database (in the event of a hit)
- User configurable audio and visual alarms
- Integration with existing MDT / laptop, or touch screen monitor with on screen keyboard



User Interface: Plate Capture

Primary Benefits:

Officer Efficiency – exponential productivity improvement as the system can capture up to 3,600 plates per hour

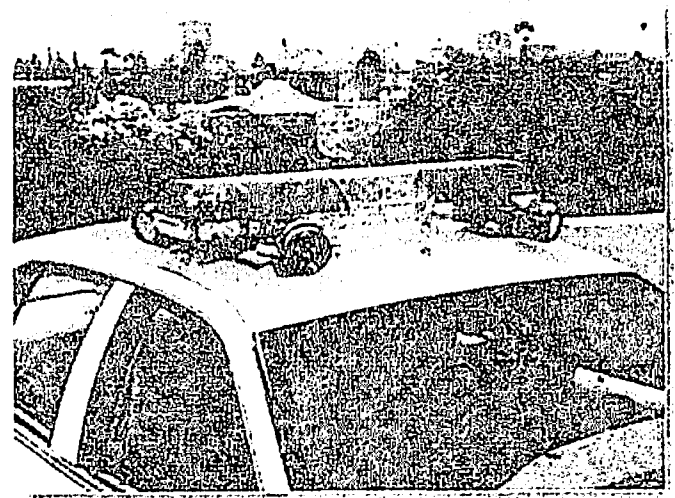
Officer Safety – providing officers with better awareness of their surroundings and of vehicles they are approaching

Intelligence – through BOSS the intelligence possibilities are expanded as multiple patrol deployments, fixed site cameras, and other agencies are networked

Elimination of Profiling Claims – the system looks at every vehicle regardless of the condition or the driver

Improved Enforcement – better enforcement results due to identification of more suspect vehicles

- Support of wireless data transfer to/from BOSS for more frequently updated hotlists, and to offload captured data for immediate intelligence usage
- Ability to prioritize databases such that simultaneous hits are displayed by order of priority
- Data encryption to eliminate possibility of evidence tampering
- Ability to manually enter data allows for immediate use of new intelligence



P362 Camera Installation

Sample results (actual customers):

- 2 agencies combined stolen vehicle recoveries of 901 vehicles for a total of almost \$7.8 million
- Drug Trafficking and Identity Theft arrests made due to surveillance on suspect vehicles
- Suspect of robbery at a popular national coffee chain apprehended
- Suspects in triple homicide identified prior to officer making routine traffic stop, prompting backup call

For additional information about this and our complete range of ALPR products and traffic technology solutions, call or visit us on-line.



PIPS Technology Inc.
World Headquarters
804 Innovation Drive
Knoxville TN 37932 USA
Tel +1 865 392 5540
Fax +1 865 392 5599
info@pipstechnology.com

PIPS Technology Inc.
West Coast Office (USA)
Trillium Towers Center
6320 Canoga Avenue, Ste 1500
Woodland Hills CA 91367 USA
Tel +1 818 615 2018

PIPS Technology Ltd.
European Office (UK)
York House School Lane
Chandlers Ford, Eastleigh
Hampshire SO53 4DG UK
Tel +44 (0) 2380 240 250
Fax: +44 (0) 2380 240 251
info@pipstechnology.co.uk

Choosing A Vehicle Computing Platform

Fixed-mount workstations may be a better solution

Mobile data communications are becoming increasingly important in empowering police officers, fire fighters and other first responders to perform their vital work more efficiently, productively and safely. For the past few years, the assumed solution for in-vehicle mobile computing and communications has been a removable, ruggedized laptop computer. Even as first responders continue to work with their laptops, however, municipalities and other government agencies are carefully examining the advantages of augmenting, or even replacing, laptops with advanced fixed-mount workstations, often in combination with ruggedized mobile handheld computers

It's no surprise that laptop computers have become the de facto mobile computing standard for public safety and other governmental professionals. At first glance, laptops seem like an ideal solution for most mobile computing needs. They are powerful computers that allow users to use the same computer and software for office and field work. They allow users to have all their crucial information with them at all times. Laptops can run on their own battery power. They are removable and portable, allowing firefighters or police officers to un-dock their computers and use them outside their vehicles.

Laptops in the Real World

When you look at what actually goes on in practice, however, a different story sometimes emerges. The reality is, for all their vaunted portability, many organizations find that mounted laptops rarely leave the vehicle. There can be a number of explanations for this seeming anomaly. The most obvious is that in many cases, the laptop doesn't need to be removed from the vehicle—many police officers, for example, view their cruiser as their mobile office and prefer to write reports, etc. while in the vehicle. Un-docking the laptop and taking it out of the car only serves to reduce their readiness in an emergency—they have to remember to grab the laptop and mount it in the vehicle before taking off.

Tasks that require computing outside the vehicle aren't always well suited to laptops, either. Checking a driver's license, fingerprinting a suspect, conducting a fire inspection, monitoring a victim's vitals—many first responder tasks are hampered by the size, weight, setup time, and two-handed operation of a laptop. The laptop, therefore, remains in the vehicle.

Yet even in the vehicle, a laptop is hardly ideal. Mounted in front of the center console, it requires the operator's body to turn 30-45° in order to type, while the legs continue to point forward. This is an unnatural, uncomfortable position, which can lead to back pain and injury if maintained for long periods of time, as would be necessary to type out a report. Laptops also need to be mounted outside the car's airbag zones, which requires them to sit low and far forward. This means the operator can't keep the vehicle's window in his peripheral vision while looking at the screen—a significant safety issue during a traffic stop.

As the portability benefits of laptops begin to be examined more closely, some of laptops' other limitations are being exposed, such as the numerous design and functionality compromises that must be made for the sake of portability. These limitations are major reasons why a growing number of public safety and other government users are taking a new look at computers specifically designed for their environment, whether powerful fixed-mount workstations or handhelds.

*"In practice, we found that **officers who had laptops and tablets never took them out of the vehicle.** Added to that is the complexity of docking stations, docking ports, and resulting service problems, and we chose to go with a fixed-mount unit... It was a unanimous vote of our governing body, made up of Police Chiefs and Representatives from [over 200] member agencies."*

—**Tim McRae, Technical Operations Supervisor**
Courts and Law Enforcement Management Information System (CLEMIS)
Oakland County, Michigan

The Fixed-Mount Alternative

Permanently mounted into public safety vehicles, usually in the passenger compartment or trunk, these computers are designed to outperform laptops in important functionalities. They usually have more expansion options and can operate in hotter and colder environments. They offer a greater array of connectivity options. And with removable keyboards and enhanced screen design, they're easier to use. But what about portability?

Although fixed-mount computers cannot be un-docked and carried around like laptops, many departments are beginning to look at portability a little differently. Many are looking at it as a system rather than as a "one computer does all" solution. Given some of the limitations of laptops, many municipalities and agencies are considering deploying a system that features a fixed-mount workstation that outperforms laptops in power and functionality, combined with today's powerful handheld devices and computers that can outperform laptops in functionality, portability and ease of use.

Laptops or Fixed-Mount Workstations?

When public safety and other government agencies or departments compare laptops with fixed-mount workstations, they consider a number of specific features that are important to first responders and other computer users who work in field. Some of the most important points of comparison include:

- **Design.** Anyone who has ever used a laptop understands the design compromises necessary to achieve portability. Keyboards are generally smaller and harder to use than the full size keyboards of fixed-mount workstations. Laptop keyboards are also not removable—unlike those of fixed-mount workstations, which can actually be put in the user's lap, reducing the need to sit awkwardly facing the computer.

Laptop manufacturers overcome these limitations by offering a design with an add-on display and keyboard, which allow the laptop itself to be mounted in the trunk. This works, but at the cost of having to buy two keyboards and two displays for every vehicle—a significant expense—and does nothing to address performance, heat, and other issues.



The fixed-mount workstation's removable keyboard provides a more comfortable typing position.

- **Performance.** Laptops have to balance performance with portability—goals that often conflict. Electronic components take up space, consume power, and give off heat, and in order to make laptops portable, they have to be crammed together very tightly. This requires manufacturers to choose CPUs and other components designed specifically for laptops—i.e. made smaller and designed to produce less heat. Such a compromise necessarily impacts performance. Having no need to keep portability in mind, fixed-mount workstations can use larger components and space them out better, for maximum performance.
- **Temperature range.** Because a laptop's components are packed close together, keeping them cool is difficult. Laptops cope with this problem by running their cooling fans faster and reducing processor performance in order to lower their heat output. (Some "rugged" laptops have been observed throttling their processor when ambient air is just above room temperature.) In a hot environment such as the inside of a vehicle on a summer day, the laptop's small fans may not be able to keep the electronics from overheating, causing significant performance problems or a safety shutdown. Even if a laptop is able to withstand the heat, its battery may not be. All batteries wear out, but heat accelerates this process, drastically reducing portability and requiring repeat purchases of expensive consumables.

MOTOROLA'S MW810 VEHICLE MOUNTED WORKSTATION

For public safety professionals in mission critical environments, safety and success depend on having the right information at the right time. As the leader in public safety wireless communications for over 80 years, Motorola understands this. Our MW810 Mobile Workstation is proof. Its three-piece, fixed-mount design provides reliable, mobile wireless connectivity and computing power for the latest mission-critical applications and is designed to withstand round-the-clock use in a public safety vehicle.

Batteries can also have a narrower operating and storage temperature range than the computer itself. When purchasing a mobile computing solution, it is important to check that all components meet your performance specifications—"surprises" in the field are nearly always expensive and unpleasant.

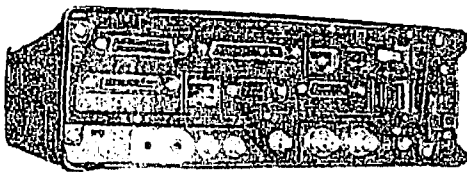
- **Expandability.** In the field, first responders and others need exceptional connectivity not only to networks but also to peripheral devices that help them do their jobs better. Yet the need for a laptop to be small means that it can only support a small number of ports for external devices and wireless connections.

Users will often compensate by adding external devices—such as USB hubs—to allow more peripherals to be connected to the laptop. This adds cost and creates support issues. A fixed-mount workstation can support far more connection options: it's not uncommon to have as many as fifteen built-in ports, supporting everything from analog video to digital license plate readers and vehicle telematics—as well as having room inside for specialized expansion hardware that further enhances its capabilities.

- **Connectivity.** In-vehicle connectivity allows you to simultaneously connect to a variety of systems—such as WiFi, GPS and public data networks—with better reception than typically delivered by laptops, whose small size limits the number of data connections they can support. You can adapt the workstation to utilize vehicle antennas to substantially improve reception, which helps to improve performance and productivity. Laptops can do this to some degree, but again, their physical size limits the number of available antenna ports. Mounting the laptop in the trunk renders the laptop's built-in antennas useless, requiring connections to external antennas—connections that use up the laptop's scarce ports.
- **Changes, Upgrades and Repairs.** Repairs and upgrades can also be issues. With laptops, relatively commonplace problems—like a broken screen or damaged keyboard—can be so expensive to repair that it's better to discard the computer and get a new one. Even when a

laptop is repairable, the time and cost involved are almost always substantial, leading to loss of efficiency and productivity. In addition, upgrading hardware (for example upgrading to a touch screen, adding GPS support, or switching cellular data cards) and performance (inserting expansion boards or antenna ports) is often difficult, expensive or in some cases, not possible with laptops. With fixed-mount workstations, making hardware and software upgrades is normally both simple and cost effective. CPUs, displays, and keyboards can be replaced separately as needed, resulting in thousands of dollars in savings per vehicle.

- **Theft or accidental loss.** In recent years, theft of laptops had become a growing and disturbing problem for almost every municipality and government agency. Laptops are relatively easy to steal and easy to sell. Adding to the problem, many government laptops contain sensitive information that should not be in the hands of criminals. Unlike laptops, fixed-mount workstations make a far less tempting target.



A fixed-mount workstation has a large number of ports for external devices.

Computing Beyond The Vehicle

With advantages in performance, flexibility, and connectivity, government agencies are well-advised to consider built-in workstations for their vehicles. But what about computing needs outside the vehicle? Does portability have to come with diminished flexibility and performance?

If "portability" is synonymous with "laptops," then the answer is probably yes. Recently, however, public safety and other government departments have begun to look at portability as a system. Certainly laptop computers remain in productive use, and are the solution of choice for many users. But a new breed of powerful and feature-rich handheld computers and devices is opening up new possibilities for more efficient, less cumbersome portability. It's portability without the compromises inherent in laptops; an effective and efficient portability that can increase performance and help first responders work more safely and more successfully. It's portability that comes from using rugged handheld computers.



More and more departments are turning to handheld computers for portability and ruggedness

The New Handhelds

Today's handheld computers can be fully ruggedized to withstand the rigors of the front lines and field use. Tested to global standards, today's handheld devices are dust-tight, drop resistant and water resistant, even to the point of full immersion. But a majority of handhelds, even those with high-level functionality and maximum ruggedness, weigh in at about one or two pounds, just ten to twenty percent of the weight of many ruggedized laptops.

Today's rapidly evolving new handheld devices and computers can combine with robust fixed-mount workstations to create a more efficient, more effective portability system for first responders and other government field workers—whether social workers, building inspectors, highway maintenance, or fleet management staff. These handhelds provide plenty of computing power for their applications, but they are smaller than laptops and easier to use under difficult circumstances.

Expanded Functionality. The new handhelds are extremely versatile and feature-rich. Functionality can be customized to your exact needs, providing an exceptional degree of flexibility. There are a variety of hardware options, such as different sizes and types of keyboards and displays. In addition, handhelds can have powerful capabilities—such as GPS, barcode scanners, RFID capabilities, cameras and more—built into the device. This allows sophisticated output options, such as combined data and photo capture that provide images displaying time and GPS coordinates. Many units are also able to display real-time video from surveillance cameras, providing first responders with invaluable foreknowledge of a scene or situation.

Field applications like fingerprinting, electronic citation, or Records Management can be accessed instantly, keeping one hand free. Built-in bar code scanners and ruggedized attachments eliminate the need for vulnerable peripheral devices.

Enhanced Connectivity. Handheld units offer ubiquitous wireless connectivity. Most offer data and phone calls on a single device, often with Bluetooth capabilities. You can have high-speed connectivity to a variety of networks, such as Mesh or cellular data, and you can even create WiFi-based "network bubbles" of up to several hundred feet around a vehicle connected to a private network. This enables the handheld to transmit to the fixed-mount workstation which can relay data to control centers over a private network. It also lets the handheld access applications running on the vehicle workstation, putting the workstation's full power into the hands of users.

Ease of Use. Unlike some laptop computers, today's sophisticated handheld devices do not have to be force fit into field situations. They are designed specifically for the situation in which they will be used. All are compact and lightweight. Some provide hands-free portability with the ability to fit into a pocket or holster, and are less cumbersome to use. Others are designed with comfortable "gun grips" ideal for scanning-intensive and other types of applications.

A BROAD PORTFOLIO OF HANDHELD DEVICES

As a pioneer and respected global leader in mobile computing, Motorola offers one of the industry's broadest portfolios of powerful handheld computers and devices. We offer a wide range of dependable, rugged handheld mobile computers specifically designed to provide the most efficient, most effective solutions for protecting and empowering users from first responders to field workers in virtually every municipality, department and agency.

The Future Of Portability

In many cases, laptops will continue to be used in much the same way as they are used today. For one thing, there are a lot of laptops out there that are functioning well and providing excellent portable utility. They are not going to be replaced en masse. For another, under certain circumstances, laptops remain the preferred technology choice. This is especially true of laptops that are tied to a specific individual, like a police or fire official or supervisor. Although he or she may use the laptop primarily in the office, there are times when it's important to be able to take that particular computer, with all its applications and data, into the field. Laptops are well-suited for this kind of use case.

Portability Systems

But as the limitations of laptops as truly portable devices become more apparent, and as their use outside of vehicles continues to decline, fixed-mount workstations are beginning to become a valued option in many instances. When true portability is not crucial, the fixed-mount workstation is an alternative that provides a great many advantages over laptops, especially in terms of power, performance and connectivity. For organizations that need more efficient and more effective portability, a system of handheld computers and devices supported by a powerful fixed-mount workstation is a solution certain to grow in years ahead.

What are the cost implications? In most cases, laptop computers and fixed-mount workstations are similar in cost. The major cost differential occurs when handheld devices are added to the mix; adding these units will normally cause the combined fixed-mount workstation and handheld portability system to cost approximately 15-25 percent more than the price of a single laptop. It's worth keeping in mind that such a system is far more practical in the field, and that it eliminates the need to purchase expensive, fragile standalone accessories like cameras and bar-code scanners.

And of course, there is more to cost of ownership than purchase price: heightened personnel effectiveness, better productivity, and savings on support and replacement costs can easily justify a higher up-front outlay. (This is, after all, why so many agencies buy rugged equipment in the first place.) Safety and effectiveness remain key considerations. Municipalities and other government agencies will ultimately decide on their best vehicle and field communications and computing options—whether laptops, fixed-mount workstations or handheld computers—based on their own organization's resources, goals, and strategies.



MOTOROLA

Motorola, Inc.
1301 E. Algonquin Road
Schaumburg, Illinois 60196 U.S.A.
www.motorola.com/mw810
1-800-367-2346

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RO-14-2013

Automated License Plate Reader (ALPR) Web Application-- DRAFT-- 5 Aug 06

The Department of Police currently has four (4) ALPR vehicles that have scanned a combined 1,250,000 plates and resulted in hundreds of recovered vehicles, many arrests, and recovery of weapons and narcotics.

The following application is being used in a TEST MODE and is restricted to EXEMPT personnel only during the test.

The web application www.ChicagoPolice.org/ALPR allows you to enter license plates or partial plates to be automatically added to the Hit List on the ALPR vehicles.

The ALPR equipment on the vehicles cannot flag partial plates by themselves-- the ALPRs must have a Hit List that contains specific license plates to be flagged. Only these specific license plates can be detected by the ALPR vehicles. The Hit List is generated automatically each day using the following:

- National NCIC wanted vehicles from a direct, daily NCIC data feed
- Illinois wanted vehicles from a direct, daily LEADS data feed
- Local wanted vehicles from a direct, daily Hot Desk data feed
- Wanted registered owners of Illinois vehicles from a daily "match" of warrants and Investigative Alerts against SOS vehicle registration data

The above methods occur automatically every day and generate the Hit List that's transmitted to all the ALPR vehicles. At any time, 300,000 plates may be in the Hit List.

The procedures below are **ONLY** necessary to manually add vehicles to the Hit List that are not automatically added from the process described above.

In order to work with Partial Plates, the process described below allows you to enter as much information as possible about the wanted vehicle, and then runs a query against Illinois SOS vehicle registration information to find a list of all matches, and then **adds those specific matched plates to the Hit List.**

1

From Internet Explorer, go to the Address Bar and type www.ChicagoPolice.org/ALPR. Log in with your CLEAR PC number and Password.

Please Login with your CHRIS Username/Password	
Username	<input type="text"/>
Password	<input type="password"/>
<input type="button" value="Login"/>	

2

First see if the license plate you want to add is already in the **Hit List**.

- Click MAIN LIST
- Click Search Wanted Vehicles
- Enter plate information
- Click SEARCH

If your plate is in the list, you don't need to enter it again. Note: This is the list of all license plates currently in the **Hit List**, from all sources *except* NCIC: LEADS and HOT DESK stolen vehicles and wanted persons/ investigative alerts will be in this list. At any given time, there may be 300,000 plates in the list.

Search Wanted Vehicles

License	J911234

Main List

Total Records: 1

License	State	Year	Make
J911234	IL	2001	OLDSMOBILE

Note: Partial Plates will NOT be in this list. To see any Partial Plates you may have entered, you must use the Personal Plates link, described later.

In general, you will be entering **PARTIAL PLATES**, because **SPECIFIC WANTED** plates will probably already have been automatically entered. If a plate is in the Hot Desk, LEADS, or NCIC, it will be automatically entered. This applies to stolen vehicles, stolen plates, warrants, and Investigative Alerts.

If you need to manually enter a **SPECIFIC WANTED** plate, simply click on the appropriate link (**Add New Specific Wanted**) and follow the on-screen prompts (see below for more information). Adding a specific plate will be rare, because this information is generally already going to be in the Hit List (see first page).

The procedures below describe how to use the **PARTIAL PLATE** function.

3

To enter a **PARTIAL PLATE**, click on the **Add New Partial Wanted** link and follow the prompts.

Note: Partial searches only work for Illinois plates with SOS registration on file. SOS registration data is updated monthly.

Add New Partial Wanted

4

In the License* box, you must enter at least three (3) digits from the plate. This three-digit sequence can appear anywhere in the license plate. For example, 123 would return a match on:
 X123X
 123X
 X123
 ..and so on. You must have at least three (3) digits from the plate (this is subject to change in future versions of the application).

Add/Edit Partial Wanted for PC09636

License *
(Click here for partial plate instructions)
State
Veh Year
Vehicle Top Color
Vehicle Bottom Color
Make *
Vehicle Body Style *

5

Describe as much information about the vehicle as possible. Some fields (denoted with asterisks) are mandatory: License, Make, Body Style. Once you have described the vehicle, click on the link **Click here to see how many matches to see how many registered vehicles match.**

In the example to the right, we entered "123" in the License field, and "FORD" in the Make field, and "CONVERTBL" in the Vehicle Body Style field. There are 16 registered vehicles that match the search criteria. Click on any of the PLATE NUMBER matches to see the SOS registration data for that match.

Partial Matches: 16

PLATE NUMBER	VEH YEAR	VEH MAKE
2390123	1991	FORD
7881236	1969	FORD
7641232	1990	FORD
6804123	1994	FORD
7717123	2002	FORD
F512364	2005	FORD

Tip: You can use this function as an investigative tool to view SOS registration information using partial searches as described here.

6

Enter the rest of the requested information. The **Comments** field is **CRITICAL**. This is the information that will be shown to the officer on the ALPR vehicle if there's a hit. You **MUST** provide **ALL** applicable information including RD number, descriptions/ names of offenders, instructions on who to contact, **officer caution information**, etc.

This is the information that will be presented to the officer.

Possible involved vehicle in Agg Batt under RD HM-xxxxxx.

7

In the **Prob Cause** field, select **Yes** or **No** for Probable Cause to Arrest any named offenders in the **Comments** field.

In **Date of Occurrence**, insert the date of the original incident if known.

The **District** field will be used for a future application called DIBS, District Intelligence Briefing Sheet. For now, select **CITYWIDE**. In **Exp Days**, select the number of days this information should remain active.

Note: If the vehicle is stopped or case is cleared before the expiration date, you must manually delete this entry, otherwise it will not expire until the expiration date.

When done, click **ADD**.

Comments (Click here to format your comments properly)
Prob Cause *
Date Of Occurrence
District *
Exp Days
* Denotes required fields

Add

8

From the main screen, you may click on **Personal List** to manage the specific and partial plates you have entered.

This screen may also be used to **DELETE** an entry you have made.

Follow the on-screen prompts. Click **Edit** to modify or delete an entry you've made.

Main List		Personal List		
Personal List for PC09636				
Total Records: 1				
	License	State	Year	Make
Edit	9999999	IL		
				First

SEE NEXT PAGE FOR IMPORTANT NOTES.

Important Notes:

- **Partial Plate only works for registered Illinois vehicles.**
- **Partial Plate uses SOS data, which may have integrity issues.**
 - **You will notice that there are hundreds of vehicle makes and body styles. In order to ensure a match, you may want to make several entries. For example, you will note that there is a make called FORD and a make called FORDS. This is due to possible SOS data issues. You may want to make one Partial Plate entry selecting FORD, and a second entry selecting FORDS, to ensure all the appropriate matches are made against the SOS data.**
- **The person entering wanted plate information is responsible for removing it when the information is no longer needed.**
- **By entering wanted plate information into this web application, there must be reasonable suspicion to justify the stop. Probable Cause to Arrest will be determined by the officers based upon further investigation.**
- **Vehicle data is updated at 5AM each day. Therefore, the wanted plate information you enter after 5AM will most likely be updated to the ALPR trucks the following day.**

Should you have any questions or comments, please contact me via email:

Jonathan.Lewin@ChicagoPolice.org

Automated License Plate Reader (ALPR) Web Application

The Department of Police currently has approximately forty (40) ALPR vehicles that have scanned over 500 million plates and resulted in hundreds of recovered vehicles, many arrests, and recovery of weapons and narcotics.

The following application is being used in a BETA TESTING and is restricted to EXEMPT personnel only during the test.

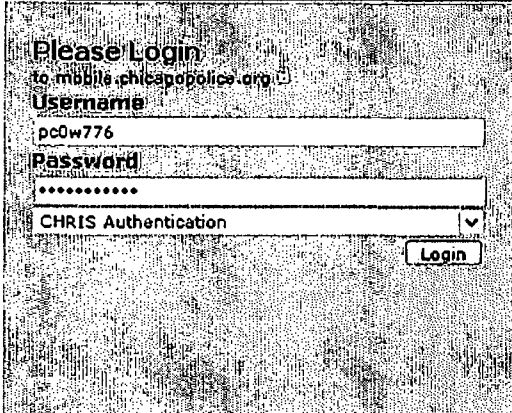



The web application www.ChicagoPolice.org/ALPR or mobile.ChicagoPolice.org/ALPR allows you to enter license plates to be automatically added to the **HOT LIST** on the ALPR vehicles.

The **HOT LIST** is generated automatically each day using the following:

- National NCIC wanted vehicles from a direct, daily NCIC data feed
- Illinois wanted vehicles from a direct, daily LEADS data feed
- Local wanted vehicles from a direct, daily Hot Desk data feed

The above methods occur automatically every day and generate the Hit List that's transmitted to all the ALPR vehicles. At any time, 300,000 plates may be in the **HOT LISTS**.

The procedures below are ONLY necessary to manually add vehicles to the Hit List that are not automatically added from the process described above.

<p>1</p>	<p>From an internet browser, go to the Address Bar and type www.ChicagoPolice.org/ALPR. Log in with your CHRIS PC number and password.</p>	
<p>2</p>	<p>To enter a PLATE, click on the ADD PLATE link and follow the prompts.</p>	
<p>3</p>	<p>In the LICENSE PLATE text-box, you must enter at least three (3) digits from the known plate. This three-digit sequence can appear anywhere in the license plate. Describe as much information about the vehicle as possible. Some fields (denoted with asterisks) are mandatory: LICENSE PLATE, LICENSE PLATE STATE, ALERT TYPE, and NARRATIVE.</p>	
<p>4</p>	<p>Enter the rest of the requested information. The NARRATIVE field is CRITICAL. This is the information that will be shown to the officer on the ALPR vehicle if there's a hit. You MUST provide ALL applicable information including RD number, descriptions/ names of offenders, instructions on who to contact, officer caution information, etc.</p>	
<p>5</p>	<p>In Date of Occurrence, insert the date of the original incident if known.</p> <p><i>Note: If the vehicle is stopped or case is cleared before the expiration date, you must manually deactivate this entry; otherwise it will not expire until the expiration date.</i></p> <p>When done, click ADD.</p>	

6

From the main screen, you may click on **PERSONAL LIST** to manage the specific plates you have entered. This screen may also be used to **deactivate** an entry you have made. Follow the on-screen prompts. Click **THE LICENSE PLATE** to modify or deactivate an entry you've made.

Important Notes:

- The person entering wanted plate information is responsible for removing it when the information is no longer needed.
- By entering wanted plate information into this web application, there must be reasonable suspicion to justify the stop. Probable Cause to Arrest will be determined by the officers based upon further investigation.
- Vehicle data is updated at 12AM each day. Therefore, the wanted plate information you enter after 12AM will most likely be updated to the ALPR trucks the following day.

Should you have any questions or comments, please contact the **MOBILE SERVICES SECTION** via email: mobile.tech@chicagopolice.org