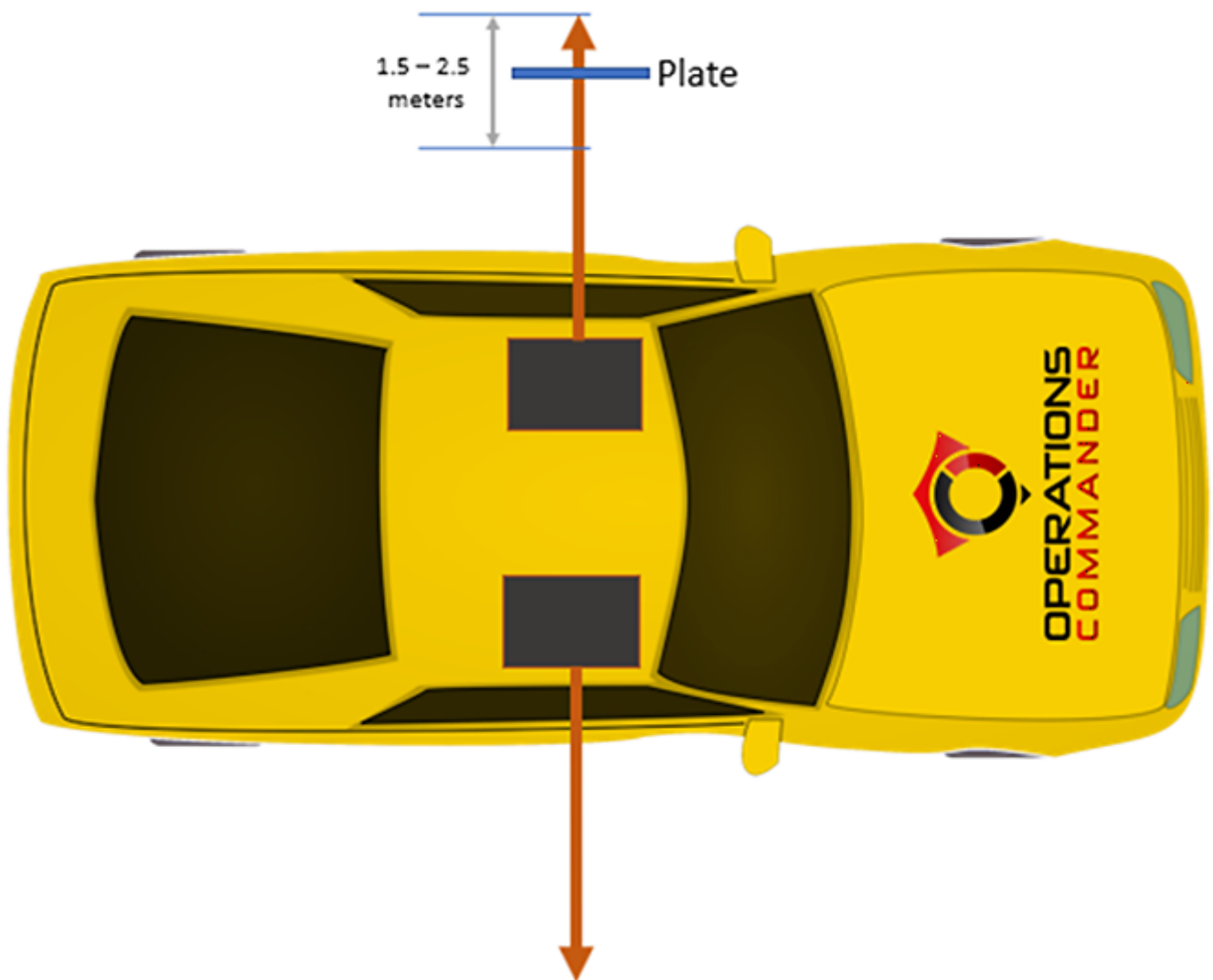


Improve LPR Read Rates

What is the optical range for the reader?

The sweet spot for plate reads is 1.5 to 2.5 meters between camera and plate. Also check to make sure the lens is clean. Another issue may be camera angle. The optimum angle for the camera is straight on (parallel) to the plate



Fuzzy Searching

The PL8-RDR system supports fuzzy searching based on user supplied values.

In the case of the LPR system "seeing" **ABC123**, it will also validate against **A8C123** and **ABC128** or **A8C12B**.

Manual Corrections

You can improve plate reads by making corrections and verifying correct plates on the system. OPS-COM has an algorithm that includes the human updates as part of the read score. Therefore, if a plate is misread and corrected, it is very probable that the system will return the (human) updated version.

Further, the system does fuzzy searching... this means it will look for a plate in the system that matches a pattern. For example, a plate of ABC123 may be read as A8C128. With fuzzy searching and based on time of day etc. the system will return ABC123 if that plate has a permit (but will also note that it was a "fuzzy" read of the plate).

If you see a score of 100% in the LPR report that means that the system determined a human updated version was the best match since a score of 100% is theoretically impossible with LPR cameras.

As an Example here's a tweak you can do for Ontario users once the camera is setup...

Go into the Web Interface Page Plate Reader Camera OCR and set the following Characters dimensions:

CHAR SIZE Min W: 10 Max W: 50 Min H:30 Max H: 100



Plate Reader Settings

Plate Reader

System

Plate Locator		Char Size Pixel		Plate Format	
Win MinX Pixel	<input type="text" value="0"/>	Min Width	<input type="text" value="10"/>	Max Jolly Chars	<input type="text" value="0"/>
Win MinY Pixel	<input type="text" value="0"/>	Max Width	<input type="text" value="50"/>	Plate With Separator	<input type="text" value="NO"/>
Win MaxX Pixel	<input type="text" value="1279"/>	Min Height	<input type="text" value="30"/>	Enable UTF8 Encode(*)	<input type="text" value="NO"/>
Win MaxY Pixel	<input type="text" value="1023"/>	Max Height	<input type="text" value="100"/>	(*): Plate string encoded with UTF8 for image and DB saving (Ä, ƒ, ð)	
Sensitivity	<input type="text" value="NORMAL"/>				
Temporal Integration					
Max Time Transit ms(*)		<input type="text" value="500"/>			
Min Time Same Plate ms(*)		<input type="text" value="2000"/>			
Max Plates in Image [1-4]		<input type="text" value="1"/>			
Image Selection Mode		<input type="text" value="BEST LUMINANCE"/>			
Enable Multi Out Same Plate(*)		<input type="text" value="0"/>			
Min Num Plate Read [1-3](*)		<input type="text" value="2"/>			
Apply Min Num Read To(*)		<input type="text" value="READ_NOTREAD"/>			
Min Plate Score for Num Read=1 [50-100](*)		<input type="text" value="65"/>			
Maximum string distance [0-5]		<input type="text" value="2"/>			
(*): Used in Free Run Mode Only					
Advanced Features					
<input type="button" value="Advanced Settings"/>					

Warning: changes in these settings will briefly interrupt this browser connection. Refresh this screen to reconnect.

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Improving Exposure

For dark plate reads:

Set Max Shutter to 500

Set Max Gain to 256 (If images are too dark this setting can be increased. However it is not recommended to go over 1000.)

Set Iris Level to 15

General

Grab Mode

AUTOIRIS

Info Position

TOP_LEFT

Image Mode

NORMAL

Autoiris

Max Shutter μ s

500

Max Gain

256

Iris Level

15

Adjusting the Bounding Box

The LPR camera has the ability to customize the area that is being analyzed during the plate read. This article explains how to adjust the read area (Bounding Box). The bounding box refers to the area that can be adjusted to narrow the view or area that is analyzed by the LPR camera.

The settings involved are located in the Plate Reader Settings.



ANPR MOBILE SYSTEM Advance

Plate Reader Settings

Plate Reader

System

Plate Locator		Char Size Pixel		Plate Format	
Win MinX Pixel	<input type="text" value="0"/>	Min Width	<input type="text" value="8"/>	Max Jolly Chars	<input type="text" value="0"/> ▼
Win MinY Pixel	<input type="text" value="0"/>	Max Width	<input type="text" value="40"/>	Plate With Separator	<input type="text" value="NO"/> ▼
Win MaxX Pixel	<input type="text" value="1279"/>	Min Height	<input type="text" value="15"/>	Enable UTF8 Encode(*)	<input type="text" value="NO"/> ▼
Win MaxY Pixel	<input type="text" value="1023"/>	Max Height	<input type="text" value="60"/>	(*) : Plate string encoded with UTF8 for image and DB saving (Ã, ¤, ¤)	
Sensitivity	<input type="text" value="HIGH"/> ▼				

Temporal Integration	
Max Time Transit ms(*)	<input type="text" value="500"/>
Min Time Same Plate ms(*)	<input type="text" value="2000"/>
Max Plates in Image [1-4]	<input type="text" value="1"/>
Image Selection Mode	<input type="text" value="BEST LUMINANCE"/> ▼
Enable Multi Out Same Plate(*)	<input type="text" value="0"/> ▼
Min Num Plate Read [1-3](*)	<input type="text" value="2"/>
Apply Min Num Read To(*)	<input type="text" value="READ_NOTREAD"/> ▼
Min Plate Score for Num Read=1 [50-100](*)	<input type="text" value="70"/>
Maximum string distance [0-5]	<input type="text" value="2"/>
(*) : Used in Free Run Mode Only	

Advanced Features	
<input type="text" value="Advanced Settings"/>	

Reset Apply

Warning: changes in these settings will briefly interrupt this browser connection. Refresh this screen to reconnect.

The default settings for full frame are as follows. Measurements for height are always considered the distance from the top of the screen. Measurements for width are based on distance from the left of the screen

Win MinX Pixel - 0 *(From the left)*

Win MinY Pixel - 0 *(from the top)*

Win MaxX Pixel - 1279 *(From the left)*

Win MaxY Pixel - 1023 *(from the top)*



ANPR MOBILE SYSTEM Advance

Plate Reader Settings

Plate Reader

System

Plate Locator		Char Size Pixel		Plate Format	
Win MinX Pixel	<input type="text" value="0"/>	Min Width	<input type="text" value="8"/>	Max Jolly Chars	<input type="text" value="0"/> ▼
Win MinY Pixel	<input type="text" value="0"/>	Max Width	<input type="text" value="40"/>	Plate With Separator	<input type="text" value="NO"/> ▼
Win MaxX Pixel	<input type="text" value="1279"/>	Min Height	<input type="text" value="15"/>	Enable UTF8 Encode(*)	<input type="text" value="NO"/> ▼
Win MaxY Pixel	<input type="text" value="1023"/>	Max Height	<input type="text" value="60"/>	(*) : Plate string encoded with UTF8 for image and DB saving (Ã, ¤, ¤)	
Sensitivity	<input type="text" value="HIGH"/> ▼				

Temporal Integration	
Max Time Transit ms(*)	<input type="text" value="500"/>
Min Time Same Plate ms(*)	<input type="text" value="2000"/>
Max Plates in Image [1-4]	<input type="text" value="1"/>
Image Selection Mode	<input type="text" value="BEST LUMINANCE"/> ▼
Enable Multi Out Same Plate(*)	<input type="text" value="0"/> ▼
Min Num Plate Read [1-3](*)	<input type="text" value="2"/>
Apply Min Num Read To(*)	<input type="text" value="READ_NOTREAD"/> ▼
Min Plate Score for Num Read=1 [50-100](*)	<input type="text" value="70"/>
Maximum string distance [0-5]	<input type="text" value="2"/>
(*) : Used in Free Run Mode Only	

Advanced Features	
<input type="text" value="Advanced Settings"/>	

Reset Apply

Warning: changes in these settings will briefly interrupt this browser connection. Refresh this screen to reconnect.

To view the location of the bounding box go into the Camera OCR tab.



ANPR MOBILE SYSTEM Advance

Number Plate Reader Configuration

Plate Reader

System



[General](#)



[Camera Ocr](#)



[Camera Context](#)



[Plate Reader](#)



[Check List](#)



[Events Actions](#)



[Image Result](#)



[Text Result](#)



[Statistics](#)



[RTP](#)



[Video Archive](#)

Here is the full frame view of the bounding box. See the red outlined box in the image below.



ANPR MOBILE SYSTEM Advance

Frame Grabber Settings

- Plate Reader
- System

Warning: Engine is stopped if this page is active.

Plate : NO PLATE

Char Width : -

Char Height : -

Match List A : DISABLED

Match List B : DISABLED

Acq(Sh,G,St) : 300 us, 190, 151 us

Warning: Live video will stop after 120 seconds.

Start Live

Stop Live

Reset

Apply

General

Grab Mode

AUTOIRIS

Info Position

TOP_LEFT

Image Mode

NORMAL

Autoiris

Max Shutter μ s

300

Max Gain

256

Iris Level

5

Save Image

Adjusting Height

To adjust the box edit the number in the settings. In this case we will narrow the bounding box in height to restrict the read area.

Here are the settings:

Win MinX Pixel - 0 (*from the left*)

Win MinY Pixel - **100** (*from the top*)

Win MaxX Pixel - 1279 (*from the left*)

Win MaxY Pixel - **700** (*from the top*)



ANPR MOBILE SYSTEM Advance

Plate Reader Settings

Plate Reader

System

Plate Locator		Char Size Pixel		Plate Format	
Win MinX Pixel	<input type="text" value="0"/>	Min Width	<input type="text" value="8"/>	Max Jolly Chars	<input type="text" value="0"/>
Win MinY Pixel	<input type="text" value="100"/>	Max Width	<input type="text" value="40"/>	Plate With Separator	<input type="text" value="NO"/>
Win MaxX Pixel	<input type="text" value="1279"/>	Min Height	<input type="text" value="15"/>	Enable UTF8 Encode(*)	<input type="text" value="NO"/>
Win MaxY Pixel	<input type="text" value="700"/>	Max Height	<input type="text" value="60"/>	(*) : Plate string encoded with UTF8 for image and DB saving (آ, ر, ب)	
Sensitivity	<input type="text" value="HIGH"/>				

Temporal Integration	
Max Time Transit ms(*)	<input type="text" value="500"/>
Min Time Same Plate ms(*)	<input type="text" value="2000"/>
Max Plates in Image [1-4]	<input type="text" value="1"/>
Image Selection Mode	<input type="text" value="BEST LUMINANCE"/>
Enable Multi Out Same Plate(*)	<input type="text" value="0"/>
Min Num Plate Read [1-3](*)	<input type="text" value="2"/>
Apply Min Num Read To(*)	<input type="text" value="READ_NOTREAD"/>
Min Plate Score for Num Read=1 [50-100](*)	<input type="text" value="70"/>
Maximum string distance [0-5]	<input type="text" value="2"/>
(*) : Used in Free Run Mode Only	

Advanced Features	
<input type="text" value="Advanced Settings"/>	

Reset Apply

Warning: changes in these settings will briefly interrupt this browser connection. Refresh this screen to reconnect.

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IMPORTANT

Once the settings are changed and you click on Apply, the camera will reboot. This process will take a couple of minutes to complete before you can navigate away from the page.

The resulting Bounding Box will look like this:

Frame Grabber Settings

10.42.0.140/cgi-bin/CGI_FrameGrab.cgi



ANPR MOBILE SYSTEM Advance

Plate Reader

System

Frame Grabber Settings

Warning: Engine is stopped if this page is active.

Plate : NO PLATE

Char Width : -

Char Height : -

Match List A : DISABLED

Match List B : DISABLED

Acq(Sh,G,St) : 300 us, 183, 77 us

Warning: Live video will stop after 120 seconds.

Start Live

Stop Live

Reset

Apply

Save Image

General

Grab Mode
AUTOIRIS

Info Position
TOP_LEFT

Image Mode
NORMAL

Autoiris

Max Shutter μ s

300

Max Gain

256

Iris Level

5

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Let's now say we want to lower the box in the view. I would have to increase the values in both Y axis settings.

Here are the settings

Win MinX Pixel - 0 (*from the left*)

Win MinY Pixel - **200** (*From the top*)

Win MaxX Pixel - 1279 (*from the left*)

Win MaxY Pixel - **800** (*From the top*)

Plate Reader Settings

System

ANPR MOBILE SYSTEM Advance

Plate Reader Settings

Plate Locator		Char Size Pixel		Plate Format	
Win MinX Pixel	0	Min Width	8	Max Jolly Chars	0 ▾
Win MinY Pixel	200	Max Width	40	Plate With Separator	NO ▾
Win MaxX Pixel	1279	Min Height	15	Enable UTF8 Encode(*)	NO ▾
Win MaxY Pixel	800	Max Height	60	(*): Plate string encoded with UTF8 for image and DB saving (آ, ب, ٣)	
Sensitivity	HIGH ▾				

Temporal Integration

Max Time Transit ms(*)	500
Min Time Same Plate ms(*)	2000
Max Plates in Image [1-4]	1
Image Selection Mode	BEST LUMINANCE ▾
Enable Multi Out Same Plate(*)	0 ▾
Min Num Plate Read [1-3](*)	2
Apply Min Num Read To(*)	READ_NOTREAD ▾
Min Plate Score for Num Read=1 [50-100](*)	70
Maximum string distance [0-5]	2

(*): Used in Free Run Mode Only

Advanced Features

Advanced Settings

Reset

Apply

Warning: changes in these settings will briefly interrupt this browser connection. Refresh this screen to reconnect.

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Here is the resulting bounding box:



ANPR MOBILE SYSTEM Advance

Frame Grabber Settings

- Plate Reader
- System

Warning: Engine is stopped if this page is active.

Plate : NO PLATE

Char Width : -

Char Height : -

Match List A : DISABLED

Match List B : DISABLED

Acq(Sh,G,St) : 300 us, 184, 77 us

Warning: Live video will stop after 120 seconds.

Start Live

Stop Live

Reset

Apply

General

Grab Mode

AUTOIRIS

Info Position

TOP_LEFT

Image Mode

NORMAL

Autoiris

Max Shutter μ s

300

Max Gain

256

Iris Level

5

Save Image



Adjusting Width

Additionally you can narrow the width of the bounding box if need be. In this case we will narrow the bounding box by 100 pixels on both sides.

Here are the settings

Win MinX Pixel - **100** (*from the left*)

Win MinY Pixel - 200 (*From the top*)

Win MaxX Pixel - **1179** (*from the left*)

Win MaxY Pixel - 800 (*From the top*)



ANPR MOBILE SYSTEM Advance

Plate Reader Settings

Plate Reader

System

Plate Locator		Char Size Pixel		Plate Format
Win MinX Pixel	<input type="text" value="100"/>	Min Width	<input type="text" value="8"/>	Max Jolly Chars <input type="text" value="0"/>
Win MinY Pixel	<input type="text" value="200"/>	Max Width	<input type="text" value="40"/>	Plate With Separator <input type="text" value="NO"/>
Win MaxX Pixel	<input type="text" value="1179"/>	Min Height	<input type="text" value="15"/>	Enable UTF8 Encode(*) <input type="text" value="NO"/>
Win MaxY Pixel	<input type="text" value="800"/>	Max Height	<input type="text" value="60"/>	(*): Plate string encoded with UTF8 for image and DB saving (Ã, ¢, ß)
Sensitivity	<input type="text" value="HIGH"/>			

Temporal Integration

Max Time Transit ms(*)	<input type="text" value="500"/>
Min Time Same Plate ms(*)	<input type="text" value="2000"/>
Max Plates in Image [1-4]	<input type="text" value="1"/>
Image Selection Mode	<input type="text" value="BEST LUMINANCE"/>
Enable Multi Out Same Plate(*)	<input type="text" value="0"/>
Min Num Plate Read [1-3](*)	<input type="text" value="2"/>
Apply Min Num Read To(*)	<input type="text" value="READ_NOTREAD"/>
Min Plate Score for Num Read=1 [50-100](*)	<input type="text" value="70"/>
Maximum string distance [0-5]	<input type="text" value="2"/>

(*): Used in Free Run Mode Only

Advanced Features

Advanced Settings


Reset Apply

Warning: changes in these settings will briefly interrupt this browser connection. Refresh this screen to reconnect.

Here is the resulting bounding box.

Frame Grabber Settings

10.42.0.140/cgi-bin/CGI_FrameGrab.cgi



ANPR MOBILE SYSTEM Advance

Plate Reader

System

Frame Grabber Settings

Warning: Engine is stopped if this page is active.

Plate : NO PLATE

Char Width : -

Char Height : -

Match List A : DISABLED

Match List B : DISABLED

Acq(Sh,G,St) : 200 us, 378, 200 us

Warning: Live video will stop after 120 seconds.

Start Live

Stop Live

Reset

Apply

General

Grab Mode

AUTOIRIS

Info Position

TOP_LEFT

Image Mode

NORMAL

Autoiris

Max Shutter μ s

300

Max Gain

256

Iris Level

5

Save Image

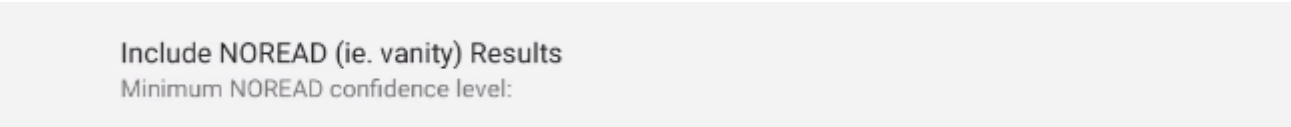
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By selective use of these settings you can customize the area that is processed by the LPR read. As a result LPR reads could be faster and more accurate since the camera is reading a smaller more focused area and ignores anything outside of the bounding box.

On the Handheld

For NOREADs you can check the setting in **System Settings** to see if that can be reduced. It may mean more noise, but it may also help with determining what is going on (ie. reading but not seeing it as a **READ** result)

To adjust this setting go into system settings and tap on Include NOREAD (ie. vanity) Results



Set the percentage to 50% to start. We can tweak it once we see how the system reacts.

