



Multi-Platform OCR Engine

Windows 32/64 bit (Server 20XX, 8,10),
Debian Linux GNI 1.4+, Ubuntu 8.04+,
Windows Mobile 6.0, 6.5.3, Windows Phone
7.0+

Country-Independent Engine

Multi Neural-net supports Latin, Arabic & Thai
Characters.

Input Image Format

BMP24, JPEG, YUY2, RGB, Gray8, 5MB
maximum image size.

Operating Mode

Free-flow & Triggered

Plate Formats

Rectangular or square 2/3 line plates Dark
character on light background Light character
on dark background

Character Height

14 – 70 pixels

Direction Reporting

Towards, Away & Unknown

VaxALPR is a license plate recognition application developed by Vaxtor Recognition Technologies for the most demanding scenarios using Vaxtor's powerful proprietary OCR engine.

The application connects to multiple cameras using standard protocols and the ALPR engine recognizes plates in real time on fast-moving vehicles across several lanes simultaneously. In high speed scenarios plates are read from multiple cameras on vehicles travelling at speeds up to 225 Km/h and in access control deployments up to 128 cameras can be connected simultaneously to an appropriate PC.

The engine will report the direction of travel and optional plugins include full Make, Model & Color recognition. Other variants include ADR Plates (Hazardous Cargo), ISO Container recognition and Speed and Red Light detection.

Results can be sent to Helix, Vaxtor's powerful back office, or reported to third-party applications via TCP/IP, HTTP-POST-XML, HTTP-POST-JSON or simply save results to a directory (.csv list of plate events & separate associated jpg images). Most major VMS products are supported including Milestone, Genetec, Network Optix etc.

VaxALPR-PC CPU & RAM Recommendations

	Total amount of ALPR cameras that can be managed per PC using VaxALPR only (1)									
	Approximate Maximum Vehicle Speed for 1 lane ALPR					Approximate Maximum Vehicle Speed for 2 lanes ALPR				
	Stop & Go Cam: 2 FPS	30 Km/h 20 Mph Cam: 10 FPS	100 Km/h 60 Mph Cam: 20 FPS	160 Km/h 100 Mph Cam: 30 FPS	250 Km/h 150 Mph Cam: 50 FPS	Stop & Go Cam: 2 FPS	30 Km/h 20 Mph Cam: 10 FPS	100 Km/h 60 Mph Cam: 20 FPS	160 Km/h 100 Mph Cam: 30 FPS	250 Km/h 150 Mph Cam: 50 FPS
i5: (2.70-3.30) GHz 2 Cores - 4 Threads Intel Core i5-4570TE	12	4	4	0	0	8	4	2	0	0
i7: (2.00-3.80) GHz 4 Cores - 8 Threads Intel Core i7-7700T	24	16	8	4	0	24	16	8	0	0
i7: (3.70-4.70) GHz 6 Cores - 12 Threads Intel Core i7-8700K	48	36	24	12	6	48	24	12	6	3
i9: (3.10-4.40) GHz 16 Cores - 32 Threads Intel Core i9-9960X	128	96	64	32	16	128	64	32	16	8

(1) Further Considerations	
Cam. Mount:	Fixed
RAM:	Base 8 GB RAM add +1 GB additional per ALPR instance
Hard Disk:	No special consideration
1 lane:	1280x720 video resolution
2 lanes:	1920x1080 video resolution
Cam. Angles:	0 Km/h - 30 Km/h: Horizontal: < 30°, Vertical: < 30° 30 Km/h -160 Km/h: Horizontal: < 20°, Vertical: < 25° 160 Km/h -250 Km/h: Horizontal: < 5°, Vertical: < 20°

ALPR OCR Settings

The screenshot shows the 'OCR configuration' window. On the left, there are input fields for Instance ID (1), Min. global confidence (70%), Min. character confidence (50%), Min. character height (14 pixels), Max. character height (70 pixels), Min. number of characters (5), Max. number of characters (9), Max. slope angle (20 deg), Same plate timeout (60 s), Maximum plates distance (2), Max recognition period (500 ms), Min. plate occurrences (2), and Max. plate occurrences (20). In the center, there are dropdowns for OCR Complexity (High), Find plate depth (Low), Plate back mode (Dark on LI), and Operating mode (Free Flow). A CPU Resources gauge shows 80%. On the right, there are two lists: 'List of Countries' (including Afghanistan, Albania, Algeria, etc.) and 'List of USA States' (including Alabama, Alaska, Arizona, etc.). Below these are 'Selected Countries' (United Kingdom, France, Belgium, Netherlands, Germany) and 'Selected USA States' (empty). At the bottom, there are checkboxes for OCR Debug mode, Grammar Strict, Motion Detection, Multiple Countries Balanced, and Double Line Plates.

Lane-Independent Settings

Each connected video stream can be independently configured for optimum OCR performance.

Country-Independent

The engine contains four neural-nets meaning that the same ALPR product can operate almost anywhere in the world.

VaxALPR-PC Export Options

The program has multiple output options including:

TCP/IP Sockets, Plain TCP/IP Sockets, HTTP-POST XML & HTTP(s)-POST JSON in addition to local disk storage.

Results can also be sent several VMS products as events & bookmarks including: Genetec Security Centre, Milestone XProtect, Network Optix nx Witness VMS, Genetec Security Centre, Exacq, March Networks and many more.

For more information on any of Vaxtor's ALPR products contact any of the Vaxtor offices below.

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