



The GAO RFID Standalone Access Control System is a reliable, convenient and user friendly way to control parking lot access. It is an "In a Box" solution that includes the software, antenna and all other peripherals such as the digital I/O, dry contact relay channels. These components are interfaced together and embedded right in the box which can be installed to automate barrier lift arm, slide, and swing gates at parking lot entryways.

With our Access Control Management Software installed on a desktop computer, you can activate and administer the tags with the required personnel/vehicle information. Using a simple USB stick, data exchange and software upgrades are easily conducted.

This results in a compact, convenient, and cost-effective parking control solution that can be installed within minutes without the worry of networking and extensive programming. GAO Access Control in a Box–a simple and effective way to control parking lot access, no matter how remote the location.



I. System Components:

The GAO Standalone access control system includes following when it is shipped -

✓ GAO 236015/236018 smart RFID reader/writer



- ✓ 860M~960MHz Antenna(s) (If purchased)
- ✓ 2 or 4 channel Dry-Contact type relay board



- ✓ RFID Transponders or tags (If purchased)
- ✓ Desktop 860~960MHz EPC Gen 2 RFID Reader for tag registration purpose (If Purchased)
- ✓ Heavy duty Enclosure (If purchased)
- ✓ Pre-loaded Smart/Embedded firmware for 236015/236018 Readers
- ✓ Access Control Server software
- Accessories including adapters, power cord, antenna cables (if purchased), etc.



- II. System Set-up:
 - ✓ Use the default power supply to power on the GAO 236015/18 RFID scanner by plugging the power jacket into the reader
 - ✓ Make sure the DB15 Pin GPIO adapter is firmly attached onto the reader's GPIO interface ~



- ✓ Connect all antennas to the reader via antenna cables
- ✓ Install the "GAO Embedded Parking.msi" onto a regular Microsoft Windows based PC

The reader may take approx. one minute to boot up. At the first time of running and once it is booted successfully, the reader will automatically check the internal database status as well as the license issued by GAORFID Inc. And finally turns the 3rd LED on the relay board to the solid red status to indicate that the database file is missing ~





NOTE: In the future time, if the 3rd LED on the relay board is ON with solid red color, it means either the internal database on the reader is missing or corrupted, or the license code is NOT valid, users need to upload a new database file again by plugging with an regular USB stick that contains correct database file as well as correct license code.

III. License Importing:

In order to make the whole system up and running, users need to get an authorized/validated license file from GAORFID Inc per reader's unique MAC address info. The MAC address info could be found from the front panel of reader ~



Send this MAC address info to GAORFID Inc to get an validated license string. Then use the " *GAO Embedded Parking*" software to generate the database (please refer to the following chapters for details)

IV. Reader Parameters Management:

Start the " *GAO Embedded Parking*" from the host PC, go to the first tab of "*RFID Readers Management*", then fill in with correct parameters ~



Stand Alone Access Control System

\$ GAO Embedded Parking Server v1.0.2	_				X					
RFID Readers Management	RFID Tag Management	Import & Export								
Current GAORFID 236015 236018 RF										
MAC Address License	Power Level Anticol	lision Relay Toggle Period	Log File Length	Transaction File Leng	th					
Reader's MAC Address:		Reader Power L	evel (default 81 dB.	im):						
Reader's License:		Relay Toggle Ir	iterval (default 5 se	econds):						
Transaction File Length (default 50K bytes):	Log File Length	(default 200K byte	es):						
Anti-Collision Interval for	Same Tag (in Seconds):									
	Submit	Delete								
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Reader's MAC Address:

manually input the Hex-decimal formatted MAC address of the reader.

Reader's License:

Paste the license code issued by GAORFID Inc.

Transaction File Length:

The file length (in bytes) that will be used by the reader so that the reader is able to automatically transfer its history data onto the USB stick when the reader is working. For example, if the length is set to "**1000**", that means if the internal history data file hits its size of "**1000**" bytes, the reader will automatically copy the history file over to the USB stick so that users may use our server software to generate access reports, etc.

• NOTE: In order to make this feature work, an USB stick has to be attached on the reader via reader's "USB HOST" port.



Log File Length:

The file length (in bytes) that will be used by the reader so that the reader is able to automatically transfer its working logs onto the USB stick when the reader is working. For example, if the length is set to "**500**", that means if the internal log file hits its size of "**500**" bytes, the reader will automatically copy the log file over to the USB stick for the further analysis.

WNOTE: In order to make this feature work, an USB stick has to be attached on the reader via reader's "USB HOST" port.

Anti-Collision Interval for same tag:

The RFID reader is working under an continuous reading mode, this parameter is used to filter off those repeated data for a same tag with the interval. For example, if a new tag is approaching to the antenna zone, the reader will read it and process it, and for the next pre-set Anti-Collision interval (e.g. *5 seconds*), if the same tag is still read by the reader, the tag won't be processed at all until the tag re-enters again after the interval expires.

* Reader Power Level:

Indicate the power levels that the reader may take, the values range from **0** to **81** (dBm), the bigger value it is, the more reading distance.

* Relay Toggle Interval:

The relay close/open period in seconds.



V. RFID Tag Management:

🗢 GAO Embedded Parking Server v1.0.2											
RFID Reade	ers Management	RFID Tag Management	Import & Expo	rt							
Search for:	Tag ID 💿 First Name	🔘 Last Name		Clear							
Tag ID		Owner First Name Own	er Last Name Ac	tivation lime	Deactivation Time	Enable Disable					
Tag ID:		0 Owner First Name	:	Own	er Last Name:						
Activation Time	2016-10-05	Deactivation Time	2099-12-31	Enab	ele Disable:	Enabled 🔹					
	Copyright © GAORFID 2016										

Make sure all of fields are filled in correctly.

To register a new RFID tag, normally, there are three ways :

- 1. Manually key in the tag's EPC data
- 2. Import a tag list file in advance, then select it
- 3. Using GAO desktop USB reader to automatically scan a tag then output the data over to the "*Tag ID*" field.

• NOTE: If the tag is set to "Disabled", this reader won't do any action (e.g. trigger the relay to open/close, etc) when the tag is read.



VI. Import/Export

After all of tags info as well as reader's info have been successfully filled in, users can use this Import/Export to generate the database and copy the database over to a USB stick, then plug in the USB stick on to reader's USB HOST port, the reader will be able to automatically synchronize its existing internal database with the latest one in the USB stick.

