TOYE CORPORATION
ACCESS CONTROL SYSTEMS

LONG RANGE HANDS FREE VID READER

Reader Model AA-R500

AUTOACCESS™ VEHICLE ID READER

With An Adjustable Read Range From 6' to 400'

The AutoAccess™ Long Range Vehicle ID Readers are specifically designed for hands-free vehicle identification in fleet management, parking airports, gated communities, access control, and military base vehicle control applications.

The AA-R500 Vehicle ID Readers communicate with AutoAccess™ Tags capture the presence, identification and location of vehicles, assets, peop and alarm triggered events. They provide long range coverage for dynamic vehicle ID location, inventory management, and real-time personn mustering.

AutoAccess™ Vehicle ID Readers communicate with Access Control systems in standard 26-bit Wiegand format, or via a serial RS-232 or RS-485 protocol for custom software solutions, and they are also able to operate on a new or existing Ethernet LAN / WAN Network.

AutoAccess™ Vehicle ID Readers can simultaneously read multiple Tags at ranges up to 400', and can also register and report the disappearance or movement of individual tags. This is especially helpful in Vehicle management systems where a single AutoAccess™ Reader can monitor a number of tagged vehicles and report to a Host Computer or Access Control System any change of status of a specific tag and its associated vehicle.

FEATURES

- Simultaneous multiple-tag read capability
- Omni-Directional and Directional antennas
- Wiegand, Serial or Ethernet LAN protocols
- Small, lightweight, with low power draw
- AutoLocate. Dynamic Tag Tracking
- Low cost and easy to install
- Adjustable Tag read range 6' to 400'
- Secure Encrypted Transmission
- Guaranteed up to 3 year Battery Life
- TamperDetect™ Theft Prevention

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Long Range Hands-Free Vehicle ID Reader

(AA-R500WP - Wiegand 26 Bit) • (AA-R500SP - RS-232/485)

The AutoAccess[tm] Long Range Vehicle ID Readers are specifically designed for hands-free vehicle identification in fleet management, parking, airports, gated communities, access control, and military base vehicle control applications. The AA-R500 Vehicle ID Readers communicate with AutoAccess[tm] Tags to capture the presence, identification and location of vehicles, assets, people and alarm triggered events. They provide long range coverage for dynamic vehicle ID location, inventory management, and real-time personnel mustering.

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AutoAccess[tm] Vehicle ID Readers can simultaneously read multiple Tags at ranges up to 400', and can also register and report the disappearance or movement of individual tags. This is especially helpful in Vehicle management systems where a single AutoAccess[tm] Reader can monitor a number of tagged vehicles and report to a Host Computer or Access Control System any change of status of a specific tag and its associated vehicle.

FEATURES:

- **Simultaneous multiple-tag read capability**
- **Omni-Directional and Directional antennas**
- **Wiegand, Serial or Ethernet LAN protocols**
- **Small, lightweight, with low power draw**
- **AutoLocate[tm] Dynamic Tag Tracking**
- **Low cost and easy to install**
- **Adjustable Tag read range .5' to 400'**
- **Secure Encrypted Transmission**
- **Guaranteed up to 3 year Battery Life***
- **TamperDetect[tm] Theft Prevention**

APPLICATIONS:

- **Gated Communities and Apartments**
- **Surface and Underground Mines**
- **Bus and Transportation Companies**
- **Amusement and Theme Parks**
- **Employee Parking Lots**
- **Military Bases and Airports**
- **Airport Taxi and Shuttle Bus Control**
- **Trucking Companies and Fleets**
- **Rental Cars and Trucks**
- **Factory and Manufacturing Automation**
- **Hospital Doctor and Employee Parking**
- **Government Facility Vehicle Control**

SPECIFICATIONS:

Frequency:

Rx Frequency	433.92 MHz
ERP	500uW

Electrical:

Power requirement	12VDC – 14.5VDC, ±30mA

Environmental:

Operational temp	-40º F to +140º F
Storage temperature	-40º F to +158º F
Humidity	5% to 90% (non condensing)

Physical:

Size	3.3in x 1.6in x 0.7in
Weight	1.6 oz.
Color	Dark Grey (R-500) – White (R-500P)
Type of material	PVC (ultrasonically sealed) IP 65 rating
Input/Output Connectors	Two RJ45 Sockets for CAT 5 cable

ADDITIONAL ITEMS:

- **Read Range Programming Software and Cable -AA-CUSC**
- **Auto Rear View Mirror Hanger Tag Holder With Double Stick Tape--AA-MMHT**
- **Windshield Tag Holder With Double Stick Tape Tag Can be removed and re-inserted--- AA-MWTH**

Specifications and product availability subject to change without notice. Tag and reader communication distances assume optimal orientation between tag and reader. Read distances may also vary as a result of the presence of metal and environmental conditions.

* See Warranty policy for details

Hands-Free Long Range Vehicle Tags

AA-T100 Covert Antenna Tag • AA-T200 Windshield / Badge Tag • AA-T800 Metal Mount Tag
AA-T310 TamperDetect T100 Tag • AA-T320 TamperDetect T200 Tag • AA-T380 TamperDetect T800 Tag

The AutoAccess series of Radio Frequency Identification Tags permits hands-free employee access control, asset loss prevention, and positive long range vehicle identification for parking and fleet management. Tags can be used to identify and track vehicles, employees and valuable assets at airports, gated communities, trucking and bus terminals, employee parking lots, hospitals, industrial facilities, railroads, mines and military installations. Tag to Reader communication is encrypted to prevent Tag cloning, copying or emulation, making AutoAccess[tm] Tags ideally suited for high security situations. Tags employ an anti-collision algorithm that allows multiple Tags to be simultaneously identified by a single reader, allowing drivers to be matched to specific vehicles or forklifts, trucks matched to trailers, employees matched to individual laptops or assets, shipping pallets to merchandise, etc.
All AutoAccess[tm] Tags come standard with the AutoLocate[tm] feature, making them ideal for real-time inventory management, and for tracking assets and personnel as they move throughout a facility. The exclusive AutoLocate[tm] feature can also detect thieves attempting to remove "tagged" assets from a monitored facility by hiding them in a metal container, such as a toolbox or aluminum briefcase. TamperDetect[tm] Tags are available with sensors that can instantly detect that a Tag has been removed from an "authorized" asset and send an immediate alarm to an access control or security monitoring system. AutoAccess[tm] Tags are powered by an internal Lithium battery and transmit at the end-users custom pre-set time interval. This breakthrough technology allows the Tags to operate continuously for more than five years. An on-board battery life counter monitors Tag activity and can transmit it's condition every time a Tag is read. AutoAccess[tm] Tags are available in three sizes with various mounting devices for vehicles and assets, or can be worn as personnel identification badges. Depending on the application and Tag used, AutoAccess[tm] Tags can be easily identified by range adjustable "fixed location" or "portable hand-held" readers from .5' to 400' away and at speeds up to 300 MPH.

FEATURES:

- Reliable battery life - Low power consumption – Tags are guaranteed for up to 3 years.*
- Secure Encrypted communication between tags and readers.
- Anti-Collision algorithm allows identification of multiple tags simultaneously.
- ***TamperDetect*** tags can trigger alarm reports if removed from assets or vehicles.
- Adjustable Tag read range up to 400 feet or more.
- ***AutoLocate*** capability is standard in all tags.
- Optional tag programmer is available to custom configure tag numbers, transmission repetition rate, alarm functions, etc.

SPECIFICATIONS:

Environmental

Operational temperature: -40º F to +140º F Storage temperature: -40º F to +140º F
Humidity: 5% to 90% (non-condensing) – Custom packaging available for use in harsh environments

Physical

Size: 2.4in x 1.2in x 0.4in (AA-T100 Covert Tag) • 3.4in x 2.1in x 0.2in (AA-T200 Windshield/Personnel Tag)
Weight: 0.53 ounces
Color: Dark Grey
Type of Material: Ultrasonically sealed PVC - IP 65 rating

RF Specifications

Frequency: 433.92 MHz
Output Power: 300 microwatts

Range

AA-T200 Windshield / Personnel Tag with ***AutoLocate*** Up to 300 feet**
AA-T100 Covert Tag with External Antenna and ***AutoLocate*** Up to 400 feet**
AA-T800 Metal Mount Tag with ***AutoLocate*** Up to 200 feet**

* See Warranty policy for details
** Tag and reader communication distances assume optimal orientation between tag and reader. Read distances may also vary as a result of the presence of metal and environmental conditions.

AA-RADK Remote Directional Antenna Kit

General

The AA-RADK Remote Directional Antenna has a zero dBi gain and operates at 433.92 MHz. It has been designed for optimal RF receiving performance with the AutoAccess™ "AA-R500" Serial and Wiegand readers.

Features

While the standard rubber whip antenna supplied with the AA-R500 Readers has an Omni-Directional reception field, the AA-RADK Remote Antenna Kit is typically used for its unique directional properties. The AA-RADK reception field is of a hemispheric nature with a larger than 15 dB front to back ratio. The AA-RADK can be mounted on a flat surface (mounting plate is included) at a remote location from the reader (preferably less than 30 feet) with minimal cable dB loses, provided that a high quality cable is used.

The antenna can also be mounted inside a brick, stone or stucco column, behind dry wall or wood panelling, window or glass or other non -RF shielding materials. If desired, the antenna housing can also be sprayed painted with a non-metallic paint that do not contain metallic compounds.

The antenna is housed in a plastic mold that is UV resistant and can be used outdoors.

Applications

Typical Applications for of this antenna are best suited to applications where a directional RF reception field is required., I such as in security gate Access control systems, fleet Vehicle yard management, Parking lot control systems, and Container monitoring, etc.

Practical Example

In an open-air environment the following results were obtained using an AA-T200 Windshield Tag, AA-R500 Reader with AA-RADK Antenna. The antenna was mounted 6.5 feet above the ground, tilted 10° towards the ground plane. The following minimum and maximum reception distances of tags positioned upright around the antenna were recorded. These were adjusted by varying the range control on the reader:

Min Range	Max Range	Tag Position
10’	150’	0° (directly in front of the antennae face)
8’	100’	45º (to the side of the antenna face)
5’	50’	90° (in line with the antenna faceside of the antenna)
3’	15’	135° (slightly behind the antennae face)
Zero	10’	180° (directly behind the antenna face)

Notes:

1 The AA-RADK Remote Directional Antenna is supplied with a 3-foot length of coax cable terminated with a BNC (Male) connector. The coax cable is integrated directly into the antenna.
2 The input to the antenna has a DC short circuit providing continuous static discharge.
3 This antenna complements the existing standard AA-R500 Reader antenna range.

Mechanical Specifications

Size:	14.5 x 15 x .67 inches
Mounting Bracket:	Wall mount included
Finish	UV resistant front cover and UV resistant coating on rear
Mass:	£ 2 kg
Grounding:	The center conductor of the coax is DC grounded
Temperature Range:	-40 °C to + 70 °C