

## **Electronic Cargo Seals**

## SmartWatch™ SecureFreight Solutions

The need for secure freight management solutions has never been greater. Freight containers crossing U.S. borders from high-risk trade gateways, such as intermodal freight yards, rail yards, and land and sea ports of entry, must be identified and screened for risk, and the following information must be monitored:

- Where was it loaded?
- Who shipped it?
- When was it shipped?
- What should be in it?
- Where is it now?
- Was it sealed?
- Was the seal tampered with? If so, where?
- How, when, where, and by whom was it inspected?

This is critical information that must be gathered, analyzed, and shared with the trade regulatory agents, both in the United States and along our borders.

TransCore has responded to this challenge proactively by creating the SmartWatch™ SecureFreight system, which is part of TransCore's SmartWatch framework of security-focused solutions that feature the integration of radio frequency identification (RFID) and other advanced technologies to enhance both efficiency and security of ground transportation systems.



TransCore's SecureFreight system combines its RFID technology with mechanical seals to create electronic seals (e-seals). These seals provide primary risk screening capabilities to give information about who, what, where, when, and how the freight container was shipped and whether it has been opened or breached illicitly.

TransCore is a leading systems integrator evaluating the performance of e-seals and providing test results to the government, including the U.S. Customs Service (USCS) and the U.S. Department of Agriculture.

### ***INTEGRATING SECURE FREIGHT MANAGEMENT TECHNOLOGY***

TransCore has successfully integrated existing public- and private-sector freight-management elements with its systems engineering expertise to develop specialized systems featuring:

- Sensors, based on RFID technology, that provide location (AVI) and container status (e-seals) to monitor the security and movement of trade transactions through trade gateways by positively identifying the vehicle and associated container and monitoring the security status of the container
- The monitoring of freight movement throughout a region via weigh station AVI reports from the Commercial Vehicle Information System and Network (CVISN)



- Electronic reports and trend analyses that identify high- and low-risk participants and provide detailed freight movement information
- A system to monitor the movement of containerized, in-bond freight transactions and electronic closing of in-bond transactions in the USCS Automated Manifest System (AMS) and the carriers' information management systems
- A secure Internet and website ([www.transcorridor.com](http://www.transcorridor.com)) for interchange of freight management system information between the public- and private-sector stakeholders

**SECURE RISK MANAGEMENT**

As containerized freight enters the secure freight management system, a methodology must be established to allow containers to be inspected, sealed, preprocessed, and prescreened in a minimum amount of time to avoid long lines at busy trade gateways. An end-to-end secure risk-management system must be implemented that will positively identify people, vehicles, cargo, containers, and the security status of the containers. This system must be automated, effective, user friendly, and low cost. A freight management system must focus on high-risk transactions and provide rapid, efficient screening and processing of the low-risk transactions.

**TRANSCORE'S SECURE FREIGHT MANAGEMENT PROJECTS**

TransCore has implemented projects that use SmartWatch technologies to monitor the secure movement of trade goods along our highways and across our borders. These deployed and operational freight management systems form the basis for the future SmartWatch pilot projects, which will greatly enhance the security and efficiencies of freight movements throughout North America. These projects include:

**Northwest International Trade Corridor**

Phase 1 of this project is an operational, chain-of-custody freight management system along the Seattle – Vancouver, BC trade corridor. The system uses a combination of AVI sensors, e-seal sensors, and the Internet to integrate information for the regional public- and private-sector freight-handling stakeholders. The system collects AVI and e-seal sensor detection reports and information regarding the correlation of vehicles with containers, USCS AMS data, and in-bond transactions. The system integrates this data to monitor the movement of containerized in-bond freight out of the ports of Tacoma, WA and Seattle, north along I-5, and through the USCS commercial vehicle-processing facility into Canada. The system then closes in-bond transactions that leave the United States and tracks transaction travel times from port to border.





The freight data collected by the Trade Corridor Operations System Data Center, which serves as the area’s service center, is distributed via an Internet-based communications network and website ([www.transcorridor.com](http://www.transcorridor.com)).



Phase 2 will monitor the movement of containerized, in-bond freight out of Canada, south through the USCS commercial vehicle processing facility, along I-5, and into the ports of Seattle and Tacoma. Phase 2 will also provide the regional Canadian Customs and Revenue Agency (CCRA) access to the Phase 1 and 2 trade-corridor information for their evaluation, potentially expanding use of this data-sharing capability in the future.

Phase 3, in the planning stages now, will encompass the use of biometrics, extending the positive identification of the trade transactions by identifying the driver. This driver ID functionality will also be used for secure entry/exit of vehicles from the ports.

**Free and Secure Transport (FAST)**

The U.S. Customs Service, teamed with TransCore, deployed and currently operates the FAST (formerly the National Customs Automation Prototype – NCAP) processing system at the Ambassador Bridge, the Detroit-Windsor trade gateway. This program preprocesses select shipments of auto parts coming into the United States. The program detects and identifies specific cargo and vehicles using TransCore’s AVI systems. By prescreening and positively identifying trusted auto parts shippers, the movement of freight across the U.S.-Canadian border is expedited, thus allowing fast, secure, safe, and legal shipments.

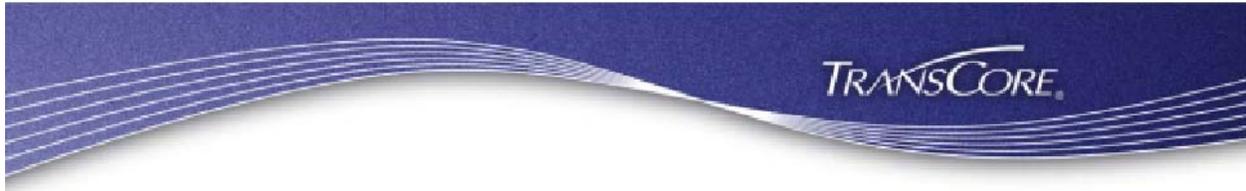
**North American Trade Automation Prototype (NATAP)**

This program was the first field operations test of the International Trade Data System run by the U.S., Canadian, and Mexican customs agencies. This International Trade Data System-Automated Customs Environment (ITAS-ACE) will eventually process all international trade in to and out of the country. TransCore was responsible for the original design of the NATAP system. TransCore designed and deployed the NATAP system at the Ambassador Bridge in Detroit and the Peace Bridge in Buffalo, NY.

**POTENTIAL SECURE FREIGHT MANAGEMENT SYSTEM PILOT PROJECTS**

TransCore continues to work with both public- and private-sector stakeholders to enhance the secure, safe, efficient, and legal movement of goods throughout our borders. Developing projects include:

- **Container security system (Seattle – Vancouver, BC)** As an evolutionary component of the Northwest Trade Corridor, this project will expand the current system to include additional container information, such as security status, travel time, route deviations, positive driver ID, and imports and exports for both the USCS and CCRA.



- **ITS / CVO processing system (Otay Mesa, CA)** TransCore is the systems integrator responsible to design, develop, and deploy a technology demonstration project to integrate the trade, vehicle, and driver processing through customs, immigration, and safety facilities at Otay Mesa. This integrated processing system will accommodate changes in the way freight passes through the Otay Mesa region. The project's objective is the validation of a processing system that will enhance border and freight movement security.
- **Detroit – Buffalo trade corridor** TransCore developed a functional concept for this SmartWatch border trade corridor system, which brings to this region the current benefits of the SecureFreight system deployed in the Northwest Corridor.
- **Pacific Rim international trade corridor** TransCore developed a functional concept and freight management system architecture to integrate the critical freight processing facilities deployed along I-5 from Vancouver, BC to Ensenada, Mexico. The concept is designed to accommodate the secure, efficient, safe, and legal movement of freight from Canada to Mexico on our western border.

***TRANSCORE'S CONTRIBUTION TO FREIGHT STANDARDS***

TransCore has contributed extensively to such international standards as the American National Standards Institute (ANSI) and International Standard Organization (ISO) standard for freight container RFID as well as the Association of American Railroads (AAR) standard for rail car RFID asset tracking.



***TRANSCORE IS THE RIGHT CHOICE***

TransCore provides technology-based services and products that enable its customers to efficiently manage ground transportation systems, assets, and transactions. With a world-class ISO 9001-certified design, development, and manufacturing center and more than 80 patents, TransCore's expertise in providing solutions that improve transportation efficiency and security is unparalleled. For more information on the SecureFreight application, e-mail a request to [securefreight@transcore.com](mailto:securefreight@transcore.com). Application profiles on additional SmartWatch security-focused solutions are found at [www.transcore.com/smartwatch](http://www.transcore.com/smartwatch).



For more information call: 1.800.923.4824 or 972.387.8197, or fax 972.733.6486.

[www.transcore.com](http://www.transcore.com)

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## CONTACT BUTTON MEMORY



CGM, SECURITY SOLUTIONS, INC. presents the Patented Button Memory Seal system, a unique method of maintaining and updating asset information as part of a container or trailer sealing system.

Contact Memory Buttons (CMB) are rugged, battery-free, updateable data storage devices. They exceed MilSpec 810E. They can operate error free for 40 additional years with each touch. Our memory buttons operate for unlimited reads and 1 million write cycles, typically making them outlast the asset they are affixed to.

As compact as the eraser on a pencil, CMB range in size from 5.6mm (shirt button size) to 28.6 mm (around the size of a thumbprint), and can carry as much as 8MB. Each CMB is assigned a non-changeable unique serial number. When attached to an asset or location buttons serve as both an identifier and an updateable logbook for the specific asset (or location). CMB allows an asset to be tracked electronically eliminating time spent on hand data entry and human error.

When applied to a sea container and then to a Navalock MKIIB cable, you have the ability to correlate the seal to the container (box) while allowing the memory button to fill out all necessary documents error free. Ports can use the button to check contents for incoming freight. Buttons help comply with the 24 hour rule as no further time on task is needed to re-write bills of lading data or correlate container contents!

Cost saving in paperwork benefit carriers, ports, shippers and receivers and save far more in labor than the cost of the button and lock combination!

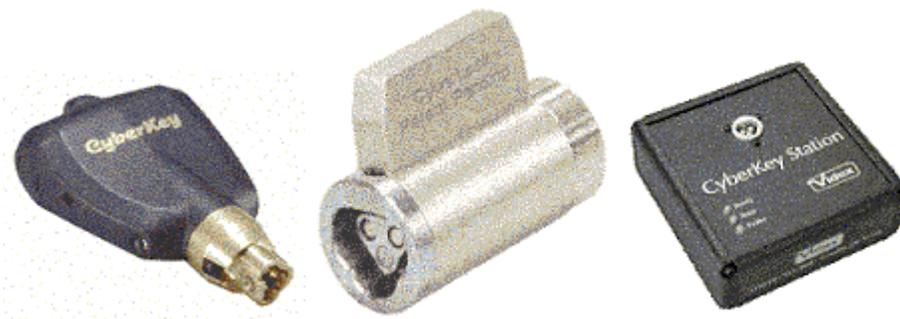
The CMB is a battery free, read/write tool designed for survival in extreme environments including military; aerospace, utility, transportation, and industrial applications. Compact and inconspicuous, CMB is easily attached to your property, and enables you to simply and clearly manage the tracking, inspection, recovery and maintenance of your assets.

Button Memory is easily read or updated with the ButtonLink, the ButtonLaser, or the Graphic Button Reader. The ButtonLink easily connects to any standard laptop or PC, as well as a range of handheld PDAs. Buttons use NO proprietary software and work in a simple Windows environment. They will operate with any standard PDA. The ButtonLink probe is touched to the CMB and the data is transferred electronically to your PC, PDA or whichever device you prefer. Any device with a USB or Parallel port will support the use of memory buttons. Writing to the button is just as easy, simply update the information and touch the probe to the button again to refresh the data. The ButtonLink can read a 32K CMB in less than 2 seconds with a USB interface, rendering time-consuming hand-written records obsolete.

CMBs can also be read with the ButtonLaser, CGM's own multifunctional, palm-sized portable data collector or the graphic ButtonReader. The ButtonLaser allows you to read/write data to and from the CMB. It also enables buttons and barcodes to be used interchangeably in the same application giving you the flexibility to select the most appropriate identification technology for your needs. ButtonLaser can be programmed with MacSemas easy to use Hierarchy Application Generator or build your own customized applications. The ButtonReader supports CMB applications as well, it is designed for ease of use, allowing you to read/write data, scroll through existing information, and allows for copied data to be easily transferred to your PC.

The Contact MemoryButton technology has been successfully tested using rigorous military standards. ButtonMemory systems are designed to take full advantage of off the shelf software, allowing integration with industry standard hardware platforms. Password protection and data encryption are designed into the system for even more assurance. MemoryButton technology is a significant advance in the way asset data is contained and transported, and offers users the infinite opportunity to improve the quality, accuracy and availability of data.

## CYBER LOCK ELECTRONIC KEY SYSTEM



### PRODUCT AND TECHNOLOGY OVERVIEW

CGM Security Solutions now offers the Cyber Lock which is an innovative lock cylinder system that easily converts existing mechanical locks into fully functional, PORTABLE and locking access control systems.

- CyberLock electronic cylinders replace standard mechanical cylinders in both portable and fixed locks such as padlocks and door locks.
- No wiring or battery is required at the lock as the power source is in the key and at docking stations
- The keys cannot be duplicated and they are unique to the user.
- Re-keying is eliminated as a key can be simply reprogrammed therefore losing a key costs you the value of the key rather than the value of a complete system or replacement of all mechanical locks on the system.
- Each key can be variably programmed with a list of the locks it can open, at specific dates and times and if multiple keys are required to open that lock, the Cyber Lock can be programmed with up to 4 keys needed for an opening.
- All keys and lock retain information on who opened them, when and for how long.
  - Keys can be assigned a begin date and an expiration date
  - An audit trail is recorded in both the locks and the keys, which is then uplinked to software through fixed or portable docking stations.
  - One key opens doorways, cabinets, padlocks, cash drawers, and vending machines.
  - They also capture unauthorized attempted openings.

The CyberLock cam lock can also be installed in file cabinets, secured doors and drawers. The 6-pin and IC cylinders install in any padlocks and cabinet locks, and the T-handle cylinders in vending machines, making the system both versatile and user friendly

The Cyber Lock is designed for both indoor and outdoor applications. Lock choices and use environments make the technology flexible enough for the harshest settings. The durable Cyber Lock tracks and controls access to outside entrances, gates, computer rooms, padlocked items, cash drawers, jewelry cases, freight trucks, ignitions and vending cash collection routes.

#### Dual Audit Report

A log of each access event--user ID, date, and time--is stored in both the lock cylinder and the user key, providing a comprehensive history of every use. The cylinder stores the most recent 1100 access events, and the key stores the most recent 1150 events. These access events are transferred to the computer using the CyberKey base station, which connects to the serial port of the PC.

#### CyberAudit Software--Easy!

CyberAudit software for the PC is your tool for creating your access control system. Manage locks and keys, define user access privileges, create master keys and reset keys, and view a log of audit events from your PC. You can even keep a file of information on each key holder in your system. Program information is sent from the PC to the locks and keys in your system using the CyberKey base station.

#### Sample Data

##### High-Security Features

The CyberLock hardware includes many advanced design features to ensure your security. Since there is no keyway in the lock, it cannot be picked like a mechanical lock. The cylinder resists blows and forced rotation, and remains in the locked position if vandalized.

CyberAudit software also provides high-security features. A lock can be set to require more than one authorized key before it will open. A list of blocked keys can be stored in each cylinder for when a key is lost or stolen, eliminating re-keying. A reset key allows you to electronically reset the passwords in your locks and keys if the security of your system is compromised. And, you can define expiration dates for each key for additional key control or to provide temporary access.

The Cyber access Control system requires proprietary software in a standard network. Cyber systems are hard wired for the access control portion. Please call for prices and available designs.

## SENTRY SENSOR



The Sentry Sensor is an electronic data logging and door monitoring seal. This sensing system operates covertly within any metal, wood or plastic enclosure. It can be electronically monitored for surreptitious openings of the enclosure from up to 500 yards away. The enclosure can be a sea freight cargo container, rail car, truck body, tote or other specially designed enclosures typically used for containment of cargo during transit. Additionally, due to the portability of the system, it may be used for room sweeps, warehouse door monitors, cargo storage cages, electrical switch boxes, manhole covers or any application where entry or exit through a doorway needs to be monitored. The unit can retain up to 250 events in its memory per use and the simple user friendly software operates in a windows environment.

The system gives users the ability to customize the door seal component for each user by programming a unique number into it prior to installation. The seal is activated when the door is shut creating a secure environment for the enclosure as it moves through transit. Once activated, the sensor will monitor, log, and transmit all openings, temperature variations and other default information to a receiving unit.

All loggers, door seals, and receiving units are interchangeable and each individual is battery operated. The logger is programmed to shut down when not receiving a signal from the seal or the inspection device, allowing the battery to operate for up to eight months.

Once the system is activated as a result of an opening, the unit will record the event for later monitoring. Optionally, it will call the user via an internal cell phone to advise you of the event in real time. It can also interface with an onboard GPS unit to report the position of the vehicle upon opening. No data can be changed and no software exists that allows data to be corrupted or falsified.

When the enclosure arrives at its destination and prior to accepting the cargo in good order, the recipient can easily monitor it for openings from the outside of the container. Once the logger is recovered, the historical information can be downloaded and retained for evidence. If the interrogation unit reflects an opening, it responds with the word ALARM. If the unit has been removed from the enclosure the inspection unit shows NO SIGNAL RECEIVED. If the enclosure is unopened and secure the response is NO FAULTS FOUND.



## Leghorn Suppliers srl

49, Via G.B. Guarini - 57121 Livorno Tuscany Italy  
T. +39 0586 406376 F.+39 0586 407621  
[www.precintosdeseguridad.com](http://www.precintosdeseguridad.com) [info@containerseals.net](mailto:info@containerseals.net)



Security seals for all Industries and Transports, international forwarding and logistic, Container seals,

Barcode seals, Security seals for ocean carriers, container transports, rail, trucks, trailers

### C2K

Records: closure, time elapsed and  
time since opening

Displays time between one opening and other.  
Gives unquestionable answer of tampering.  
An ingenious mix of physical security with indicative sealing.

Four digit unpredictable seal number when locked.

Heavy duty padlock.



A high grade Padlock with built in ELECTRONIC Seal.

**ELECTRONIC module life of 1000 seal = 3 years.**



## CORPORATE SECURITY SUPPLY LTD.

891 Century Street, Unit D Winnipeg, MB R3H 0M3  
Tel (204)989-1000 Fax (204)989-1010  
email: sales@corporatesupply.ca

**www.corporatesupply.ca**

**1-800-563-5566**

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### ***Bolt / Cargo Seals***

The ABRIC range of barrier seals are high security bolt seals which complies with both the UK and USA customs class 1 requirements for dutiable goods. Barrier seals are widely used in securing cargo containers of sensitive and high value products in the shipping, airline, rail and trucking industries against theft and pilferages.

#### **■ UnoLock**

- The UnoLock can withstand a pull-load of up to 1,000kg
- The pin and barrel comes with matching numbers for greater security control.



#### *Design Features*

The inner barrel with serial number inscription is encapsulated in a transparent outer case.

The pin is made of non-rusting steel shaft coated in plastic and the entire plastic enclosure for the barrel and pin is made of hard durable plastic to provide evidence of any attempts of tampering.

The pin and barrel come with matching serial numbers for tighter security control.

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### ***Nanoseal***

#### *The Miniature Reusable Electronic Security Seal*

**Benefits:** The miniature Reusable Electronic Security seal that records elapsed time between sealing and opening. Increased security with unforeseen random numbers. Time management information which identifies opening and closing

**Features:** Permanently displays a seal number on easy to read LCD  
Elapsed time shown in Days/Hours/Minutes Strong nylon beaded security cord is user replaceable. Rugged impact resistance case Reusable 1,000 times Shows last seal number when OPEN and elapsed time since opening

**Applications:** Courier Bags, Roll cages, Drums, Tote Boxes, Trucks, Hospital Drug Cabinets



# THE DATASEAL™ DISTRIBUTION CARGO SECURITY SYSTEM



ENHANCED INVENTORY CONTROL



DEPENDABLE TAMPER PROTECTION



POINT-TO-POINT CARGO TRACEABILITY



# TYDENTEK™ PROTECTS AND MONITORS YOUR CARGO EVERY STEP OF THE WAY.

Today's shipments need more than mere protection. They need rugged, reliable, tamper-proof safeguards, security verification, and information tracking capabilities. TydenTek's new DataSeal Electronic Cargo Security System gives you the protection you can trust.

The DataSeal System includes:

- a built-in electronic seal (two models),
- an outdoor data reader,
- a handy micro seal reader, and
- a hand-held data terminal.

Together, they become a flexible, easy-to-use, cost-effective cargo protection and tracking tool. The DataSeal can be encoded and read only by the owner. Once applied, the DataSeal cannot be replicated or interfered with by outside sources. Once activated, the data is logged and a unique electronic stamp is established for that particular seal. The system allows you to sectionalize a

tampering event at any point along your distribution chain, saving significant time and resources if an investigation is necessary.

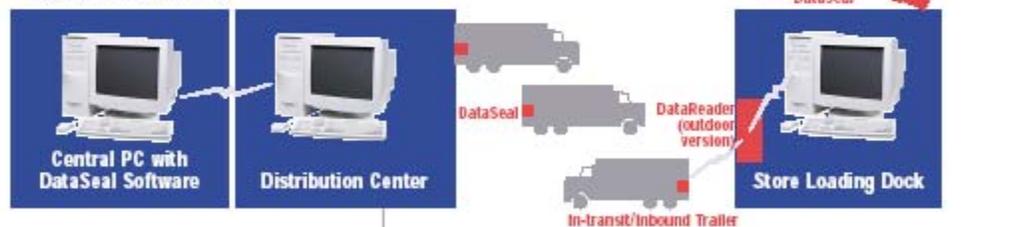
The DataSeal System uses state-of-the-art RFID and data-encryption technology to provide virtually impenetrable protection. The reusable seal stores event data such as the time and date of a tampering event along a delivery route. This data can then be read remotely (either short or long range) and downloaded to a central computer or field laptop for storage and processing.

A powerful deterrent to theft and tampering, the DataSeal System enhances operational control and data management efficiency. It's easy to set up the system and easy to use. It eliminates the need for complicated and costly visual inspections and manual data registration. It saves shipping and inventory time.

And it provides highly reliable cargo protection and verification you can trust.

## Typical Distribution Center/Store/Security System Configuration

- Outbound trailer seal is set by authorized store personnel
- Outdoor reader communicates with trailer-mounted seal as inbound vehicle approaches verifying tamper or set state
- Trailer seal history maintained at internal facility PC
- Master control monitored/updated with overall seal event activity and history
- Detached trailers can be actively monitored for tampering while left unattended at store locations



### D<sup>3</sup> DataSeal™

- Easily and securely mounted on trailer
- Tamper-proof
- Generates date and time stamp
- Generates a unique seal ID code
- Reusable
- Provides instant, real-time tamper verification
- Long-lasting 3-volt lithium battery
- Splash-proof, high-impact plastic construction
- 1,000-event usage capacity
- 55-event seal memory
- Enhanced seal offers
  - Programmability
  - User-defined memory
  - Dual frequency
  - Long-range reading



### DataReader (outdoor version)

- Easy to securely mount on shipping/receiving facility
- High frequency
- Available in country-specific frequencies



### Hand-Held Terminal (HHT)

- Provides comprehensive sealing details of every opening and closing
- Provides exact time and duration of each opening and closing event
- Data can easily be downloaded to a central computer or field laptop



### MicroReader

- Convenient, easy-to-use, key-fob style
- Provides short-range remote reading up to 2 ft. (60cm)
- Provides instant seal verification
- Reads seal through exterior packaging
- Also available with read-only capability

# DEPENDABLE PROTECTION FOR VIRTUALLY ANY APPLICATION.

## FOOD DISTRIBUTION



Distributing food and groceries can be a complicated task. Food product safety and integrity needs to be maintained and verified. Pilfering and tampering can be a serious problem. Drivers need to maintain accountability for their time schedules and load security. Rail and truck shipments require billing and invoicing procedures. DataSeal puts an easy-to-use system into place that allows you to protect your shipments, create audit trails of driver activity, and increase inventory control.

## CLOTHING AND APPAREL



Designer clothing. Tennis shoes. Valuable furs. Popular trademarked goods. They're all very desirable and very vulnerable targets for thieves. DataSeal allows you to seal trailers at their point of origin and record every opening and closing event along their route. It allows you to verify that the contents you ship are the exact contents that arrive at their point of destination.

## ELECTRONICS AND COMPUTERS



The DataSeal system allows you to pinpoint any tampering event along your distribution channel. This can greatly facilitate investigation and insurance procedures in the event of a problem. Although DataSeal is a sophisticated electronic security system, it is also extremely durable and can withstand the rigors of over-the-road transit, harsh weather conditions, rough-handling situations, and more.

## LIQUOR AND TOBACCO



Regulated substances such as liquor and tobacco make attractive targets for thieves. Besides pilfering, there are important legal and tax considerations for shippers to deal with. Now you can protect the integrity of each and every truckload, provide for driver accountability, monitor unattended sealed trailers at distribution centers and stores, and streamline inventory tracking with DataSeal.

## LESS-THAN-LOAD SHIPPING



Partial loads, combined client loads, multiple delivery points, and insurance risks are complicated challenges for any shipper. DataSeal allows you to increase cargo trackability, streamline shipping procedures, verify trailer contents, monitor transit times between distribution points, and keep tabs on driver timetables to improve productivity. The monitoring capabilities of the DataSeal system also assist your drivers in providing accurate information that quickly identifies the time and place of the tampering event.

## THE APPLICATIONS ARE ENDLESS

The DataSeal Electronic Cargo Security System is more cost-effective than conventional non-electronic seals. It can be read manually, provides real-time tampering information, and doesn't require specific tools to apply, remove, and re-apply all along your shipment route. The DataSeal System is available in two versions, both short and dual range. TydenTek can work with you to provide the ideal, easy-to-install electronic system for your specific application. Count on the DataSeal Electronic Cargo Security System for reliable, reportable, reuseable cargo integrity.

**Contact TydenTek today for more information: +630-875-0047**

**Active DataSeal™  
125 kHz  
IG-SAM-125**



**IG-SA-125**



**Hand-Held Terminal  
125 kHz  
IG-MA-22**



**Hoker  
(open-face  
version)**



Physical Characteristics	
Dimensions (in)	1.93 x 1.57 x 0.79
Weight (gr)	90
Power Requirement (volts)	3.6 internal battery
Events Memory	98
Performance Characteristics	
Operating Frequency (kHz)	125
Read Range (ft)	23.62 (with HHT); 3.94 (with MicroReader)
Environmental Conditions	
Operating Temperature (C)	-20 – +70
Storage Temperature (C)	-20 – +70
Humidity (%)	90 non condensing
Mechanical Vibration	As per MIL-810D & SAE J1455
Mechanical Shock	As per MIL-810D & SAE J1455
Standards	
	FCC PART 15

Physical Characteristics	
Dimensions (in)	3.94 x 6.27 x 1.77
Weight (gr)	500
Power Requirement	4 x AA size 1.5-volt alkaline batteries
Events Memory	190 @ normal mode; 120 @ extended mode
Performance Characteristics	
Interface	RS-232
Operating Frequency (kHz)	125
Read Range (ft)	23.62
Environmental Conditions	
Operating Temperature (C)	0 – +50
Storage Temperature (C)	-20 – +70
Humidity (%)	50 non condensing
Mechanical Vibration	Hand carried
Mechanical Shock	Hand carried
Standards	
	FCC PART 15

Physical Characteristics	
Dimensions (in)	4 x 2.75 x 1.75
Weight (gr)	30
Environmental Conditions	
Operating Temperature (C)	-40 – +70
Storage Temperature (C)	-40 – +70
Humidity (%)	90 non condensing
Mechanical Vibration	As per MIL-810D
Mechanical Shock	As per MIL-810D

**D<sup>3</sup> DataSeal™  
IG-RS-40M-916**



**IG-RS-40-916**



**DataReader  
(outdoor  
version)  
IG-RS-46D-916**



**Hoker  
(closed-face  
version)**



Physical Characteristics	
Dimensions (in)	1.93 x 3.35 x 1.46
Weight (gr)	100
Power Requirement (volts)	3.6 internal battery
User Memory (bytes)	2,048
Events Memory	55
Performance Characteristics	
Operating Frequency (MHz)	916.5
Read Range (ft)	98.4 @ open space
Operating Frequency (kHz)	125
Read Range (ft)	19.69
Environmental Conditions	
Operating Temperature (C)	-40 – +70
Storage Temperature (C)	-40 – +70
Humidity (%)	90 non condensing
Mechanical Vibration	As per MIL-810D & SAE J1455
Mechanical Shock	As per MIL-810D & SAE J1455
Standards	
	FCC PART 15
Antenna Characteristics	
Beam Divergence	Omni directional on non-metal wall, hemispherical on metal wall
Polarization	Vertical

Physical Characteristics	
Dimensions (in)	7.68 x 6.5 x 3.74
Weight (gr)	1,000
Power Requirement (volts)	24 Vdc external
Performance Characteristics	
Interface	RS-485 isolated (RS-232 optional)
Operating Frequency (MHz)	916.5 (others available)
Read Range (ft)	98.4 @ open space
Environmental Conditions	
Operating Temperature (C)	-40 – +70
Storage Temperature (C)	-40 – +70
Humidity (%)	90 non condensing
Mechanical Vibration	As per MIL-810D
Mechanical Shock	As per MIL-810D
Standards	
	FCC PART 15.249

Physical Characteristics	
Dimensions (in)	5 x 5 x 1.75
Weight (gr)	45
Environmental Conditions	
Operating Temperature (C)	-40 – +70
Storage Temperature (C)	-40 – +70
Humidity (%)	90 non condensing
Mechanical Vibration	As per MIL-810D
Mechanical Shock	As per MIL-810D



900 Arlington Heights Road  
Suite 170  
Itasca, IL 60143, USA

Tel. +630-875-0047  
Fax +630-875-0048  
[www.tydenetek.com](http://www.tydenetek.com)

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# THE DATASeal™ CUSTOMS PROCESSING SECURITY SYSTEM



IMPROVES CARGO SECURITY



ENSURES CARGO TRACEABILITY



SPEEDS CUSTOMS PROCESSING



# DATASeal™ PROVIDES ACCURATE, REAL-TIME CARGO VERIFICATION.

Millions of pounds of goods travel across international borders every day. Processing those goods through customs can be complicated and time-consuming.

But it doesn't have to be.

And theft can be a problem all along the way.

But it doesn't have to be.

Now cargo can be protected. Shipments can be easily verified. And the customs process can be streamlined, all with TydenTek's new, rugged, reliable, easy-to-use DataSeal Electronic Cargo Security and Verification System.

The DataSeal System includes:

- a rugged electronic seal (two models),
- an outdoor data reader, and
- a hand-held data terminal.

Together, they become a flexible, easy-to-use, cost-effective cargo protection and verification tool. The DataSeal can be encoded and read only by the owner. Once applied, the DataSeal cannot be repli-

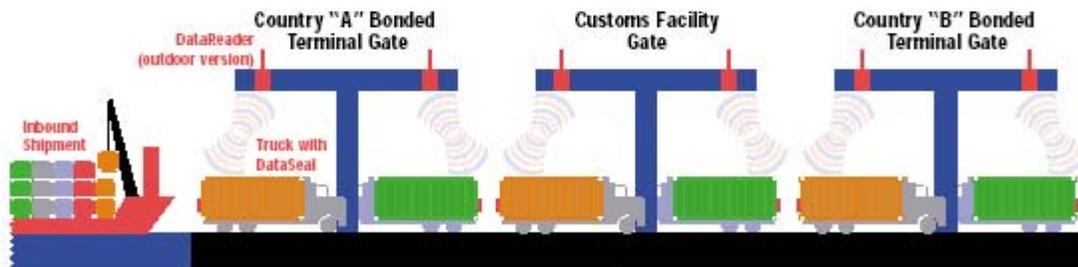
cated or interfered with by outside sources. Once activated, the data is logged and a unique electronic stamp is established for that particular seal. The system allows you to sectionalize a tampering event at any point along the customs processing chain, saving significant time and resources if an investigation is necessary.

The DataSeal System uses state-of-the-art RFID and data-encryption technology to provide virtually impenetrable protection. The reusable seal stores event data such as the time and date of a tampering event along the shipping route. This data can then be read remotely (either short or long range) and downloaded to a central computer or field laptop for storage and processing.

The DataSeal System enhances operational control and data management efficiency. It's easy to set up the system and easy to use. It eliminates the need for complicated and costly visual inspections and manual data registration. And it saves shipping, inventory, and customs processing time.

## Typical Customs Location Configuration

- Shipment arrives at port
- Goods and containers enter inbound bonded facility
- Container travels to customs inspection
- Cargo is transported from customs to outbound bonded facility



### D<sup>3</sup> DataSeal™

- Easily and securely mounted on container
- Tamper-proof
- Generates date and time stamp
- Generates a unique seal-ID code
- Reusable
- Provides instant, real-time tamper verification
- Long-lasting 3-volt lithium battery
- Splash-proof, high-impact plastic construction
- 1,000-event usage capacity
- 55-event seal memory
- Enhanced seal offers
  - Programmability
  - User-defined memory
  - Dual frequency
  - Long-range reading



### DataReader (outdoor version)

- Easy to securely mount on customs facility
- High frequency
- Available in country-specific frequencies
- Long-range reading



### Hand-Held Terminal (HHT)

- Provides comprehensive sealing details of every opening and closing
- Provides exact time and duration of each opening and closing event
- Data can easily be downloaded to a central computer or field laptop
- Short-range reading

# DEPENDABLE PROTECTION FOR VIRTUALLY ANY BORDER CROSSING APPLICATION.

## CUSTOMS AUTHORITIES



DataSeal lets you instantly and accurately verify the integrity of incoming cargo seal integrity. It quickly gives you information that cargo coming through your facility has not been opened and tampered with. This allows you to dramatically improve the reliability and speed of processing goods through customs, saving time, personnel, and headaches. If there is a tampering event, the DataSeal System allows you to identify at what point along the shipping route an opening/closing event occurred.

## BONDED TERMINALS



The DataSeal System provides positive proof that goods were secure while in your possession. This processing data can significantly increase customs through-put, improve your operational productivity, and protect you in the event of a tampering irregularity. DataSeal puts an easy-to-use system into place that allows you to protect the cargo in your possession, create audit trails of driver activity, and increase inventory control.

## SHIPPERS, FREIGHT AGENTS, CONTAINER COMPANIES



Time spent in customs is dead time. The DataSeal System lets customs officials know that your containers have not been opened in transit, which can greatly speed customs processing time. DataSeal also provides important protection against theft all along the shipping route, allows you to monitor transit times between distribution points, and allows you to keep tabs on driver timetables to improve productivity.

## MANUFACTURERS, POSTAL SERVICES, PACKAGE-DELIVERY SERVICES



DataSeal allows you to seal containers at their point of origin and record every opening and closing event along their route. It allows you to verify that the contents you ship are the exact contents that arrive at their point of destination. This can greatly speed customs processing time and aid in investigation and insurance procedures in the event of a problem. Although DataSeal is a sophisticated electronic security system, it is also extremely durable and can withstand the rigors of transit, weather conditions, rough-handling situations, and more.

## PROTECTION YOU CAN TRUST— VERIFICATION YOU CAN COUNT ON

The DataSeal electronic system is more cost-effective than conventional non-electronic seals. It can be read manually, provides real-time tampering information, and doesn't require specific tools to apply, remove, and re-apply all along your shipment route. The DataSeal electronic security system is available in two versions, both short and dual range. TydenTek can work with you to provide the ideal, easy-to-install electronic system for your specific applications.

**Contact TydenTek today for more information: +630-875-0047**

**Active  
DataSeal™  
125 kHz  
IG-SA-125**



Physical Characteristics	
Dimensions (In)	1.93 x 1.57 x 0.79
Weight (gr)	90
Power Requirement (volts)	3.6 Internal battery
Events Memory	98
Performance Characteristics	
Operating Frequency (kHz)	125
Read Range (ft)	23.62 (with HHT); 3.94 (with MicroReader)
Environmental Conditions	
Operating Temperature (C)	-20 – +70
Storage Temperature (C)	-20 – +70
Humidity (%)	90 non condensing
Mechanical Vibration	As per MIL-810D & SAE J1455
Mechanical Shock	As per MIL-810D & SAE J1455
Standards	
	FCC PART 15

**Hand-Held  
Terminal  
125 kHz  
IG-MA-22**



Physical Characteristics	
Dimensions (In)	3.94 x 8.27 x 1.77
Weight (gr)	500
Power Requirement	4 x AA size 1.5-volt alkaline batteries
Events Memory	190 @ normal mode; 120 @ extended mode
Performance Characteristics	
Interface	RS-232
Operating Frequency (kHz)	125
Read Range (ft)	23.62
Environmental Conditions	
Operating Temperature (C)	0 – +50
Storage Temperature (C)	-20 – +70
Humidity (%)	50 non condensing
Mechanical Vibration	Hand carried
Mechanical Shock	Hand carried
Standards	
	FCC PART 15

**Holder  
(open-face  
version)**



Physical Characteristics	
Dimensions (In)	4 x 2.75 x 1.75
Weight (gr)	30
Environmental Conditions	
Operating Temperature (C)	-40 – +70
Storage Temperature (C)	-40 – +70
Humidity (%)	90 non condensing
Mechanical Vibration	As per MIL-810D
Mechanical Shock	As per MIL-810D

**D<sup>3</sup> DataSeal™  
IG-RS-40-916**



Physical Characteristics	
Dimensions (In)	1.93 x 3.35 x 1.46
Weight (gr)	100
Power Requirement (volts)	3.6 Internal battery
User Memory (bytes)	2,048
Events Memory	55
Performance Characteristics	
Operating Frequency (MHz)	916.5
Read Range (ft)	98.4 @ open space
Operating Frequency (kHz)	125
Read Range (ft)	19.69
Environmental Conditions	
Operating Temperature (C)	-40 – +70
Storage Temperature (C)	-40 – +70
Humidity (%)	90 non condensing
Mechanical Vibration	As per MIL-810D & SAE J1455
Mechanical Shock	As per MIL-810D & SAE J1455
Standards	
	FCC PART 15
Antenna Characteristics	
Beam Divergence	Omni directional on non-metal wall, hemispherical on metal wall
Polarization	Vertical

**DataReader  
(outdoor  
version)  
IG-RS-46D-916**



Physical Characteristics	
Dimensions (In)	7.68 x 6.5 x 3.74
Weight (gr)	1,000
Power Requirement (volts)	24 Vdc external
Performance Characteristics	
Interface	RS-485 isolated (RS-232 optional)
Operating Frequency (MHz)	916.5 (others available)
Read Range (ft)	98.4 @ open space
Environmental Conditions	
Operating Temperature (C)	-40 – +70
Storage Temperature (C)	-40 – +70
Humidity (%)	90 non condensing
Mechanical Vibration	As per MIL-810D
Mechanical Shock	As per MIL-810D
Standards	
	FCC PART 15.249

**Holder  
(closed-face  
version)**



Physical Characteristics	
Dimensions (In)	5 x 5 x 1.75
Weight (gr)	45
Environmental Conditions	
Operating Temperature (C)	-40 – +70
Storage Temperature (C)	-40 – +70
Humidity (%)	90 non condensing
Mechanical Vibration	As per MIL-810D
Mechanical Shock	As per MIL-810D



900 Arlington Heights Road  
Suite 170  
Itasca, IL 60143, USA

Tel. +630-875-0047  
Fax +630-875-0048  
[www.tydenetek.com](http://www.tydenetek.com)

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