

CommerceGuard: Protecting and Tracking Global Trade



Ensuring Container Integrity Throughout the Supply Chain

Knowledge is power

CommerceGuard™ is the first global and cost-efficient system that deters theft, smuggling, and international terrorism by integrating electronic Container Security Devices with a global information network. The system tracks freight containers as they move through port and intermodal rail and road connectors. Shippers and appropriate government agencies then use the tracking information to secure and streamline the supply chain.

GE's advanced, tamper-proof Container Security Device (CSD) ingeniously combines the best features of less sophisticated radio tags and electronic seals. It records and transmits:

- when a container has been securely armed to detect intrusion,
- when an authorized person disarms, rearms, or interrogates the CSD, and
- when an unauthorized person opens the container.

Cost-effective information network

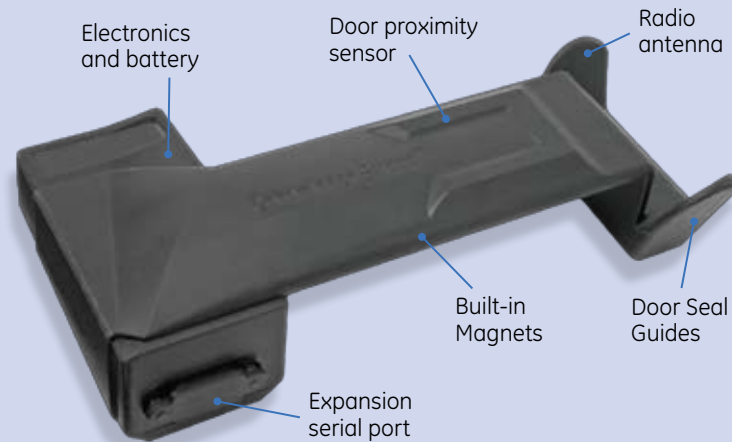
The economical CSD stores access event information. Integrated sensors on the CSD determine when a container's doors are opened. As the CSD and its assigned container pass through the supply chain, the CSD's low-power radio securely transmits to the CommerceGuard Information Network. The CommerceGuard readers are easily installed at key event points at factory gates, ports, terminal yards, depots and railheads. The CSD's access events and the reader's location are then uploaded to the CommerceGuard Data Center.

The components of GE's CommerceGuard System set a new benchmark for cost effectiveness:

- CSDs can be reused
- CSDs are physically protected inside the container and do not occupy cargo space
- Reader infrastructure is economical, allowing for CSD arming and status checks at ranges up to 100 feet
- Encrypted information is transmitted over public networks including the Internet

How the CSD works

Install the CSD with a "snap" of its powerful magnetic shank to the inside of a container's door frame. If the sealed container door's integrity is compromised, the CSD registers the event and stores it with a time stamp. When the CSD comes within range of a handheld or fixed reader, for example at a port in-gate, the CSD sends out an alarm to the reader. Relevant authorities are then alerted, and the container can then be halted, quarantined, and inspected.



The high technology CSD combines three functions

1. Secure electronic intrusion protection
2. Global electronic container identification and point-to-point tracking
3. Expansion port for virtually unlimited "Smart Container" capabilities

Smart, Economical Global Container Tracking

Tracking for the supply chain

Authorized supply chain participants can now track a container's progress as it journeys from the point of stuffing to the point of unloading. Logistics personnel obtain this information for their shipments from the CommerceGuard Data Center and can use it for supply, factory and transportation planning. Supply chain participants can elect to share this information with government officials, because CommerceGuard's secure servers can be integrated with government information systems.

As containers pass by readers that have been installed in specific locations, carriers can use the reader's data to automatically update the status of their container inventory, allowing them to provide more accurate billing information and to optimize the repositioning of empty containers.

Future-Ready for "Smart Container" Technology

The CommerceGuard CSD preserves the supply chain's investment even if detection technology changes. The CSD's unique design allows optional sensors to be connected to it through a standard serial data port. Using this port, sensors for other conditions such as the presence of radioactive, explosive, or narcotic material can communicate alerts using the CSD radio and reader equipment.

