LeghornGroup®

e-Seals

PROTECTION - CONTROL - IDENTIFICATION - TRACKING - RFID SOLUTIONS

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CONTENTS

LeghornGroup vision and values

LeghornGroup established 1978 is a manufacturer and supplier of security seals and security products for protecting assets and goods, specializing in applications for transportation and logistics.

Its wide and varied range of products, systems and bespoke solutions has allowed LeghornGroup to establish itself as one of the European leaders of this sector.

Thanks to a wealth of experience and its in-house design and production capabilities, LeghornGroup can provide nowadays a decisive and comprehensive response to every security related issue.

LeghornGroup aims at being a global market reference point for security devices, systems, and services for any industry sectors.
This ambition is supported by its strong commitment to develop, manufacture and sell innovative and highly effective solutions.
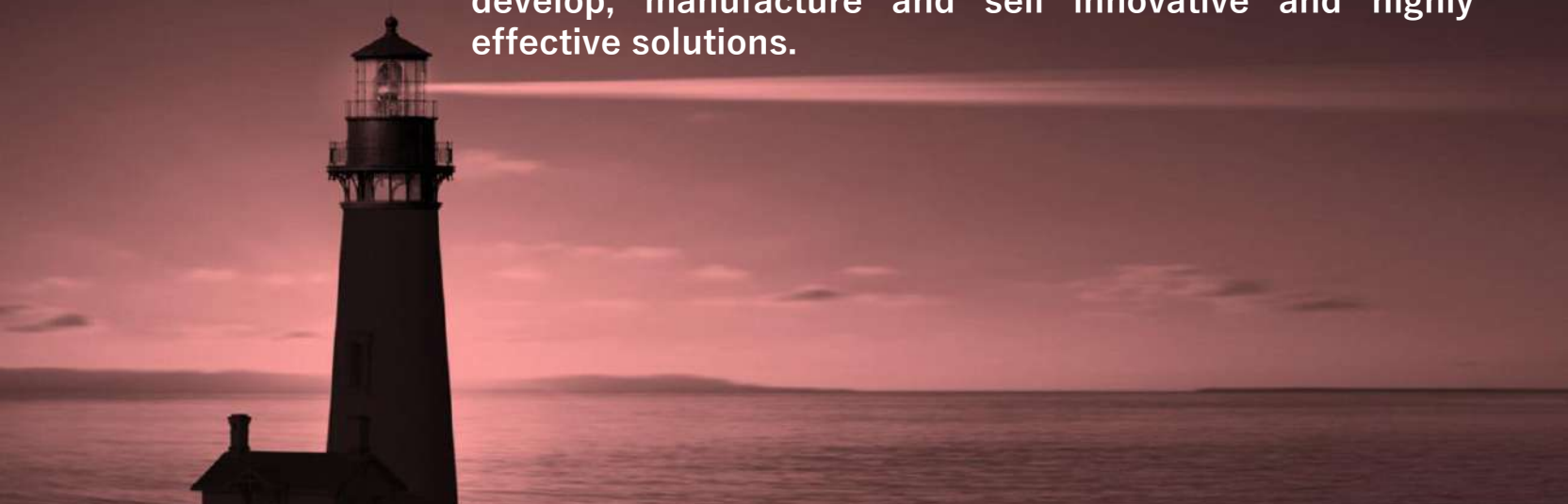
With six sales offices in Europe, USA and India and with two European factories for manufacturing plastic molding and metal parts, LeghornGroup has not only a global footprint and an extensive worldwide client-support network but also a complete control over its range of products, to deliver to the market also customized high-security solutions (be either mechanical, electronic or a combination of both).

Furthermore, LeghornGroup is strongly technology-driven. It has been working for over ten years to enhance the performance and the cost efficiency of its security products, by adopting the most innovative materials and technologies, including electronics and wireless communication technologies.

Business areas

Protection. We can protect goods and assets with security seals and various products for tamper prevention and evidence. The company can create customized technical solutions to meet any client's requirements.

Control. We ensure goods and people can be monitored by using security products and integrated complete hardware and software solutions that allow the operator to monitor and intervene in real time in ongoing operations, even remotely.

Identification. LeghornGroup's innovative technical products and solutions allow users to uniquely and securely identify and authenticate goods, vehicles, containers, animals and people.

Tracking. LeghornGroup's real time GPS tracking devices allow users to monitor location, status and movements of vehicles and people.

RFID Solutions. LeghornGroup also manufactures RFID, Radio Frequency IDentification electronic seals and systems to perform traceability of objects, animals and people, enabling new and more efficient operations to speed up the supply chain.

LeghornGroup aim is to be strongly customer-focused, and provide specific solution and products that completely meets customer's needs, which may differ from one client to the next. By working closely alongside clients, we are able to experience firsthand their problem and solve it together. Furthermore, LeghornGroup provides an active online service to anybody who might need advice or is looking for a specific product for security applications.

On a daily basis the company not only works to broaden their understanding of some of the many issues related to illegal and criminal activities, but also the means to counteract them.

LeghornGroup keeps a detailed data base of their various products manufactured along the years in order to assist the authority with their fight against crime in case they require to trace back a certain seal.

Electronic seals

LeghornGroup manufactures electronic seals, specifically targeting transports and logistics applications.
In particular it offers passive RFID electronic seals, or e-seals, to increase physical security - such as ensuring no possible replica of the seal - and inform in real time on how the goods are stored, tracked, routed, maintained and delivered to customers.

RFID e-seals are the key to enter in a new dimension of freight transport and meet the requirements of industry players for future international trade flows based on a higher level of security and information.

RFID e-seals provide the automatic identification of the truck/container's seal.

They can be quickly and accurately read by static gateway reading systems or by handheld devices assigned to check point personnel.

Any tampering event to the seal is permanently stored in its RFID IC memory.

SOTER UHF RFID SEAL

Three-State RFID Bolt lock High Security Seal

LeghornGroup SOTER SEAL is a sturdy UHF RFID bolt-lock High-Security seal that combines high mechanical security with the electronic security offered by RFID, automatic radio frequency identification technology.

It is compliant with the technical security requirements of ISO 17712:2013.

SOTER SEAL is the first RFID bolt seal available in the market that is able to provide its status information, UNLOCKED, LOCKED OR TAMPERED, which is stored in the RFID chip.

The outer shockproof polystyrene/ABS plastic housing of the seal - customizable with mark and numbering on request - embeds an unique and latest generation of electronic chip, that has its own univocal coding, which cannot be replicated. This allows for secure and reliable automatic identification of the seal applied to the container or vehicle.

Security of the seal is HW-related – thanks to the technical features of the innovative RFID chip deployed – and it isn't delegated to external SW systems and algorithms, as for other RFID seals available in the market.

SOTER SEAL:

- Has univocal ID code and read/write user memory capabilities.
- It offers at the same time the immediate and accurate seal identification and the status of the seal i.e. unlocked/locked and evidence of tamper occurred, if any.
- Access to data and rewrite or delete operations on information stored in the seal cannot be done.
- It is an ideal solution for guaranteeing cargo security and tamper evidence along the shipping and supply chain.

SOTER UHF RFID SEAL

Three-State RFID Bolt lock High Security Seal

Radio Frequency specification

- Frequency: 860 - 960 MHz
- Reference RF Standard: ISO/IEC 18000-6
- RF Protocol: EPC Class 1 Gen2 / ISO/IEC 18000-63
- Technology: Passive
- RFID IC: NXP G2iM+
- User read / write memory: up to 640 bit
- Memory size: from128 bit up to 448 bit of EPC memory
- TID (Tag IDentifier):   96 bit, including 48-bit of univocal progressive numbering *factory locked*; 112 bit user TID memory
- Password protected: yes
- Tamper detection: yes – **THREE STATES DETECTION**
- Read/Write cycle: 10000
- Data retention: 20 years

Performance

- Reading distance by handheld reader: 2 m (6'6"47⁄64") (depending on reader)
- Reading distance at gate reader: 5 m (16' 4" 27/32") (depending on reader)
- Quality: 100% performance tested

Mechanical specification

- IP Protection: IP65
- Operating temperature: - 20°C / + 55 °C
- Storage temperature: - 30°C / + 80 °C
- ISO 17712:2013 Clauses 4, 5 and 6:   yes
- Material: carbonitrured steel + shockproof polystyrene/ABS in accordance with Restriction of Hazardous Substances (RoHS), European Directive 2002/EC

Size

- Electronic flag: mm 48x117x4 (1"x7/8"x4"19⁄32"x5⁄32")
- Metallic pin length: mm 67 (2"5/8")
- Metallic pin diameter: mm 8 (3⁄16")
- Bolt size: mm 56x63x26 (2"13/64x 2"31/64"x 1"1/32)
- Weight: 114 g
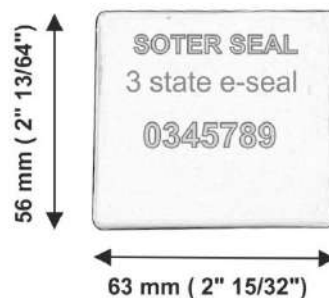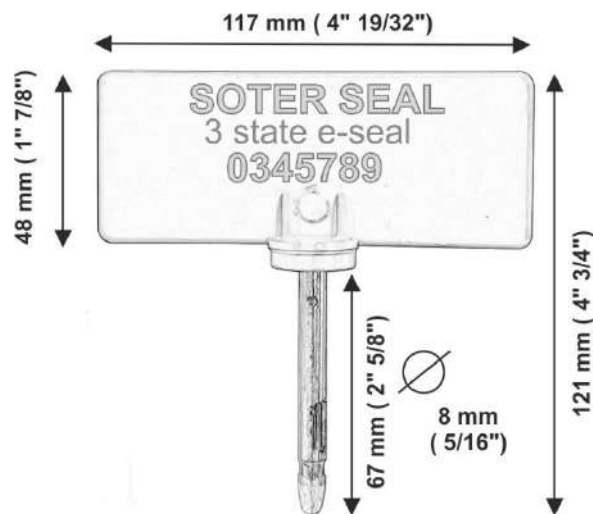
MYRMIDON UHF RFID SEAL

Three-State RFID Bolt lock High Security Seal

LeghornGroup **MYRMIDON SEAL** is a sturdy **UHF RFID cable-lock High-Security seal** that combines high mechanical security with the electronic security offered by RFID, automatic radio frequency identification technology.
It is compliant with the technical security requirements of ISO 17712:2013.

MYRMIDON SEAL s the first RFID cable seal available on the market that is able to provide its status information, **UNLOCKED, LOCKED OR TAMPERED,** which is stored in the RFID chip.

The outer **shockproof polystyrene plastic housing** of the seal – customizable with mark and numbering on request - **embeds an unique and latest generation of electronic chip**, that has its own univocal coding, which cannot be replicated. This allows for secure and reliable automatic identification of the seal applied to the container or vehicle.

Security of the seal is HW-related - thanks to the technical features of the innovative RFID chip deployed - and it isn't delegated to external SW systems and algorithms, as for other RFID seals available in the market.

MYRMIDON SEAL:

- Has univocal ID code and read/write user memory capabilities.
- It offers at the same time the immediate and accurate seal identification and the status of the seal i.e. unlocked/locked and evidence of tamper occurred, if any.
- Access to data and rewrite or delete operations on information stored in the seal cannot be done.
- It is an ideal solution for guaranteeing cargo security and tamper evidence along the shipping and supply chain.

MYRMIDON UHF RFID SEAL

Three-State RFID Bolt lock High Security Seal

Radio Frequency specification

- Frequency: 860 – 960 MHz
- Reference RF Standard: ISO/IEC 18000-6
- RF Protocol: EPC Class 1 Gen2 / ISO/IEC 18000-63
- Technology: Passive
- RFID IC: NXP G2iM+
- User read / write memory: up to 640 bit
- Memory size: from 128 bit up to 448 bit of EPC memory
- TID (Tag IDentifier): 96 bit, including 48-bit of univocal progressive numbering factory locked; 112 bit user TID memo
- Password protected: yes
- Tamper detection: yes – **THREE STATES DETECTION**
- Read/Write cycle: 10000
- Data retention: 20 years

Performance

- Reading distance by handheld reader: 2 m (6'6"47⁄64") (depending on reader
- Reading distance at gate reader: 5 m (16' 4" 27/32") (depending on rea
- Quality: 100% performance tested)

Mechanical specification

- IP Protection: IP65
- Operating temperature: - 20°C / + 55 °C
- Storage temperature: - 30°C / + 80 °C
- ISO 17712:2013 Clauses 5 and 6: yes

Size

- Size: mm 51x93x38 (2"x1"1⁄12"x3⁄16")
- Cable standard length: mm 337 (1' 1" 17/64")
- Cable diameter: mm 5,0 (3⁄16")
- Weight: 160 g
- Material: carbonitrured steel + shockproof polystyrene in accordance with Restriction of Hazardous Substances (RoHS), European Directive 2002/EC

5 mm (3/16")

38 mm (1"1/2")

93 mm (3" 21/32")

3" 21/32"

51 mm (2")
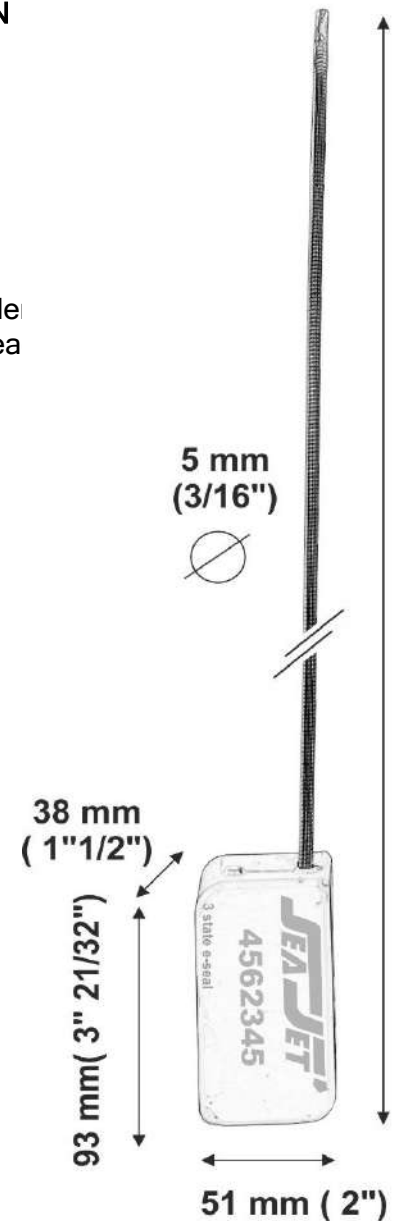
LeghornGroup

NEPTUNE UHF RFID LOGISTIC SEAL

High Security Seal with RFID

LeghornGroup **NEPTUNE UHF RFID LOGISTIC bolt lock High Security Seal** is a sturdy container bolt seal that combines high mechanical security as required by the **ISO17712:2013** technical standard with the electronic security offered by RFID, automatic radio frequency identification technology.

NEPTUNE UHF RFID LOGISTIC SEAL has read-only univocal ID; additional user memory is available for the storage of customer-specific information.

The outer **ABS plastic housing** of the seal - customizable with mark and numbering on request - **embeds an unique electronic RFID chip** that has its own univocal coding, which cannot be replicated. This allows for secure and reliable automatic identification of the seal applied to the container.

RFID provides automatic identification of the container: **NEPTUNE UHF RFID LOGISTIC SEAL** can be automatically detected when trucks/containers are on-the-go at gateways, by using RFID gates. It can be read quickly and accurately by static gateway reading systems, which makes gate in/gate out operations faster and more reliable and secure (human error free).

If needed it also can be read/written by handheld devices operated by check point personnel.

The RFID chip can also be used to store further information added and the chip itself, which can be even password protected.

The chip can be easily written by using any commercial RFID reader/writer device compliant with international standard ISO18000-6C.

This seal is **available also in tamper evidence version**: the status of the seal (TAMPERED / NOT TAMPERED) is immediately detected and read at time of passing through gate or by manual inspection.

NEPTUNE UHF RFID LOGISTIC SEAL

High Security Seal with RFID

Radio Frequency specification

- Frequency: 860 – 960 MHz – UHF EPC Global
- Reference RF Standard: ISO/IEC 18000-6
- RF Protocol: EPC Class 1 Gen2 / ISO/IEC 18000-63
- Technology: Passive
- Integrated circuit: NXP G2iM+
- User read / write memory: yes - up to 640 bit
- Memory size: from 128 bit up to 448 bit of EPC Memory
- TID (Tag IDentifier): 96 bit, including 48-bit factory locked
- Unique serial number: 112 bit User TID memory
- Password protection: yes
- Tamper Detection: yes
- Read / write cycle: 10000
- Data retention: 20 year

Performance

- Reading distance by handheld reader: 3 m (118" 7⁄64") (depending on reader)
- Reading distance at gate reader: 8 m (314" 61⁄64") (depending on reader)
- Quality: 100% performance tested

Mechanical specification

- IP Protection: IP66
- Operative Temperature: 20°C/ +55°C
- Storage Temperature: - 30°C / +80°C
- ISO 17712:2013: yes
- Size Electronic Part (flag): mm 42 x 115 x 4 (1" 21⁄32" x 4" 17⁄32" x 5⁄32")
- Metallic pin diameter: 8 mm (5⁄16")
- Metallic pin length: 73.5 mm (2" 29⁄32")
- Bolt diameter: 20 mm (55⁄64")
- Weight: 70 g
- Material: carbonitrured steel + ABS in accordance with Restriction of Hazardous Substances (RoHS), European Directive 2002/EC

NEPTUNE UHF RFID TAMPER EVIDENT SEAL

High Security Seal with built-in tamper RFID

LeghornGroup **NEPTUNE UHF RFID TAMPER EVIDENCE bolt lock High Security Seal** is a sturdy container bolt seal that combines high mechanical security as required by the **ISO17712:2013** technical standard with the electronic security offered by RFID, automatic radio frequency identification technology.

NEPTUNE UHF RFID TAMPER EVIDENCE SEAL has read-only univocal ID, to guarantee the seal unicity, but also shows the status of the seal, either TAMPERED or NOT TAMPERED.
Any tampering event with the seal is permanently stored in its RFID chip's memory.
Additional user memory is available for the storage of customer-specific information.

The outer **ABS plastic housing** of the seal - customizable with mark and numbering on request - **embeds an unique electronic RFID chip** that has its own univocal coding, which cannot be replicated. This allows for secure and reliable automatic identification of the seal applied to the container.

NEPTUNE UHF RFID TAMPER EVIDENCE SEAL has univocal ID code and read/write User Memory capabilities. It offers at the same time the immediate and accurate seal identification and the status of the seal i.e. evidence of tamper occurred, if any.

A unique feature of IC built-in tamper evidence guarantees that any seal tampering action or even attempt activates the TAG TAMPER ALARM, which provides the status of the seal either TAMPERED or NOT TAMPERED.
The chip can be easily written by using RFID reader/writer device. Further information added and the RFID chip itself can be password protected.

RFID provides automatic identification of the container. It can be read quickly and accurately by static gateway reading systems or by handheld devices operated by check point personnel.

It is an ideal solution for guaranteeing cargo security and tamper evidence along the shipping and supply chain.

NEPTUNE UHF RFID TAMPER EVIDENT SEAL

High Security Seal with built-in tamper RFID

Radio Frequency specification
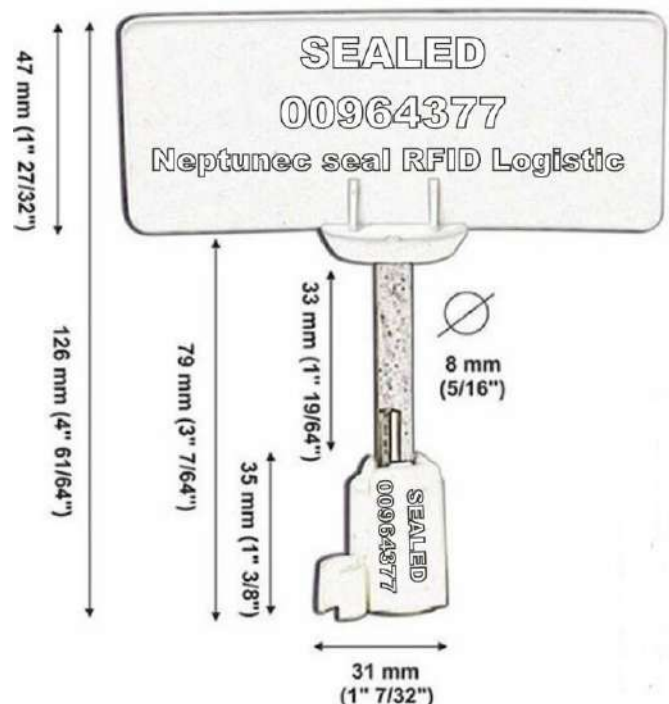
- Frequency: 860 – 960 MHz – UHF EPC Global
- Reference RF Standard: ISO/IEC 18000-6
- RF Protocol: EPC Class 1 Gen2 / ISO/IEC 18000-63
- Technology: Passive
- Integrated circuit: NXP G2iM+
- User read / write memory: yes - up to 640 bit
- Memory size: from 128 bit up to 448 bit of EPC Memory
- TID (Tag IDentifier):   96 bit, including 48-bit factory locked
- Unique serial number: 112 bit User TID memory
- Password protection: yes
- Tamper Detection: yes
- Read / write cycle: 10000
- Data retention: 20 year

Performance

- Reading distance by handheld reader: 3 m (118" 7⁄64") (depending on reader)
- Reading distance at gate reader: 8 m (314" 61⁄64") (depending on reader)
- Quality: 100% performance tested

Mechanical specification

- IP Protection: IP66
- Operative Temperature: - 20°C/ +55°C
- Storage Temperature: - 30°C / +80°C
- ISO 17712:2013:   yes
- Size Electronic Part (flag):   mm 42 x 115 x 4
  (1" 21⁄32" x 4" 17⁄32" x 5⁄32")

- Metallic pin diameter: 8 mm (5⁄16")
- Metallic pin length: 73.5 mm (2" 29⁄32")
- Bolt diameter: 20 mm (55⁄64")
- Weight: 70 g
- Material: carbonitrured steel + ABS in accordance with Restriction of Hazardous Substances (RoHS), European Directive 2002/EC.

LeghornGroup

CABLE UHF RFID LOGISTIC SEAL

Metal Cable High Security Seal with RFID 3.5mm

LeghornGroup **CABLE UHF RFID LOGISTIC SEAL** is a sturdy cable that combines high mechanical security as required by the **ISO17712:2013** technical standard with the electronic security offered by RFID, automatic radio frequency identification technology.

CABLE UHF RFID LOGISTIC SEAL has read-only univocal ID; additional user memory is available for the storage of customer-specific information.

The cable lock system makes its use easy in a variety of different applications.
The outer **shock-proof polystyrene plastic housing** of the seal – customizable with mark and numbering on request - **embeds an unique electronic chip**, that has its own univocal coding, which cannot be replicated. This allows for secure and reliable automatic identification of the seal applied to the vehicle or container.

CABLE UHF RFID LOGISTIC SEAL is the ideal High-Security Seal for trucks, trailers, and containers.
RFID adds the outstanding feature of enabling automatic identification of the vehicle and/or container on which the seal is applied.

RFID e-seal with univocal serial number that can be automatically detected when trucks/trailers/containers are on-the-go at gateway, by using RFID gates. It makes gate in/gate out operations faster and more reliable and secure (human error free). Handheld devices operated by check point personnel can be used as read/write units too.

The RFID chip can also be used to store cargo-related information, other than the seal ID. The chip can be easily written by using RFID reader/writer device. Further information added and the chip itself can be password protected.

CABLE UHF RFID LOGISTIC SEAL

Metal Cable High Security Seal with RFID 3.5mm
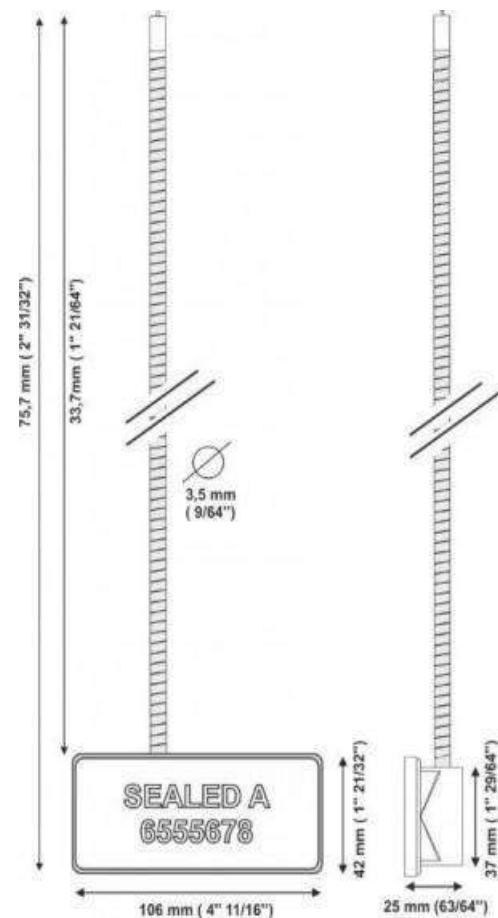
Radio Frequency specification

- Frequency: 860 – 960 MHz – UHF EPC Global
- Reference RF Standard: ISO/IEC 18000-6
- RF Protocol: EPC Class 1 Gen2 / ISO/IEC 18000-63
- Technology: Passive
- Integrated circuit: NXP G2iM+
- User read / write memory: yes - up to 640 bit
- Memory size :   from 128 bit up to 448 bit of EPC Memory
- TID (Tag IDentifier):   96 bit, including 48-bit factory locked
- Unique serial number;   112 bit User TID memory
- Password protection: yes
- Tamper Detection: yes
- Read / write cycle: 10000
- Data retention: 20 year

Performance

- Reading distance by handheld reader: 3 m (118" 7⁄64") (depending on reader)
- Reading distance at gate reader: 8 m (314" 61⁄64") (depending on reader)
- Quality: 100% performance tested

Mechanical specification

- IP Protection: IP66
- Operative Temperature: - 20°C/ +55°C
- Storage Temperature: - 30°C / +80°C
- ISO 17712:2013:   yes
- Size Electronic Part (flag): mm 42 x 115 x 4 (1" 21⁄32" x 4" 17⁄32" x 5⁄32")
- Wire standard length: 350 mm (1"21/64")
- Wire diameter: 3,5 mm (9/64")
- Weight: 61 g
- Material: carbonitrured steel + shock-proof polystyrene in accordance with Restriction of Hazardous Substances (RoHS), European Directive 2002/EC

CABLE UHF RFID TAMPER EVIDENT SEAL

Metal Cable Security Seal with built-in tamper RFID 3.5mm

LeghornGroup CABLE UHF RFID TAMPER EVIDENCE SEAL is a sturdy cable seal that combines mechanical security of standard seals as required by the ISO17712:2013 technical standard with the electronic security offered by RFID, automatic radio frequency identification technology.

CABLE UHF RFID TAMPER EVIDENCE SEAL has read-only univocal ID, to guarantee the seal unicity, but also shows the status of the seal, either TAMPERED o r NOT TAMPERED.
Any tampering event with the seal is permanently stored in its RFID chip's memory.
Additional user memory is available for the storage of customer-specific information.

The outer ABS plastic housing of the seal – customizable with mark and numbering on request - embeds an unique electronic RFID chip that has its own univocal coding, which cannot be replicated.   This allows for secure and reliable automatic identification of the seal applied to the container.

CABLE UHF RFID TAMPER EVIDENCE SEAL has univocal ID code and read/write User Memory capabilities. It offers at the same time the immediate and accurate seal identification and the status of the seal i.e. evidence of tamper occurred, if any.
A unique feature of IC built-in tamper evidence guarantees that any seal tampering action or even attempt activates the TAG TAMPER ALARM, which provides the status of the seal either TAMPERED or NOT TAMPERED.
The chip can be easily written by using RFID reader/writer device. Further information added and the RFID chip itself can be password protected.
RFID provides automatic identification of the container. It can be read quickly and accurately by static gateway reading systems or by handheld devices operated by check point personnel.
The cable locki n g m e c h a n i s m makes its use easy in a variety of different applications.
It is an ideal solution for guaranteeing cargo security and tamper evidence along the shipping and supply chain.

LeghornGroup®

CABLE UHF RFID TAMPER EVIDENT SEAL

Metal Cable Security Seal with built-in tamper RFID 3.5mm

Radio Frequency specification
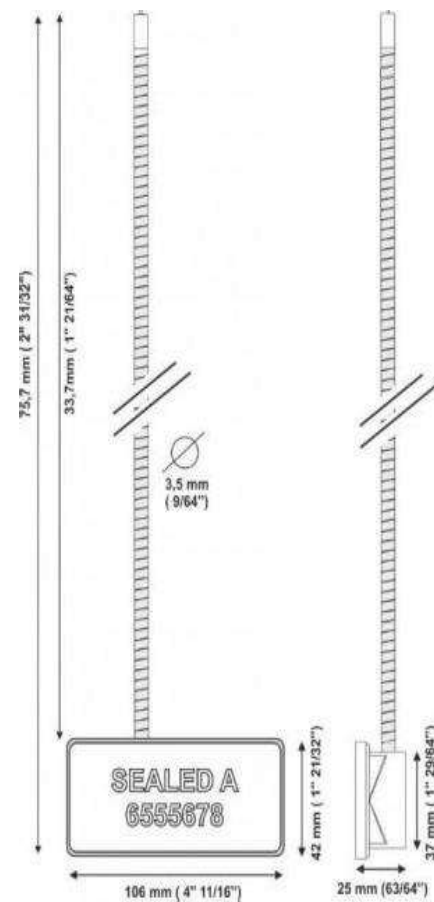
- Frequency: 860 – 960 MHz – UHF EPC Global
- Reference RF Standard: ISO/IEC 18000-6
- RF Protocol: EPC Class 1 Gen2 / ISO/IEC 18000-63
- Technology: Passive
- Integrated circuit: NXP G2iM+
- User read / write memory: yes - up to 640 bit
- Memory size: from 128 bit up to 448 bit of EPC Memory
- TID (Tag IDentifier):   96 bit, including 48-bit factory locked
- Unique serial number: 112 bit User TID memory
- Password protection: yes
- Tamper Detection: yes
- Read / write cycle: 10000
- Data retention: 20 year

Performance

- Reading distance by handheld reader: 3 m (118" 7⁄64") (depending on reader)
- Reading distance at gate reader: 8 m (314" 61⁄64") (depending on reader)
- Quality: 100% performance tested

Mechanical specification

- IP Protection: IP66
- Operative Temperature: - 20°C/ +55°C
- Storage Temperature: - 30°C / +80°C
- ISO 17712:2013:   yes
- Size Electronic Part (flag): mm 42 x 115 x 4 (1" 21⁄32" x 4" 17⁄32" x 5⁄32")
- Wire standard length: 350 mm (1"21/64")
- Wire diameter: 3,5 mm (9/64)
- Weight: 61 g
- Material: carbonitrured steel + ABS in accordance with Restriction of Hazardous Substances (RoHS), European Directive 2002/EC

LeghornGroup

CABLE UHF RFID TAMPER EVIDENT SEAL

Metal Cable High Security Seal with built-in tamper RFID 5mm

LeghornGroup **CABLE UHF RFID TAMPER EVIDENCE SEAL 5x350mm** is a sturdy cable seal that combines mechanical security of standard seals as required by the **ISO17712:2013** technical standard with the electronic security offered by RFID, automatic radio frequency identification technology.

The outer shock-proof **shock-proof polystyrene plastic housing** of the seal - customizable with mark and numbering on request - **embeds an unique electronic chip**, that has its own univocal coding, which cannot be replicated. This allows for secure and reliable automatic identification of the seal applied to the vehicle or container.

CABLE UHF RFID TAMPER EVIDENCE SEAL 5x350mm has univocal ID code and read/write User Memory capabilities. It offers at the same time the immediate and accurate seal identification and the status of the seal i.e. evidence of tamper occurred, if any.

A unique feature of IC built-in tamper evidence guarantees that any seal tampering action or even attempt activates the TAG TAMPER ALARM, which provides the status of the seal either TAMPERED or NOT TAMPERED. Tamper status is stored in the seal memory and cannot be rewritten nor deleted.

The chip can be easily written by using RFID reader/writer device. Further information added and the RFID chip itself can be password protected.

Thanks to its long range reading it can be automatically detected when trucks/trailers/containers are on-the-go at gateways, by using UHF RFID gates: this makes gate in/gate out operations faster and more reliable and secure (human error free).

The cable locking mechanism makes its use easy in a variety of different applications.

It is an ideal solution for guaranteeing cargo security and tamper evidence along the shipping and supply chain.

CABLE UHF RFID TAMPER EVIDENT SEAL

Metal Cable High Security Seal with built-in tamper RFID 5mm

Radio Frequency specification

- Frequency: 860 – 960 MHz – UHF EPC Global
- Reference RF Standard: ISO/IEC 18000-6
- RF Protocol: EPC Class 1 Gen2 / ISO/IEC 18000-63
- Technology: Passive
- Integrated circuit: NXP G2iM+
- User read / write memory: yes - up to 640 bit
- Memory size: from 128 bit up to 448 bit of EPC Memory
- TID (Tag IDentifier): 96 bit, including 48-bit factory locked
- Unique serial number: 112 bit User TID memory
- Password protection: yes
- Tamper Detection: yes
- Read / write cycle: 10000
- Data retention: 20 year

Performance

- Reading distance by handheld reader: 3 m (118" 7⁄64") (depending on reader)
- Reading distance at gate reader: 8 m (314" 61⁄64") (depending on reader)
- Quality: 100% performance tested

Mechanical specification

- IP Protection: IP66
- Operative Temperature: - 20°C/ +55°C
- Storage Temperature: - 30°C / +80°C
- ISO 17712:2013: yes
- Size: mm 51x93x38 (2"x1"1⁄12"x3"⁄16")
- Cable standard length: mm 337 (1' 1" 17/64")
- Cable diameter: mm 5,0 (3⁄16")
- Weight: 160 g
- Material: carbonitrured steel + shock-proof polystyrene in accordance with Restriction of Hazardous Substances (RoHS), European Directive 2002/EC

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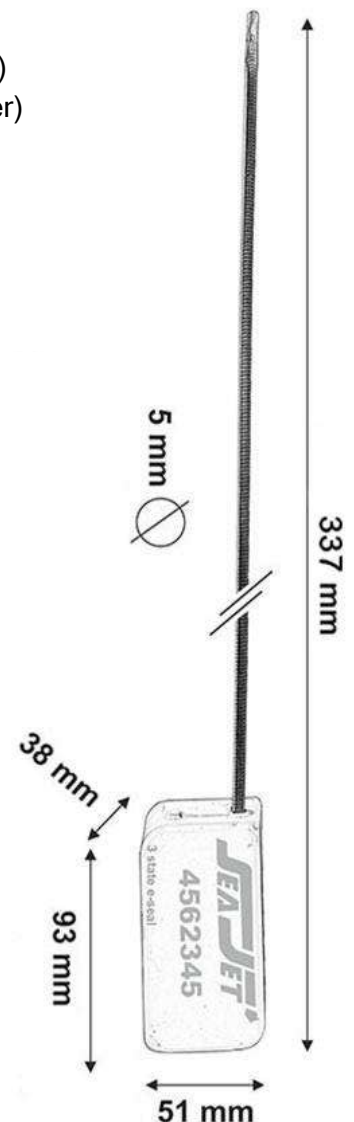
MINICABLE NFC/UHF RFID SEAL
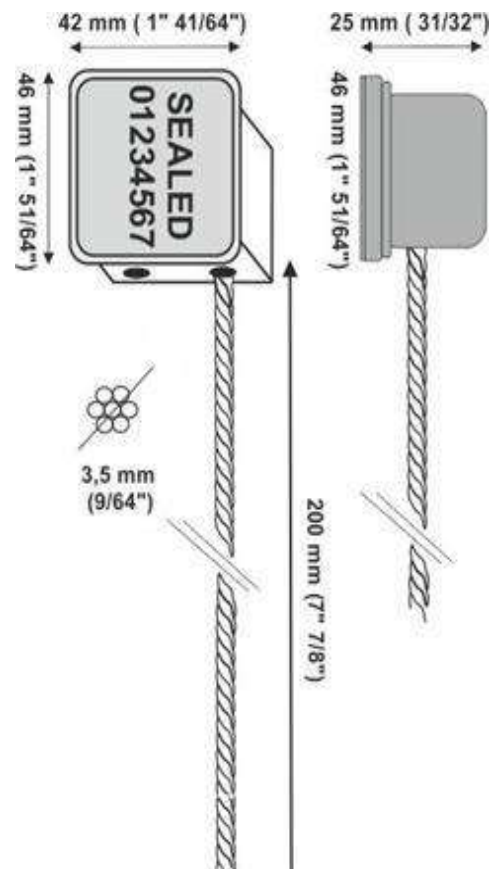
Metal Cable High Security Seal with RFID

MINICABLE RFID is a metal adjustable cable-lock seal offering a high level of security thanks to its mechanical characteristics as required by the **ISO17712:2013** technical standard combined with the use of automatic radio frequency identification technology, RFID.

The presence of a unique RFID chip guarantees the complete non-clonability of the seal, reinforcing product security in the authentication of goods and their physical protection along the transport and logistics chain.
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The availability of the product in two different operating frequency bands also ensures differentiated performances and therefore a wider possibility of use in the field. In particular, NFC product version makes it user friendly, with information accessible simply via smartphone or tablet.

MINICABLE RFID product is also available in a fixed-length option that allows using this security seal as special security key-holder.

MINICABLE NFC/UHF RFID SEAL

Metal Cable High Security Seal with RFID

TECHNICAL SPECIFICATIONS – NFC/UHF RFID

- Operative frequency   13.56MHz - Protocol: ISO 14443A
- RFID inlay type: HF Smart Label
- RFID Chip: Ntag213
- Reading Range HF/NFC: approx 3 cm

- Operative frequency: 860-960 MHz - Protocol: ISO 18000-6
- RFID inlay type: UHF Smart Label
- RFID Chip: Impinj Monza 6/Alien H3
- Reading Range UHF: approx 10 cm

- Plastic box size: 42 mm*46 mm*25 mm, Cable: Diameter 3.5 mm, Length 200 mm
- Weight: 38 g
- Material: carbonitrured steel + shock-proof polystyrene in accordance with Restriction of Hazardous Substances (RoHS), European Directive 2002/EC
- Marking (option):   Laser engraving for alphanumeric string, logo, barcode, QRcode
- Operative Temperature: -20℃ ~ 55℃
- Warranty: 1 year
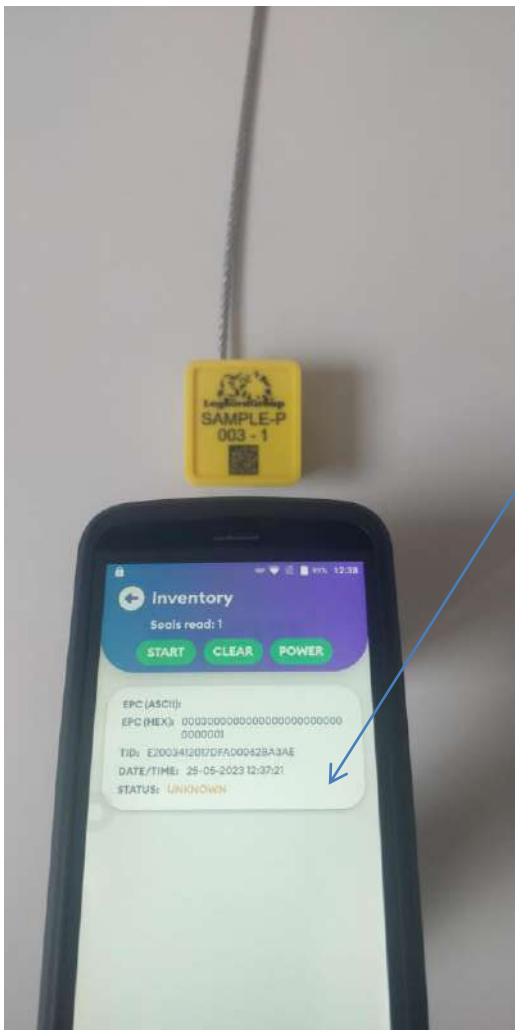
STATUS UNKNOWN REGARDLESS IF THE SEAL IS OPENED/CLOSED/TAMPERED

TITANSEAL UHF/HF RFID LOGISTIC SEAL

Plastic pull-tight seal with RFID

LeghornGroup RFID TITAN SEAL - available in operational frequency bands HF or UHF - is an adjustable plastic security seal.
The added RFID electronic component turns it into a product that can store a lot of information for logistics and traceability purposes.
Tear-off possibility or standard version.
The polypropylene plastic housing of the seal – highly resistant in harsh environments and customizable with mark and numbering on request – embeds an unique electronic chip, that has its own coding, which cannot be replicated. This allows for secure and reliable automatic identification of the seal.

- RFID e-seal with unique serial number.

- RFID provides automatic identification of the item to which the seal is applied. The RFID chip can also be used to store further information. The chip can be easily written by using RFID reader/writer device.
- It can be automatically detected when goods or vehicles (trucks /trailers/containers) are on-the-go at gateways, by using RFID gates: this makes gate in/gate out operations faster, more secure and reliable (human error free).
- This product is ideal for closing large sacks and bags and track logistics of goods, but also to seal truck locks or tanker inlet- outlets.

Mechanical specification

- IP Protection: IP66
- Operative temperature: 20°C / + 80 °C
- Storage temperature: 20°C / + 80 °C
- Size Electronic part (Flag):   72 x 110 (2" 53/64" x 4" 21⁄64") mm
- Total length: 424 mm (16" 11⁄16")
- Working length: 308 (12" 1⁄8") mm
- Weight: 11 g
- Material: co-polymer polypropylene plastic housing. PET RFID label with adhesive for special use.

# TITANSEAL UHF/HF RFID LOGISTIC SEAL

Plastic pull-tight seal with RFID

Radio Frequency specification

UHF Model

- Frequency: 860 – 960 MHz – UHF EPC Global
- Reference RF Standard: ISO/IEC 18000-6
- RF Protocol: EPC global and ISO 18000-63 compliant, Gen2V2 compliant
- Technology: Passive
- Integrated circuit: IMPINJ Monza 5 Read/Write
- User read / write memory: yes - 32 bit
- Memory size: up to 128 bits of EPC memory
- TID (Tag IDentifier): 48 bits of serialized TID
- Password protection: yes
- Tamper Detection: no
- Read / write cycle: 100.000
- Data retention: 50 year

HF Model

- Operating frequency: 13.56 MHz – HF
- Reference RF Standard: ISO/IEC 15693
- Technology: Passive
- Integrated circuit: ICode SLI series
- Memory size: up to 2048 bit; Read/Write
- UID (Unique IDentifier): 64 bits
- Tag dimension: 60×60 mm (2" 23⁄64" x 2" 23⁄64")
- Password protection: yes
- Tamper Detection: no
- Read / write cycle: 10,000
- Data retention: 10 years
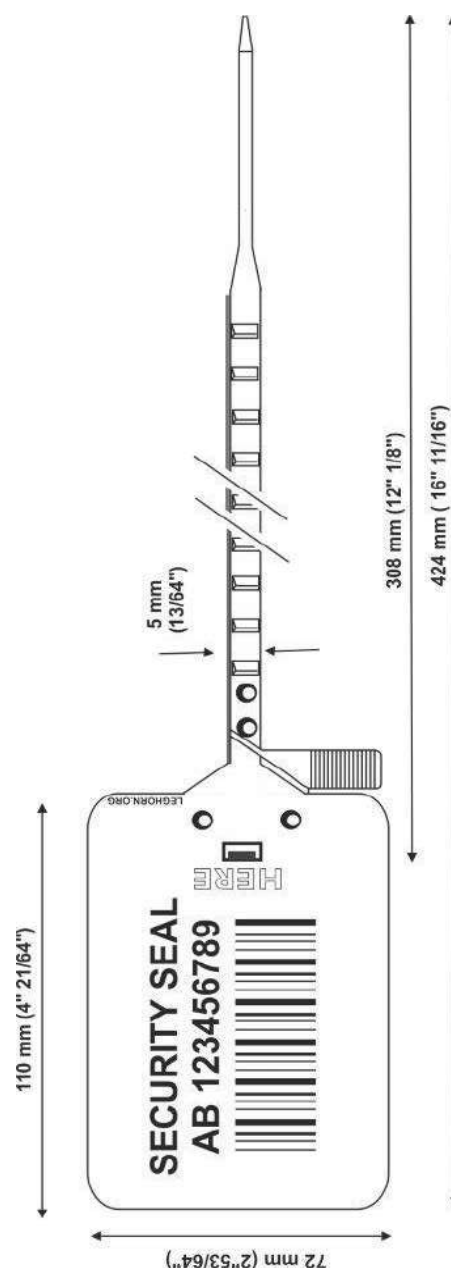
Performance

- UHF - Reading distance by handheld reader: 600 – 800 cm (236" 7/32 – 314" 61⁄64")
- HF - Reading distance by handheld reader: 10 – 30 cm (3" 15⁄16" – 11" 13⁄16")
- Quality: 100% performance tested

TWISTSEAL RFID LOGISTIC WIRE SEAL

Plastic rotor seal with RFID

RFID Twistseal is a wire-type security seal made of very strong plastic materials: UV resistant PVC for the outer case and POM, Polyacetal for the rotor inner part. It is ideal sealing device for use in industrial or harsh environment, including outdoor use for energy metering identification and tampering evidencing.

The completely transparent outer casing allows to check the correct locking system by visual inspection.

It is equipped with RFID UHF inlay, compatible with ISO18000-6 and has a unique code which is impossible to clone (available also in HF/NFC operating frequency) since it is embedded in the seal.

How to use it:

Insert the cable in one of the two holes on the body of the seal, paying attention to insert the same cable in the corresponding hole in the inner plastic cylinder.
To close it, turn the handle of the seal 360°. Once closed, it is advisable to snap off the handle. It is impossible to tamper the seal once it is secured.

Sequential numbering and customisation:

- Marking with laser engraving
- Sequenced numbering up to 15 digits
- Customised alphanumeric string up to 20 characters on one line
- Possible 4 digits marking on rotor part
- Logo available upon request
- Same EPC code than the outer laser marking

Available in different RFID operating frequency bands

TWISTSEAL RFID LOGISTIC WIRE SEAL

Plastic rotor seal with RFID

UHF RFID TWISTSEAL

Protocol
Chip Memory
Operating frequency Protection
Operating temperature Storage
temperature Tag size

ISO/IEC 18000-6C EPC Class 1 Gen2
ALIEN 9620
EEPROM
860 – 960 MHz - UHF
IP65
-20°C a +80°C
-20°C a +80°C
mm 15x30

Resistance to critical external agents Typical reading range: from 5 to 15 cm (depending on the type of reader used)

Available also in the following versions: RFID HF ISO 15693, HF ISO 14443A MIFARE, HF NFC NTAG
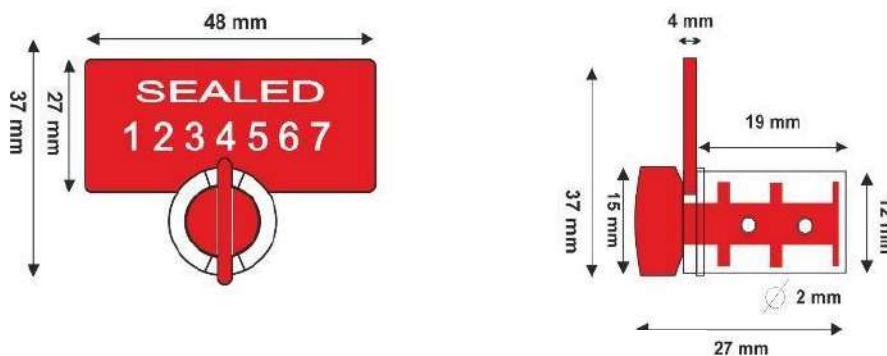
- ▪ **Easy application.**
- ▪ **Visual inspection of the seal closure** thanks to its sturdy and transparent polycarbonate body.
- ▪ **Hardly to be tampered with**: once it is closed it is impossible to tamper with; the sealing wire used for the closure has no chance of being removed and any attempt to tamper will be obvious.

ANCHORFLAG RFID LOGISTIC SEAL

Sealing wire plastic seal with UHF/HF/NFC RFID

**RFID ANCHORFLAG** is a wire security plastic seal with UHF RFID TAG.

UHF RFID ANCHORFLAG mounts an RFID tag whose electronic chip has its own unique coding system and cannot be cloned. This feature enables a safe and reliable automatic identification of the seal, i.e. the item associated with it. This kind of seal is particularly adopted for meter identification and protection.

Completely transparent plastic seal: the transparency permits the visual inspection of the integrity of the locking mechanism.

The outer casing of the seal, made of UV resistant polycarbonate can be customized with marking and numbering (alphanumeric code) by laser engraving or mold- embossing on volume productions.

How to use it

Plug the wire into the holes of
the seal body.
Press the anchor tip into the corresponding hole.
Press with your fingers till the seal locks. A shutter
sound ensures the closing of the seal
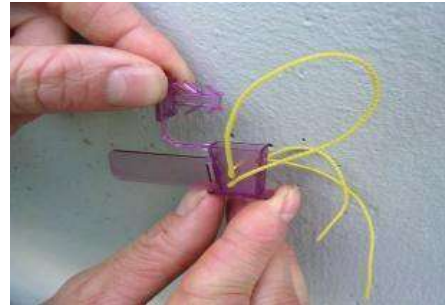
UHF/HF/NFC RFID ANCHORFLAG

The RFID technology provides automatic, contactless and without line of sight identification of the seal associated with the item.
It can be read quickly and accurately through portable devices operated by the staff.
The RFID chip can also be used to store additional information.
One can easily write into the chip by using standard RFID read / write devices. The information can be password protected.

ANCHORFLAG RFID LOGISTIC SEAL

Sealing wire plastic seal with UHF/HF/NFC RFID

UHF Specification

- Operating frequency 860-960 MHz - UHF Global
- Protocol EPC Class 1 Gen2 - ISO / IEC 18000-6C
- Chip ALIEN H3
- EEPROM memory
- IP66 Protection
- Operating temperature -20 ° C to + 80 ° C
- Storage temperature -20 ° C to + 80 ° C
- Tag size 12x30 mm
- Resistance to critical external agents
- Typical reading range: from 5 to 15 cm

  (depending on the type of reader used)
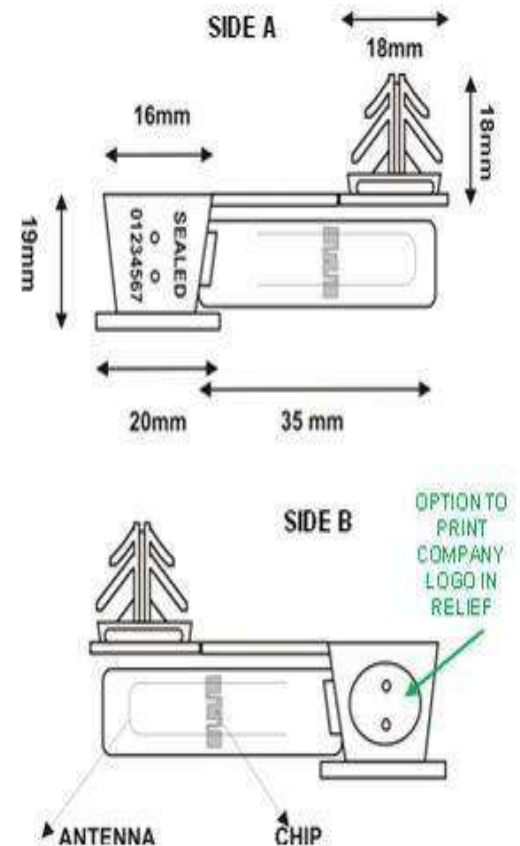
HF/NFC Specification

- Operating frequency 13.56 MHz
- Protocol ISO 15693, HF ISO 14443A MIFARE, HF NFC NTAG.
- EEPROM memory
- IP66 Protection
- Operating temperature -20 ° C to + 80 ° C
- Storage temperature -20 ° C to + 80 ° C
- Tag size 12x30 mm
- Resistance to critical external agents
- Typical reading range: from 1 to 3 cm

  (depending on the type of reader used)

ADJUSTESEAL HF/NFC/UHF RFID

Pull-tight plastic seal

Adjustable plastic seal for fast, easy and safe use in a variety of different applications for industry and transportation.
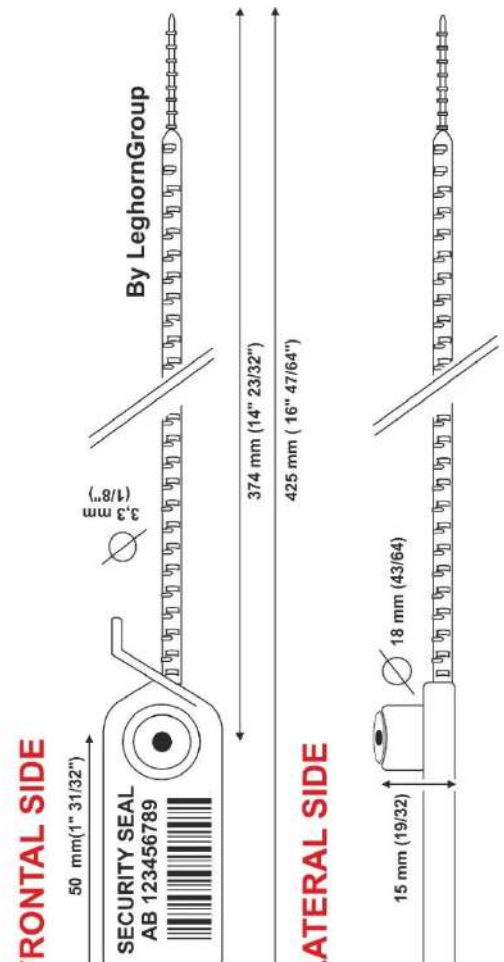
This seal integrates an RFID inlay operating either in the NFC HF band, *Near Field Communication* or UHF band, with an electronic chip with a unique ID code.

The presence of the chip ensures the possibility of carrying out fast and reliable operations to identify the object to which the seal is applied (contactless and in the absence of line of sight).

Additional information can also be stored into the chip user memory, which can be accessed by simply placing any NFC smartphone or tablet in proximity of the seal or by using UHF mobile/fixed readers.

Technical specifications

- Operative frequency   13.56MHz - Protocol: ISO 14443A
- RFID inlay type: HF Smart Label
- RFID Chip: NTAG203, NTAG213
- Reading Range HF/NFC: approx 3 cm (handheld reader)

- Operative frequency: 860-960 MHz - Protocol: ISO 18000-6
- RFID inlay type: UHF Smart Label
- RFID Chip: Impinj Monza 6/Alien H3 approx
- Reading Range UHF: 10 cm (handheld reader)

- Plastic tag size: 30 mm * 15 mm
- Seal tail: Dia. 3.3 mm, Length 265/374mm
- Material: Polypropylene
- Printing (option):   Laser mark
- Barcode (option):   Barcode printing
- Warranty: 1 year

By LeghornGroup

FRONTAL SIDE
50 mm(1" 31/32")
SECURITY SEAL
AB 123456789
Ø 3,3 mm (1/8")
374 mm (14" 23/32")
425 mm (16" 47/64")

LATERAL SIDE
15 mm (19/32)
Ø 18 mm (43/64)

LeghornGroup

JUPITERSEAL HF/NFC/UHF RFID

Pull-tight round tail plastic seal

Resistant and versatile indicative seal, available in five different tail lengths and three different tail diameter size, which make this seal suitable for plenty of applications, from transport, to safety, to industry or postal services. This adjustable plastic seal has fast, easy and safe application.

It integrates a locking mechanism with metal insert to increase the level of protection against tampering attempts.

Also, it includes an electronic chip for univocal, contactless and in the absence of line of sight, identification of the item to which the seal is applied.

Additional information can also be stored into the chip user memory, which can be accessed by simply placing any NFC smartphone or tablet in proximity of the seal.
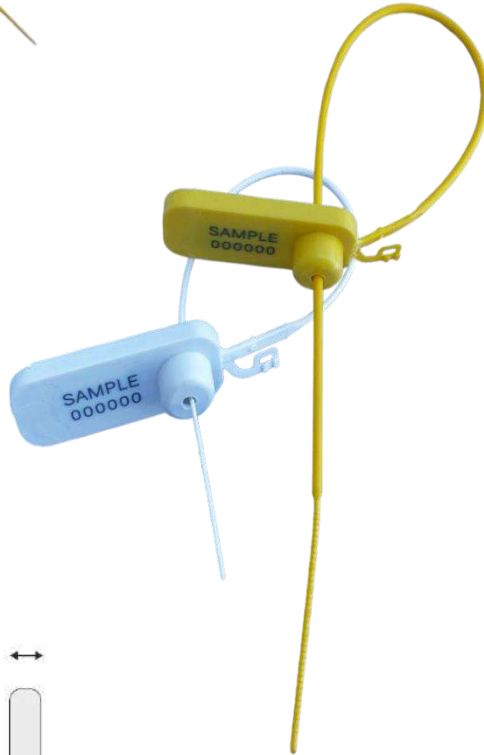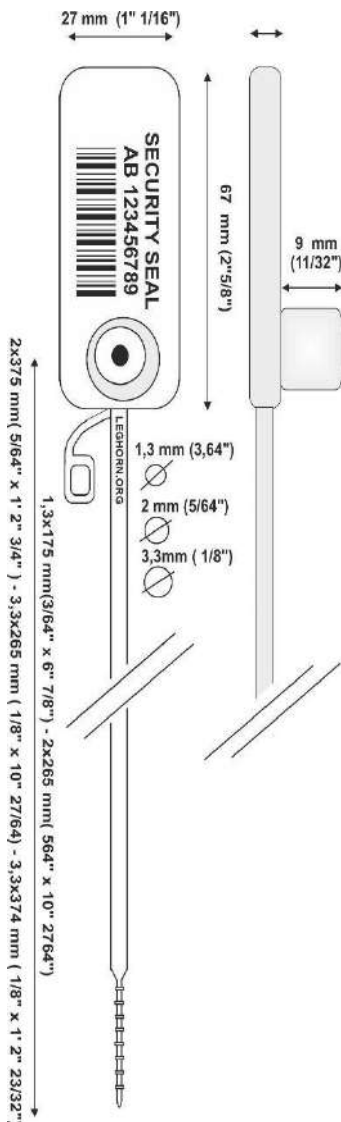
Technical specifications

- Operative frequency   13.56MHz - Protocol: ISO 14443A
- RFID inlay type: HF Smart Label
- RFID Chip: NTAG203, NTAG213
- Reading Range HF/NFC: approx 3 cm (handheld reader)

- Operative frequency: 860-960 MHz - Protocol: ISO 18000-6
- RFID inlay type: UHF Smart Label
- RFID Chip: Impinj Monza 6/Alien H3
- Reading Range UHF: approx 10 cm (handheld reader)

- Plastic tag size: 67 mm * 27 mm
- Seal tail: Dia. 1.3/2.0/3.3 mm,
- Material: Length: 175/265/374 mm
                                 Polypropylene
- Printing (option):   Laser mark
- Barcode (option):   Barcode printing
- Warranty: 1 year

HECTORSEAL HF/NFC/UHF RFID

Pull-tight flat tail plastic seal

HECTORSEAL RFID is an adjustable plastic seal that combines the mechanical characteristics of high tensile strength, typical of this model, with the security and greater versatility of use offered by the automatic radiofrequency identification technology, RFID.

The seal has a special locking mechanism with metal insert, which strengthens its handling resistance. It can also be supplied with or without tear-off.

The presence of a unique RFID chip guarantees its complete non-clonability, reinforcing the product security in the authentication of goods along the transport and logistics chain.

The availability of the product in two different operating frequency bands ensures differentiated performances and therefore a wider possibility of use in the field.

The availability of the product in two different operating frequency bands ensures differentiated performances and therefore a wider possibility of use in the field.

The transparent housing covering the plastic head not only seals and makes the RF part inaccessible, but also allows a quick visual inspection and the reading at glance of any marking data printed in clear on the head itself.

HECTORSEAL meets a wide range of applications: for example it can be used to seal tank trucks, to close holes far from each other, or for heavy postal bags.

HECTORSEAL HF/NFC/UHF RFID

Pull-tight flat tail plastic seal

Technical specifications

- Operative frequency: 13.56MHz - Protocol: ISO 14443A
- RFID inlay type: HF Smart Label
- RFID Chip: NTAG203, NTAG213
- Reading Range HF/NFC: approx 3 cm

- Operative frequency: : 860-960 MHz - Protocol: ISO 18000-6
- RFID inlay type: UHF Smart Label
- RFID Chip: Impinj Monza 6/Alien H3
- Reading Range UHF: approx 10 cm

- Plastic tag size: 75 mm * 28 mm, Seal tail: width 7.5 mm, Length 420 mm
- Material: Polypropylene
- Printing (option): Laser Mark
- Barcode (option): Barcode printing
- Operative Temperature: -20℃ ~ 55℃
- Warranty: 1 year

11 mm(27/64")

76 m (2" 63/64")   356 mm (1' 2" 1/64")

32 mm (1" 1/4")

SAMPLE
00000056
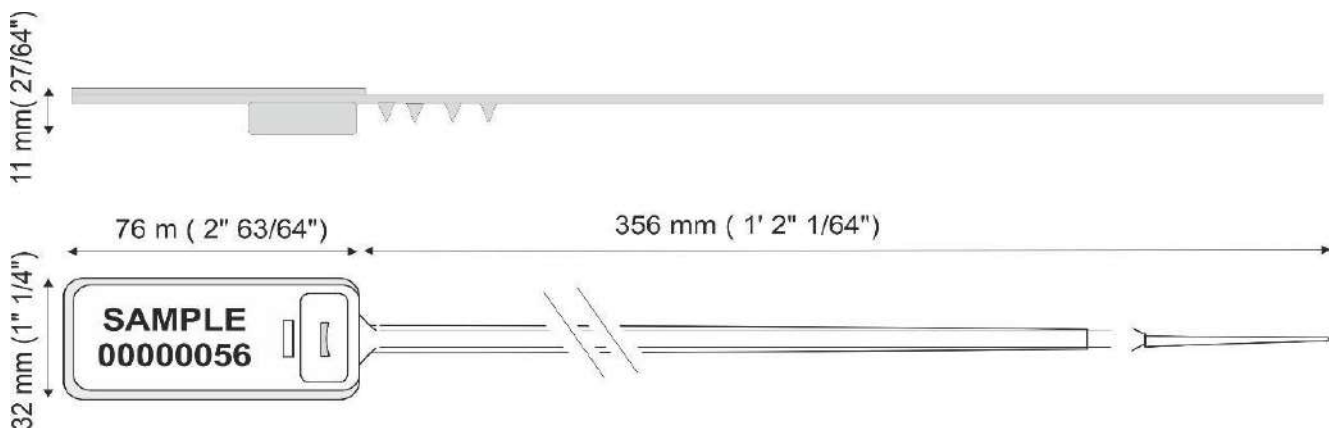
CONNECTIONLOCK HF/NFC/UHF RFID

Logistic RFID seal for pipe/valve meter cover

Tampering prevention security and operating data available in one single solution, with the new RFID seal for meters.

RFID CONNECTION LOCK is an e-seal specifically designed by LEGHORNGROUP for energy meters that combines the mechanical tamper evidence feature with the electronic security offered by RFID, radio frequency automatic identification technology.

RFID CONNECTION LOCK is a protection system for fittings of water and gas supply, simple to apply, which operates as a seal; it is composed of two semi-circular parts that fit together in a permanent way - one inside the other - and that cannot be separated without prior split them. The transparent plastic material with which the seal is realized allows to perform visual inspections and check the correct closure of the valve.

RFID HF / NFC OR RFID UHF SEAL FOR ENERGY METERS

The RFID technology provides automatic, contactless and without line of sight identification of the seal associated with the meter.

- It can be read quickly and accurately through portable devices operated by the staff.

- The RFID chip can also be used to store additional information.

- One can easily write into the chip by using standard RFID read / write devices. The information can be password protected.

The presence of an integrated RFID tag - available in the frequency bands HF/NFC and UHF - not accessible from outside, allows associating a unique serial number with the locking system CONNECTION LOCK, number that can be read remotely and without line of sight with the operator.
With this identifier, the meter is automatically identified, by using RFID handheld readers or even smartphones and tablet from the market, assuming use of NFC technology.

RFID CONNECTION LOCK mounts an RFID tag whose electronic chip has its own unique coding system and cannot be cloned. This feature enables a safe and reliable automatic identification of the seal, or meter / user associated with it.

The outer casing of the seal, made of high-impact resistant polycarbonate can be customized with logo, numbering and alphanumeric code by thermal transfer printing technique, laser engraving, or for volume productions also by embossed lettering.

LeghornGroup

CONNECTIONLOCK HF/NFC/UHF RFID

Logistic RFID seal for pipe/valve meter cover

SPECIFICATIONS

Radiofrequency communication

- Frequency: HF/NFC 13.56 MHz; UHF 860 – 960 MHz – UHF EPC Global
- RF Standard: HF/NFC: ISO/IEC 15693; UHF: ISO/IEC 18000-6
- Technology: Passive
- Tag: NXP ICODE series/NTAG213; NXP, Alien, Impinj.

- Read/Write User memory: yes
- Password Protection: yes
- Read/Write cycles: 10000
- Data retention: 20 years

Performance

- Reading Distance: with handheld reader up to 3 cm with NFC, up to 5 cm with HF, up to 20 cm with UHF (depending on type of reader)
- Quality: 100% performance tested

Mechanical specifications

Art. 311   Art. 312   Art. 313   Art. 314
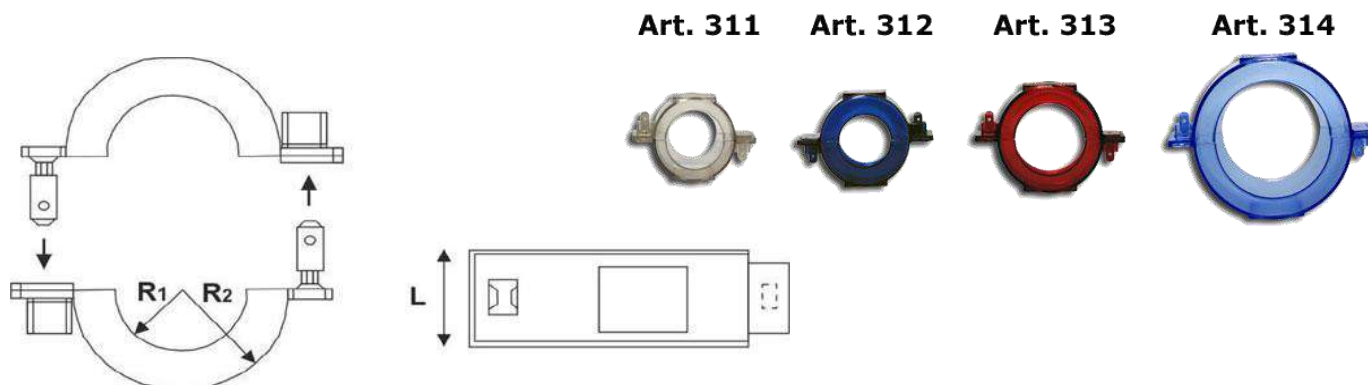
Available sizes

ART 311 : L: 26 mm R1: 16 mm R2: 22 mm; for DN20 (3/4") pipe-fitting
ART 312 : L: 30 mm R1: 16 mm R2: 24,5 mm; per DN20 (3/4") bold pipe-fitting
ART 313 : L: 28 mm R1: 19 mm R2: 27 mm; per DN25 (1") pipe-fitting
ART 314 : L: 38 mm R1: 29 mm R2: 39 mm; per DN40 (1½") pipe-fitting

LeghornGroup

TAGETE

UHF RFID metal plate for container identification

TAGETE by LeghornGroup is the ultimate solution for secure container identification by using UHF RFID plate, designed for application on container surfaces either with strong adhesive or screwing.

Thanks to the particular design and fabrication of the tag antenna, **TAGETE** guarantees a secure automatic identification function in applications on-metal for containers access control and management in port, hub and terminal areas.

The presence of an **integrated UHF RFID chip** is used to associate the ISO unique container serial number. The plate is read at distance and the container or vehicle that is associated to it is automatically recognized, for example using fixed or portable RFID readers.
TAGETE can be customized by printing in black or in four-color logo, barcode or serial number.

UHF RFID TAGETE
RFID PLATE FOR SECURE CONTAINER IDENTIFICATION

The RFID technology provides automatic, contactless and without line of sight identification of the label.

- It can be read quickly and accurately through fixed or portable devices operated by the staff. In case of use of vehicles, the identification and the control they can be operated on-the-go without need for the vehicle to stop.

- The RFID chip can also be used to store additional information.

- One can easily write into the chip by using standard RFID read / write devices. The information can be password protected.

TAGETE

UHF RFID metal plate for container identification

Radio Frequency specification

- Frequency: 860 – 960 MHz - UHF EPC Global
- Reference RF Standard: ISO/IEC 18000-6C
- RF Protocol: EPC Class 1 Gen2 / ISO/IEC 18000-63
- Technology: Passive
- Integrated circuit: NXP G2iM+
- Quality: 100% performance tested
- Memory read / write: Yes
- EPC Memory: 128 bit
- User Memory: up to 640 bit
- Password protection: Yes
- TID (tag unique identification): Yes

Mechanical specification

- Material: PMMA, rubber
- IP Protection: IP65
- Operative Temperature: - 25°C / + 75 °C
- Storage Temperature: - 30°C / + 80 °C
- Size: 170 mm x 230 mm
- Weight: 250 g
- Fixing: with 4 screw or special glue

Electronic specification

- Reading distance handheld reader: 3 m (depending of reader) 10 ft
- Reading distance fix reader: 11 m (depending of reader) 36 ft
- Reading on metal surface: 25 mm distance from metal surface for top performance 82 ft
- Data retention: 20 year

LeghornGroup®

UHF RFID WINDSHIELD TAG

Ultra destructible label for secure identification

WINDSHIELD TAG is the ultimate solution for adhesive UHF RFID security label, designed for application on glass surfaces, such as the windshield of vehicles.

Thanks to the particular antenna realization and to the special adhesive used, the label is damaged irreversibly if you try to remove it from the surface to which it is applied.
It is particularly suitable for secure automatic identification function in application of vehicle access control and parking management.

WINDSHIELD TAG is a security label, of very simple application, which thanks to its mechanical and electrical characteristics operates as a real seal.

The **adhesive for special use** allows to apply the label easily and at the same time guarantees a tenacity for which the label is damaged permanently in an attempt to remove it, thereby preventing unauthorized (re) use (for example in applications of controlled access).
The presence of an **integrated UHF RFID chip** is used to associate an unique serial number to the label: the tag is then read at distance and the object or vehicle that is associated to it is automatically recognized, for example using fixed

or portable RFID readers.

WINDSHIELD TAG **mounts an electronic chip which has its own unique code and cannot be duplicated.** This feature enables a secure and reliable automatic identification of the label, i.e. of object or vehicle associated with it.
The label face, in thermo-printable paper or PVC, can be customized by printing in black or in four-color logo, barcode or serial number.

UHF RFID WINDSHIELD TAG

Ultra destructible label for secure identification

Radiofrequency specifications

- Frequency: UHF 860 – 960 MHz; UHF EPC Global
- RF Standard: UHF: ISO/IEC 18000-6
- Technology: Passive; anti collision
- Tag: Alien H3
- Read/Write User memory: yes, 96 bits EPC, 512 bits
  User Memory, 32 bits TID
- Password Protection: yes
- Read/Write cycles: 10000
- Data retention: 10 years

Performance

- Reading distance up to 8 m, writing distance up to 2 m (depending on the type of reader)
- Quality: 100% performance tested

Mechanical specifications

- Dimensions: 110 x 45 x 0.3 mm
- Material: Thermal Paper / Sticker Printing
- Adhesive Type: 3M for special purpose
- Antenna: Aluminium
- Operating temperature: -15 ° C / + 70 ° C
- Relative humidity: ≤ 80%
- Delivery of labels: Reel of 1000 or 2000 pieces / reel
- Inner reel diameter: 76 mm
- Reel weight: 1 kg

Customisation

- Dimensions on customer's specification
- Pre-printing with logo, barcode or serial number, according to the specified layout
- EPC code initialization

LeghornGroup®

MENTOR SEAL RFID

High security active seal

MENTOR SEAL RFID active high security electronic seal

The RFID technology provides automatic, contactless and without line of sight identification of the seal.

It can be read quickly and accurately through fixed or portable devices operated by the staff. In case of use of vehicles, the identification and the control they can be operated on-the-go without need for the vehicle to stop.

The RFID chip can also be used to store additional information.

Long lasting battery (at least one year of operation),which enables:
Reading in long range distance;
Log of the events occurred to the seals, including timestamp

Specifically designed to introduce a higher security level into the logistics and transport supply chain, MENTOR SEAL is an advanced electronic device that combines top mechanical resistance against breaching with the security of no clonability offered by the RFID, automatic radiofrequency identification technology.

MENTOR SEAL comes with an univocal identification code (ID) stored in the embedded electronic chip: the main functionality of the seal of securing and protecting goods is enriched by the additional capability to optimize transport logistics by tracking the container or the vehicle and monitoring the status of goods.

It records every event occurred to the seal - initialization, closure, attempt to breach and recover, final opening - with time and date of the specific event.

Specifically MENTOR SEAL

- Assures univocal coupling between seal head and bolt. Any attempt to replace the bolt with a new one - different from that initially coupled with the related head during the initialization procedure - will be treated as a tamper event.

- Stores in its internal memory timestamp of
    - seal initialization
    - seal locking
    - seal opening/tampering

![LeghornGroup logo]

MENTOR SEAL RFID

High security active seal

MENTOR SEAL is read either by gates or handheld readers equipped with the read/write unit that communicates with the seal in the operative frequencies of 433 MHz and 2.45 GHz. Thanks to the adopted active RFID technology the communication range can cover long distances (from 15 up to 30 meters depending on the type of reading antennas installed at gate).

READING DISTANCE 15 to 20 m

SPECIFICATIONS

Case material:	Shock-proof polystyrene
Pin material :	Stainless steel
Industrial Protection:	IP65
Operative temperature range:	- 20°C / +55 °C
Storage temperature range:	- 20°C / +55 °C
Size (max volume):	147.6 x 66.42 x 35 mm
Seal head size:	66.42 mm
Metal pin size:	8 mm diameter – 74 mm length
Weight:	180 g
Mechanical closure:	Bolt-lock type
Battery:	3.0V
Memory storage:	1000 data record
Manufacturer code:	UID CODE

LeghornGroup®

ELOCK STANDARD

Electronic reusable security lock

eLOCK Standard Electronic reusable security lock

Prevents internal theft and fraud along the entire supply chain

As soon as the seal is closed, it automatically generates a unique number that can be transferred to the cargo documentation. As long as the display shows the same number when the cargo arrives, you can be sure that the seal was not opened during the trip. If several stops are made on the journey, a new unique number is generated each time.

eLOCK Standard announces the unauthorized opening of the truck / container by generating a random number, which must be the same before and after the delivery of the cargo.

Entry-level product of the reusable electronic locks family manufactured by LeghornGroup, with basic features at a very competitive price.

How eLOCK Standard works?

eLOCK STANDARD works in a very simple way:

- Each time the pin is pulled out of the plug a random number is generated by the e-LOCK, which is shown on the display.
- By pushing the side button, the previously generated number is recalled on the display.

- Rugged housing completely protected from water, dust, salt, dirt and oil. It can withstand severe temperature ranges.
- Easy to attach to the back of a truck either by screws or magnets, by using a special metal plate.
- Easy to use and requires no maintenance
- Long battery lifetime (5000 sealing activities). The battery can be replaced by the user, making the eLOCK STANDARD a very cost effective solution to prevent goods losses along the supply chain, almost maintenance-free.

LeghornGroup®

ELOCK STANDARD

Electronic reusable security lock

Specifications

- Dimension: 106x156x38 mm
- Weight: 590 gr
- Fixing: 4 M6 screws
- Actuator: Mechanical life 1.000.000 cycle
- Operative temperature: -20° C + 50° C
- Storing temperature: -25° C + 80° C
- Battery: Lithium Long life non rechargeable
- Waterproof: IP 66 equivalent
- Case Material: Shock-resistant Polycarbonate and Polypropylene
- Sealing: PVC
- Vibration: Vibration resistant
- Display: LED 5 Digit - Red - Night readable
- Lock plug: Plug with spring lock - Inox AISI 316
- Security: May be locked with other kind of security seal
- Cable   TIR Cable in PVC coated steel cable

ALERT LOCK

Electronic reusable security lock with GSM
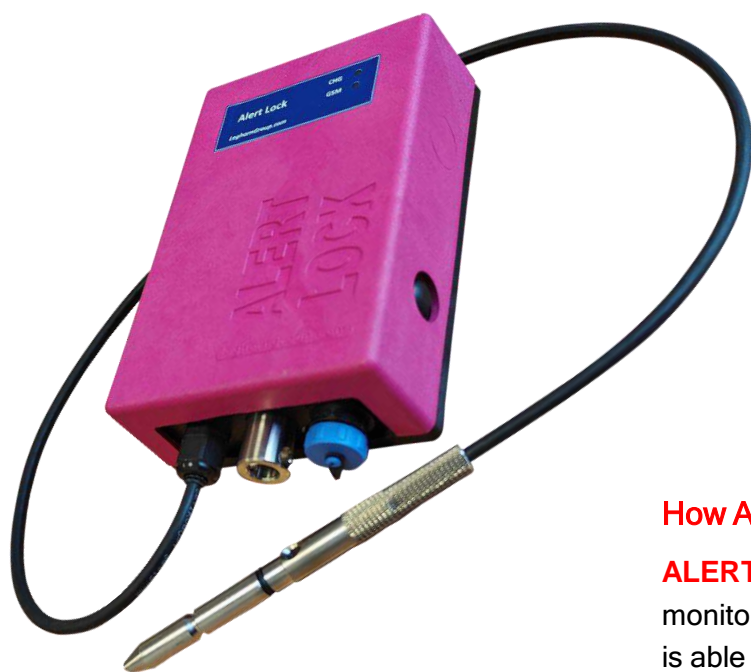
ALERT-LOCK is a device for electronic locking of sites/goods/vehicles, which is equipped with GSM / GPRS communication.

It sends alarms informing about any open/close/tamper event with the device at the time the event occurs.

It has function of event notifications in real time.

How ALERT LOCK works?

ALERT LOCK is a self-powered electronic system for the monitoring of site, goods or vehicles against theft and tampering. It is able to send an SMS alert to a PC or to mobile phones in the event that gates, doors or packages protected by **ALERT LOCK** are opened or tampered with. Furthermore it can be used to protect and monitor access points to controlled areas. The device can be mounted either by screwing it in place or securing it with a magnetic plate.

ALERT LOCK functions:

- ANTI-CUTTING FUNCTION:
  in the event of the security cable being cut, the device sends an alert.
- OPERATIONS IN HARSH ENVIRONMENTS:
  the device, with its robust impact- and vibration-resistant polypropylene case, can work at temperatures from -15° to + 60°.
- REDUCED MAINTENANCE:
  Alert-LOCK does not require any assistance or maintenance.

Typical battery endurance:
- 4 years with 2 data transmissions per day;
- 1 year with 10 transmissions per day;
- 10 days, with continuous operation and transmitting data at 10 minute intervals.
- In standby> 5 years

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ALERT LOCK

Electronic reusable security lock with GSM

Specifications

- Dimension   mm 106,6 X 156,1 X 44,5

- Material   High-resistant polypropylene

- Power supply   5 VDC

- Working voltage   3,3 VDC

- Average current   80 mA

- Current in standby mode: 15 uA

- Internal battery 4,2 VDC 6600 mAh - Lithium battery, rechargeable via USB

- Working hours

  - Two data per day: 4 years

  - Ten data per day: 1 years

  - Continuous every 10 minutes : 10 days

  - Stand by   > 5 years

- CPU Microcontroller System on Chip Cypress ARM Cortex-M3

- GSM GSM/GPRS module : Quectel M95

- Frequency band Quad-band: GSM850, EGSM900, DCS1800, PCS1900 MHz

- LED indicator: for GSM and battery charge

- Operating temperature   -15°C to 60°C

- Storage temperature   -20°C to 60°C

- Cable material   insulated plastics, anti wringing, anti cutter

- Cable length   75 cm

- Closure pin   spring blocking system

- Security   Possibility to block the system by using seals

- Log memory   Last 3650 data recorded

- Data program /Data download/Firmware upgrade: via USB

ELOCK GOLD

Electronic reusable security lock with GSM and GPS

**eLOCK GOLD
Electronic reusable
security lock with GSM
and GPS functionalities**

Real time alerting and
recording of any access to
the goods transported or
stored: opening, closing or
tampering (id device, type
of event, date and time).

It has a long operation
time thanks to its long
lasting battery rechargeable
via USB.

GPS tracking for location,
control, geofencing.

eLOCK GOLD Advanced
electronic reusable security
lock, to control position and
status of trucks and
containers, either from

fixed station or from mobile
devices (smart phone and
tablet).

Equipped with GPS and
GSM/GPRS modules, it

enables getting real time
logistic information of
identification together with
the one of traceability.

eLOCK GOLD sends an SMS
alert any time the lock register
an event of opening/closure,
tampering attempt (e.g. the
cable is being cut), battery is
low. Alert message includes ID,
event type, GPS coordinates
for the place the event took
place at, and time stamp.

How eLOCK GOLD works?

Thanks to its advanced technical features, **eLOCK GOLD**
performs:

MONITORING thanks to its ability to communicate in real-time
with IT systems for logistics and transport, it informs about
the complete data on fleets and individual vehicles.

ANALYSIS of the data for the entire fleet relating to individual
drivers, with the possibility of intervention and planning of
activities.

CONTROL through real-time access to data on vehicles and
drivers, and to the position marked on the map by using
GPS tracking.

*used together with the
platform it is a powerful
instrument for vehicles and
goods monitoring and
tracking.*

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ELOCK GOLD

Electronic reusable security lock with GSM and GPS

Specifications

- Dimension   mm 106,6 X 156,1 X 44,5
- Material   High-resistant polycarbonate
- Power supply   5 VDC
- Working voltage   3,3 VDC
- Average current   80 mA
- Current in standby mode: 15 uA
- Internal battery 4,2 VDC 6600 mAh - Lithium battery, rechargeable via USB
- Working hours
    - Two data per day: 4 years
    - Ten data per day: 1 year
    - Continuous every 10 minutes : 10 days
    - Stand by   > 10 years

- CPU Microcontroller System on Chip   Cypress ARM Cortex-M3
- GSM GSM/GPRS module :   Quectel M95
- Frequency band   Quad-band: GSM850, EGSM900, DCS1800, PCS1900 MHz
- Antenna   Internal antenna
- GPS   Compact GNSS Module, U-blox SAM-M8Q-0-10 GPS + GLONASS
- Positioning accuracy   2,5 m
- GPS sensitivity   165dBm@Tracking, -158dBm@Acquisition, -146dBm@ColdStart , -155dBm@HotStart

- Positioning time   Cold Start <26s; Hot Start <1s
- Satellite receiving channel: 72 channels
- Antenna   embedded patch antenna
- LED indicator :   for GSM / GPS status and battery charge
- Operating temperature   -15°C to 60°C
- Storage temperature   -20°C to 60°C
- Cable material   insulated plastics, anti wringing, anti cutter
- Cable length   75 cm
- Closure pin   spring blocking system
- Security   Possibility to block the system by using seals
- Log memory   Last 3650 data recorded
- Data program /Data download/Firmware upgrade: via USB

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SPYLOCK

Quantum leap for security in transport

Registration of any unauthorised access to goods, either transported or stored (opening, closing or alteration). Registered data are device id, type of event, time stamp.

Long operational autonomy thanks
To long life battery, usb rechargeable.

Built-in nfc technology,
For operator identification.

You Tube

https://www.youtube.com/watch?v=f7ft gr7wice

SPYLOCK is a reusable electronic lock specifically designed for greater security in the supply chain of transport logistics.

SPYLOCK combines security and ability to monitor the status of the goods transported by trucks, trailers and containers through the following features: Record any access to goods: opening, closing or tampering (device ID, and time).It has a long operating time due to power with durable battery (USB rechargeable).

The need

Providing consumers and businesses around the world with the huge variety of products they need would be impossible without modern transport logistics on land, sea and air and, with increasing globalization, the security issues related to all this movement are more and more significant. Valuable goods must be protected from various threats: theft, accidents, sabotage, robbery.

Experience has shown that operators may alas be responsible for a part of the theft that occurs, which means it is no longer enough to rely on tamper-proof containers and access controls. You need an additional level of security, something that allows you to monitor what is happening across the entire transport chain.

The solution

SPYLOCK fully meets this need, thanks to its features that allow:

identification both of the operator and the device used;

recording of any event occurring to the device: closing, opening, tampering; ability to

upgrade with additional feature of GPS tracking.

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SPYLOCK

Quantum leap for security in transport

Specifications

▪	Dimensions:	131 x 67 x 35 mm
▪	Wire standard length:	110 mm
▪	Wire diameter:	2,5 mm
▪	Weight:	180 g
▪	Wire material:	Stainless steel
▪	Device enclosure:	ABS
▪	Industrial protection class:	IP65
▪	Mechanical closure:	Closing actuatocoupling with spring button
▪	Operative Temperature:	- 20°C / +55 °C
▪	Storage Temperature:	- 20°C / +55 °C
▪	Display:	Backlit White, 32 characters (2 x 16)
▪	Communication interface:	USB 2.0
▪	Battery	Rechargeable 1100 mAh 3.7V
▪	Memory storage:	1000 data record
▪	Password protection:	Software
▪	Tamper security:	Sensor to detect case opening
▪	Manufacturer Code:	UID CODE
▪	Management Code:	Software Code
▪	RFID:	HF NFC Tag

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JANUS GATE

UHF RFID Gate

It is an «all-in-one» automatic identification RFID UHF ISO/IEC 18000-6C compliant system specifically designed and manufactured to monitor and manage the movement of trucks and containers and their access to terminals, hubs, ports.

This system, built on smart UHF RFID reading units and passive (battery-free) RFID UHF seals - named e-SEALS, is able to identify and monitor in a reliable and secure way trucks, trailers, and containers.

JANUS-GATE: RFID UHF GATE

is made up of a top perfoming reader and two antennas that are capable of **reading the RFID e-seals applied on truck/container regardless of their position or condition, distinguishing even between two containers that pass simultaneously in adjacent lanes.**

JANUS GATE

UHF RFID Gate

RF protocol	**EPC Class 1 Gen2 – ISO/IEC 18000-6C**
Operating frequency:	865-869 MHz, ETSI EN 302-208
Communication protocols:	ISO 18000-6C; EPC Class1 Gen2;
Antennas:	Special integrated system of 2 antennas
RF Power:	Software programmable up to +32.5 dBm (+30dBm if used in POE mode)
Reader power supply:	POE IEEE802.3 or 24 Vdc, 0,8A with external power supply
Main:	100-240 Vac, 50/60Hz
Communication ports:	Ethernet 10/100 Base-T Ethernet (RJ45);
Ext Sensors / Photocells	To trigger reading signals
Address configuration:	DHCP, Static, LLA + mDNS
Environmental conditions:	Operative temperature: -20°C +50°C Stock Temperature: -20°C +60°C
Base module size	560 x 270 mm +/- 5%
Weight:	4000 g
Certification:	CE (FCC also available)
Housing:	Anodised aluminum & Polyethylene
IP protection	IP55

RFID TROLLEY

The simplest way to read RFID seals on the field

RFID TROLLEY is a self-standing and moving- on-wheels UHF RFID read/write solution for:

▪ Fast and efficient inventory operations.

▪ Outdoor logistics operations, whenever it is not possible nor convenient to set fixed reading equipment.

RFID TROLLEY has been specifically designed to work in harsh environment (industrial and outdoor) and with its robust IP65 stainless steel case and antennas it is the best work companion to carry out RFID reading operations in any operation area where fixed solutions are not possible or convenient.

RFID TROLLEY mounts adjustable high-performance antennas (up to four), which helps in finding the best placement to assure maximum reading efficiency and reliability.

RFID TROLLEY has wheels and handle that make very easy and light to move it across different areas, enabling RFID reading operations in modes and places that were not possible before, like for instance reading RFID seals on-the-go at harbour docks directly when loading-unloading containers into ships.

RFID TROLLEY comes together with a rugged tablet, Android OS, useful to set reader operation modes accordingly to different locations and to control data flow by operator. A suitable pocket is placed inside the trolley case to safely store the tablet when unused.

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RFID TROLLEY

The simplest way to read RFID seals on the field

RFID TROLLEY

Main technical features
- Top performing RFID UHF reader
- Two/Four adjustable external antennas
- Lights for feedback to operators
- Battery supplied with working endurance higher than eight hours
- Communication interfaces: Ethernet, GSM/GPRS
- Tablet with pre-installed SW for trolley set up diagnostics, and maintenance

RFID specifications:
- UHF Long Range Reader with GPRS
- EPC C1 G2, ISO 18000-6C Compliant
- Multi-Regional Support
- Embedded Intelligence
- Ethernet Port
- USB 2.0 High Speed Host Port
- Internal MicroSD slot
- Integrated GPRS modem (optional)

Mechanical specifications:
- Metal cabinet size: cm 55x75x25
- Overall Trolley size: cm 55x110x60
- Antennas bar length: cm 150
- Weight : kg 55

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RFID READER - WRITER

EPR AT880 Hand-Held UHF RFID Reader

EPR AT880 is a PDA WM 6.5 full option, provided with both UHF and HF RFID frequency, which allows to develop a solution based on personal application requirements.

Main technical specifications:

- Windows CE 5.0 / Windows Embedded handheld 6.5
- Processor Marvell PXA 320 806MHz
- Memory   RAM: 256 MB (optional 512 MB)

  ROM: 512 MB (optional 1 GB)
- RFID UHF 900 MHz GEN2, ISO / IEC 18000-6C / 18000-6B (optional)
- RFID HF 13.56 MHz ISO15693, MIFARE, ISO14443 A / B (optional)
- Barcode Engine 1D Laser o 2D Imager Scanner (2D long-range barcode reading)
- WLAN IEEE802.11 b / g / a (a / b / g / n, optional)
- Bluetooth Class II, v2.1 + EDR
- Camera with Flash
- GPS

RFID READER - WRITER

EPR AT880 Hand-Held UHF RFID Reader

Specifications

- Physical Characteristics (LxWxH): 159 x 79 x 27,7 (35,2) mm
- Weight: 280 g (PDA only, without battery)
- Reading range: 0M ~ 5M (according to Tag & Environment)
- Protocol: GEN2, ISO / IEC 18000 - 6C / 6B (optional)
- Frequency range: CE ETSI 865 MHz ~ 868 MHz, FCC 902 MHz ~ 928 MHz
- Operating temperature: -20 ° C ~ 60 ° C;
- Storage temperature: -30 ° C ~ 70 ° C
- Humidity: 95% non-condensing
- Power:
    - Main Battery lithium-Ion Polymer 3,7 V 2,970 mAh (rechargeable).
    - Backup Battery lithium-Ion Polymer 3.7 V 80 mAh (rechargeable).
    - Power adapter input AC100V ~ 240 V / output DC 5V 3A

Processor and memory

- Processor: Marvell PXA 320 806MHz
- Memory: 256 MB (512 MB optional) RAM / 512 MB (1 GB optional) ROM

ACCESSORIES

Adapter AC Cable

Protection Film

USB Cable

Handstrap

Stylus Pen

OPTION

Cradle

GUN Handle

Applications:

Distribution:	Provisions general monitoring
Healthcare:	Monitoring and healthcare inventory
Warehouse:	Provisions monitoring and inventory
Logistics:	Shipping and receiving
Transport:	Transport routes accounting
Production:	Production progress control

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NFC READER - WRITER

EPR CM398 Hand-Held NFC RFID Reader

EPR-CM398 is a high speed Quad-core industrial Android smart phone. It integrated UHF RFID reader and NFC for easy data capture. It supports Wi-Fi, Bluetooth, GPS, GSM / 3G, which make communication conveniently. With protection rate of IP65, it can withstand use in all kinds of rough environment.

Main technical specifications:

- O / S: Android v4.1.2 operative system
- Processor Qualcomm MSM8625Q, Quad-Core 1.2GHZ
- Memory : Flash ROM 1G RAM + 4G; Expansion (microSD) 32G (maximum)
- Display: 3,8 " capacitive multi-touch screen; Resolution: 800 * 480 dpi
- Data entry method: handwriting, keypad; 12 alpha/numeric keys; 2 telephone keys
- Port: USB 2.0, support OTG
- Power: 3,7 V Li-Polymer battery 1900 mAh, 4000 mAh (optional); Standby time: 72 ore; Charging time: 5-6 hours
- Communication: WLAN: Wi-Fi IEEE802.11b / g - GSM / GPRS / EDGE 850/900/1800 / 1900MHz - WCDMA 2100MHz, CDMA2000 - Bluetooth 4.0
- NFC, HF: 13,56 M (ISO14443A / B, Protocol 15693), reading distance 4 cm.
- RFID UHF, UHF: 920-925 MHz (EPC C1 / G2, 18000-6C Protocol), reading distance up to 40-50 cm according to different tags.
- Camera: 5.0 Mega Pixel, auto focus, with LED light
- Barcode: 1D barcode that ca be decoded via camera
- Scanner: 2D image : readable QR code via camera
- GPS: built-in GPS SIRF, support A-GPS
- Size (L x L x A): 135 x 69 x 16 mm; Weight: 150g (battery included)
- Colour: black

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PROTECTION - CONTROL - IDENTIFICATION - TRACKING - RFID SOLUTIONS