HID GLOBAL INDUSTRIAL SMART COMPONENTS: WHAT TO USE WHEN

POSITIONING

WHITEPAPER

HID Global is the leading RFID supplier of choice for systems integrators, application developers and providers serving a variety of markets, including logistics, waste management, returnable transport items, asset tracking, automation, medical, laundry and animal identification.

The HID Global Identification Technology business unit designs and delivers a full range of RFID system components including reader boards and robust tags in frequencies ranging from low-and high-frequency (NFC) to UHF (RAIN RFID) and Bluetooth® Low-Energy (BLE) via HID Global.

The RFID tags from HID Global can be custom designed and programmed to create innovative or specialized RFID solutions. HID Global technology supports chips from all major manufacturers, including:

Swiss engineering combined with a HID Global-owned Malaysian, fully automated, ISO 9001:2015 certified production plant, ensures genuine quality and affordable RFID tags.

The objective of this paper provides an overview on the current standard industrial HID Global RFID tag portfolio and provides a guideline of the RFID tag family's main propositions.

Please note, this document provides just an overview on HID Global's standard tag offering. With historical true expertise and quality manufacturing capabilities, HID Global is more than happy to support custom design requests for large scale special applications or OEM customers.

For more information, please

- download the technical comparison chart,

- visit www.hidglobal.com/rfid or

- email tagsales@hidglobal.com

CONTENTS

HID UHF (RAIN®) Tag Families

EXO Tag   [Datasheet](#)   [Website](#)

The EXO Tag family is a set of highly robust general purpose UHF hard tags, with multiple fixation options, worldwide UHF broadband capability and excellent performance also in outdoor environments. The tags perform equally well on- or off-metal and the 3D antenna makes the tag highly readable from all directions. The optional steel ring allows some models to be spot-welded on steel for ultimate fixation.

EXO Tag Family

EXO Pro Tag   [Datasheet](#)   [Website](#)

The EXO Pro Tag family is a highly robust, all-purpose RAIN® UHF tags mount to any surface material delivers long read ranges. The tough and versatile EXO Pro Tag transponders are available for mounting on metal, plastic or wood using standard screws, rivets, industrial adhesives or welding. The special material and over-molded construction of some EXO Pro tags provides even greater impact protection and extra resilience against aggressive chemicals like Caustic Soda. The EXO Pro InLine Combo version includes a chip for industrial HF or NFC interaction in addition to RAIN® RFID logistics.

EXO Pro Tag Family

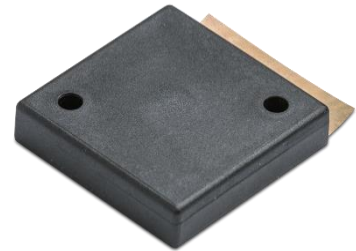**IronTag®**   Datasheet   Website

IronTag is a light-weight on-metal only tag optimized for high temperature resistance. The tag is available in US or EU frequencies and is designed to meet aerospace standards. The tag is optionally available with an adhesive sticker designed to withstand the same high temperatures as the tag. IronTag 206 has a built-in Monza X UHF chip delivering 8 KB of user memory, making it ideal for special applications that need to store significant amounts of data on the tag itself

IronTag 176   IronTag 206   IronTag 206F with Sticker

IN Tag™   Datasheet   Website

The IN Tag family includes a set of disc shaped transponders that are highly ruggedized and ideal for multiple industrial applications. Ultrahigh frequency (RAIN® UHF) IN Tag RFID tags can be read from up to 9.8 ft (3 m). Entire pallets of individual containers or equipment may be identified. The tags are food compatible, flame resistant and ATEX certified. UHF IN Tag transponders are available in 50 or 55 mm diameter with G2IM chip. IN Tag 500 are also available in on-metal versions.

In Tag 500 UHF   In Tag 500 UHF On Metal

EXO Keg Tag   [Datasheet](#)   [Website](#)

The EXO Keg tag family is a set of on-metal hard tags designed to fit on steel kegs, gas bottles and other curved metallic surfaces to track product lifecycle and endure the harsh treatment of kegs and tags along the way (washing, disinfection, transport, …). Tags applications are meant to be glued or welded. A combo version with NFC and RAIN® RFID using Impinj Monza R6-P is available for special applications that need both interfaces.

Keg Tags – UHF & Combo UHF/NFC

SlimFlex™ Tag   [Datasheet](#)   [Website](#)

The SlimFlex Tag family encompasses durable and flexible broadband UHF tags. These tags are ideal for indoor and outdoor use on irregular surfaces and may be inscribed with laser engraving. The SlimFlex tags come in multiple variations of frequency and form factors. Affixation is via rivets, glues or cable ties.

SlimFlex Tag Standard-301

SlimFlex Tag Standard-200

SlimFlex™ Tag Family

SlimFlex™ Seal Tag vTamper   [Datasheet](#)   [Website](#)

The Seal Tag family inherits all the merits of the SlimFlex family, and includes a built-in cable tie for fast, visually tamper evident application. The tag is available in different sizes to suit various applications.

SlimFlex SealTag with integrated cable tie for Mining (left), Seal Tag Mini compared to full-size Seal Tag (right)

Seal Tag UHF edTamper   [Datasheet](#)   [Website](#)

Each Seal Tag edTamper are tamper evident passive contactless RAIN UHF transponders allowing detection of their seal status via RFID. Visualizing the tag is not necessary to identify broken seals. The edTamper tags-provide a digital notification if a sealed tag has been compromised to quickly scan large sets of sealed items for integrity.

Seal Tag edTamper UHF

LinTRAK™   [Datasheet](#)   [Website](#)   HID Textile **Services**

LinTRAK Tag represents some of the most robust RAIN RFID laundry tags on the market. The tags are guaranteed to withstand 200+ commercial linen washing cycles while their patented design prevents the tags from decreasing performance over time. Applications vary based on customer preference, stitching, heat-sealing or embedding in a pouch or pocket. Different sizes and fixation options. OEKO-TEX standard 100 Level 1 certified, MR-compliant. Fully compatible to commercial RAIN RFID laundry systems even in mixed tag environments. Optimized with HID ACUITY Linen Management software and UHF RFID stations (see page 26 for more details).

LinTRAK Chip: MONZA 5 and R6P

IQ Pro Labels   Datasheet   Website

This thin and flexible label is flame resistant and meant to survive the high temperatures of paint-shop processes during automotive production. The label can be produced in custom shapes and optional laser engraving with graphic or text for optical recognition.

HID IQ Pro Labels 800P HT & 400P HT

IQ Pro Label 400PC   Datasheet   Website

The thin IQ Pro 400PC is optimized for non-metallic flat or slightly curved surfaces. Its special construction ensures a higher durability compared to traditional label designs. Optional laser marking is performed into the structure of the tag to make it permanent. The IQ Pro 400PC tag is delivered as single pieces with strong adhesive and easy peel off tape for fast mounting.

UHF IQ Pro 400PC Label - 50 × 24 × 0.7 mm (Laser marking optional)

Epoxy Tag   Datasheet   Website

Epoxy Tags are thin (0.04 in / 1 mm), printable hard tags, available in different diameters for UHF, HF and LF. These tags are broadband, off-metal use only and survive multi-year outdoor use. Due to their high temperature and chemical resistance, they may be used to be molded into boxes or crates via plastic injection.

Epoxy Tag UHF

EXO Slim Tag   Datasheet   Website

The robust EXO Slim InLine Plate Tag is designed for outdoor use attached to industrial containers or similar equipment needing a "license plate" type of tag. The tags are very thin (0.14 in / 3.7 mm) to closely stack containers without interference. The large plate surface provides the ideal space to incorporate visual content via laser inscription and/or stickers for long range readability. Separate US and EU versions optimize the performance for on-metal use. However, when applied off-metal, the tag is broadband for worldwide use. EXO Slim SHELL low-profile RFID tags are ideal for light-duty indoor assets tracking. SHELL+ tags are ultrasonic sealed with a plastic back side to screw, while SHELL tags come with a sticker instead of the plastic cover on the back for easy application.

EXO Slim InLine Plate Tag - EXO Slim 800P - EXO Slim 750P - EXO Slim 1000 Shell+

FIT Ceramic Tag   Datasheet   Website

HID Global FIT Ceramic Tag passive contactless transponders easily integrate into RFID applications requiring discreet placement of small, featherweight tags that deliver sustainable performance. Applications vary based on customer preference, adhesive or enclosure for asset tracking, logistics or medical and health areas.

UHF FIT Ceramic Tag 220HT & 400HT

MuTRAK Tag   Datasheet   Website   HID Textile **Services**

Very small UHF transponder for proximity identification. One of the sturdiest encapsulated UHF tag on the market. Low-cost and easy to affix onto small textile items, sewn inside a pour or hem or heat-sealed under a small patch.

Chip: M730. Ideal for small personal textile items

Near-Field Coins   Datasheet   Website

The LogiTag™ 180 near-field coin is designed to be embedded into other objects (usually at production time) that shall become identifiable via UHF. Due to the near-field technology, read range is reduced to levels like HF and LF. However, the tags can be processed with standardized UHF reader and software equipment and are less sensitive to water or other environmental influences.

LogiTag 180 Near-field UHF

Ear Tag   Datasheet   Website

The RAIN® RFID management ear tag by HID Global, extends the traditional low-frequency Animal Identification schemes with a new long-range UHF option. Such a tag enables livestock like cattle to be automatically counted and identified when walking through a reader gate or entering a feeding station.

UHF Ear Tag - 116 × 77 × 1.7 mm

Bin Tag   Datasheet   Website

Bin Tags have a standardized form factor according to DIN 30745 to fit into plastic household waste bins. Bin Tags are available in UHF, HF and LF with different chips and encoding schemes to suit different waste management markets.

Bin Tag Family

ISO Cards   Datasheet   Website

ISO cards are typically used as employee badges or loyalty cards for parking lot or building access etc. HID Global is an expert in card production and can provide cards with virtually any card related technology inside (card material, chip, antenna design, etc.) or outside (printing, holograms, optical security, etc.).

3-Tech ISO card (LF, HF, UHF)
Also available as single- or dual-frequency - card with optional contact chip etc.

IQ Labels & IQ OM Labels   Datasheet   Website   (OM) : Datasheet   Website

HID Global offers a selection of clear or white printable RAIN RFID Labels in standard or custom designs for on- or off-metal use.

Example of clear and white RAIN RFID labels

Example of On-Metal RAIN RFID label

Adept Tags   Datasheet   Website

In-house innovations. It is not uncommon, for example, to require a strap attachment tag for large cylinders, extra high-memory, or a steel encased tag suited to very heavy industry. Adept: a family of industrial RFID tags for specialty use cases and non-traditional applications.

Adept Family
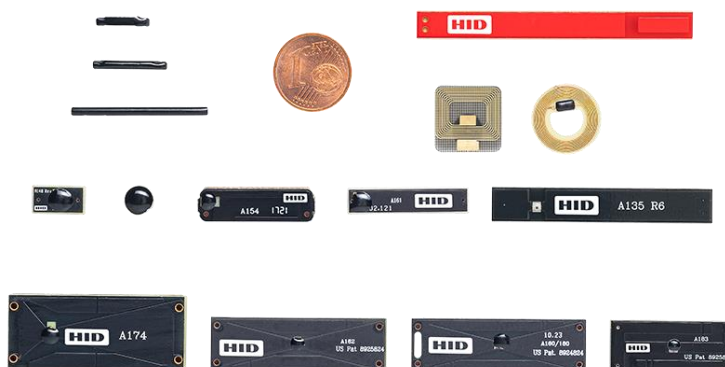
Sense Passive Tags   Datasheet   Website

The HID Sense 'passive' tags Family available sit alongside their 'active' cousins in the HID Sense IoT range that provide low-powered, long-range tracking and sensing via Bluetooth, LoRaWAN and Quuppa. The new passive Sense range includes ceramic tags and printable (pre-printed from Service Bureau) on-metal and off-metal self-adhesive labels which can accurately read live temperatures as low as -40°C and up to 125°C, detect the presence of moisture and indicate the volume of liquids in containers.

Sense Passive Family

Sentry PCB Tag   Datasheet   Website

The RAIN RFID Sentry PCB tags are small footprint, low profile, RFID tags that provide exemplary read range for tags that are so small in size and have minimal ergonomic impact. Sentry line of high-performance, cost-effective and application-specific RFID tags are based on a printed circuit board platform. This well-established manufacturing process offers unsurpassed reliability and consistency in read range performance. Sentry Instrument is a special variant with an ultra-low profile optimized for long metallic tools like medical instruments or scissors. Most Sentry tags can be upgraded to a "Pro" version allowing them to withstand more than 1.000 autoclave cycles.

Sentry PCB Tag Family

Sentry Cable Tag   Datasheet   Website

The PCB-based HID Sentry Cable tag has a low profile — just 2.8 mm tall — and a very small footprint of 36 mm x 11 mm. Rental companies in the audiovisual industry, but also in construction or IT, face the challenge of optimizing logistics and generating a reliable inventory and workflow around the cables they handle every day. The Sentry Cable RAIN RFID tag has been specifically optimized to work on insulated metal and is available with a set of durable tag holders that allow for reliable mounting on professional cables of different dimensions.

Sentry Cable Tag - Chip Impinj M750

HID LF and HF (NFC) Tag Families

IN Tag™   [Datasheet](#)   [Website](#)

The IN Tag family includes a set of disc shaped transponders that are highly ruggedized and ideal for multiple industrial applications. The tags are food compatible, flame resistant and ATEX certified with radiation resistant FRAM options up to 8 KB of memory. IN Tag transponders are available in 20, 30 or 50 mm diameter with various chip options in LF and HF frequencies. IN Tag 200 and 500 are also available in on-metal versions.

IN Tag family

InLine™ Asset Tag   [Datasheet](#)   [Website](#)

These small on-metal NFC asset tags utilize HID Trusted Tag® Services for authentic "proof of presence" while remaining fully NFC compatible without requiring a special APP. The white asset tag version may be printed or laser engraved from stock, while the transparent version is custom built upon order with printing underneath the transparent housing for increased robustness and durability of the optical personalization.

InLine Asset Tags for HID Trusted Tag Services

World Tag™   [Datasheet](#)   [Website](#)

The World Tag family is a set of LF disc shaped transponders suited for low cost, indoor use applications. Like IN Tags, they are available in 20, 30 or 50 mm diameter.

World Tag Family

FIT Brick Tag   [Datasheet](#)   [Website](#)

The FIT Brick Tag family is a set of LF/HF passive contactless transponders easily integrate into RFID applications requiring discreet placement of small, featherweight tags that deliver sustainable performance.

FIT Brick Tag Family

Logi Tag™   [Datasheet](#)   [Website](#)

The LogiTag family incorporates a set of small disc shaped transponders in LF or HF that are optimized for highly robust uses, including, industrial laundry or medical applications. Among the smallest HF tags available, Logi Tag 081 and 121 units are assembled using patented DBond™ Vigo™ technology that enables to produce tags in thinner, smaller formats without compromising performance. Logi Tag's small form factor paired with excellent environmental and chemical resistance. Special versions include a button shape, a disc for on-metal use and radiation resistant high-memory FRAM tags. Logi Tag 161 versions are available with ATEX/IECEX certificates for use in potentially explosive environments of mining, gas and dust.

Logi Tag Family

BluTag   [Datasheet](#)   [Website](#)   HID Textile **Services**

One of the sturdiest and most resilient encapsulated HF tags, ideal for garments. Easily sewn into the hem or seam of a garment, uniform, or linen. It may also be affixed to custodial supplies, such as mats, mops, washrags and towels.

High water, chemical, heat and pressure resistance

Glass Tags   Datasheet   Website

HID Global manufactures millions of glass tags every year for Industrial and Animal-ID use. Glass tags are available in different sizes and LF/HF chip formats. For industrial use, glass tags are often embedded by customers in dedicated housing or enclosures. Standard glass tag dimensions range from 1.2x8 mm (nano) for Animal ID use, via 2x12 and 3x13 up to 4x22 mm. Alternatively, e-rods (the electronics inside a glass tag) are also available for customers to embed directly into a custom housing e.g. an animal ear-tag they manufacture.

Glass Tag Family

Plug Tag / Nail Tag   Plug: Datasheet   Website   Nail: Datasheet   Website

Plug Tags and Nail Tags are examples of special tag form factors that include a glass tag. These LF transponders are ideal to be inserted into pre-drilled holes with a simple and quick push. Tag is securely in place without the need for additional tools or glue.

Plug Tag   Nail Tag

Poly Tag® Datasheet Website

Poly Tags are rugged discs available in various LF or HF/NFC chip configurations including HID Trusted Tag® Services and are highly impact resistant. Tags are ideal for outdoor maintenance or proof of presence applications and can be laser engraved with the chip serial number for optional optical identification. The yellow Poly-Tag versions are flame resistant according to UL 94 V-0 and available with ATEX/IECEX certificates for use in potentially explosive environments of mining, gas and dust.

Poly Tag (laser engraved serial number)

Seal Tag HF eTamper Datasheet Website

In contrast to traditional visually tamper evident (vTamper) tags that keep working when the seal is broken, the electrically tamper evident (eTamper) tags of HID global stop working when the seal is broken, which ensures that the tag cannot be removed and re-used anywhere else. Available in various LF or HF/NFC chip configurations including HID Trusted Tag® Services.
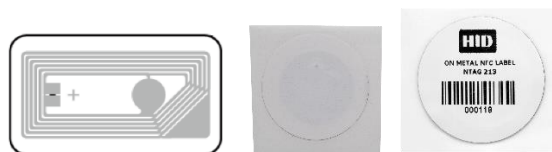

SealTag eTamper (left), SlimFlex SealTag vTamper (middle), Coin eTamper, Label edTamper (right)

IQ Labels Datasheet Website

IQ Labels are provided as NFC technology that enabled the convergence of social media, localized promotional efforts and mobile technology, empowering marketers with unprecedented tools to promote products and services while rewarding customer loyalty. HID Trusted Tag® (NFC Forum tag type 4 and 2) for use cases that need secure authentication or more memory.

Examples of HID Global IQ Labels, off- metal (left) and on-metal (right

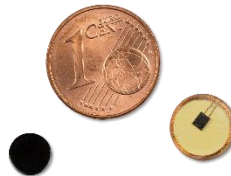**ClearDisc**   Datasheet   Website

ClearDisc transponders are available in many different diameters and LF or HF chip formats. Typically, they are embedded by the customer in another form of enclosure or directly into the tagged product. HID Global's patented DBond™ technology allows welding the antenna wire directly onto the tiny chip, instead of requiring a big chip module - as shown in the image below. Leveraging DBond™ and HID Global's automated production with low deviation, make it possible to produce an innovative design of the ClearDisk that features a pass-through hole allowing for pipe or cable insertion to embed such a tag into bottles, cartouches, filters, pipes etc.

ClearDisc with module (left) and in ring form with DBond™ technology (right)

Piccolino Tag™   Datasheet   Website

The Piccolino Tag family is ideal for extreme space restricted applications needing a disc shaped transponder in HF. Like the IN Tag, chip options for this family include a radiation resistant FRAM technology immune to gamma –sterilization and offers significantly higher write speed, user memory and write cycles than typical EEPROM based chips.

Piccolino Tag 6 mm (black) and 9.5 mm (yellow)

identiFUEL™ Vehicle Tags   Datasheet   Website

The HID Global identiFUEL™ Vehicle Tags are maintenance-free passive low-frequency (LF) RFID tags. Designed to be mounted next to most industrial vehicle fuel inlets, the tags wirelessly identify the vehicle and fuel type required when used with a corresponding Fuel Management System (FMS).

identiFUEL™ Vehicle Tags

Prelaminates   [Datasheet](#)   [Website](#)

In addition to finished ISO cards, HID Global also offers prelaminates in high volume supporting various chip and design requirements to professional card manufacturers.

HID Global offers prelaminates in various formats, colors, materials and antenna designs
(LF, HF, UHF, Dual Interface, multi-technology)

Key Fobs   [Datasheet](#)   [Website](#)

Besides ISO cards, also a range of Keyfobs and ID Bands are available with a variety of LF and HF chipsets.

Some standard keyfob models – Custom designs on request

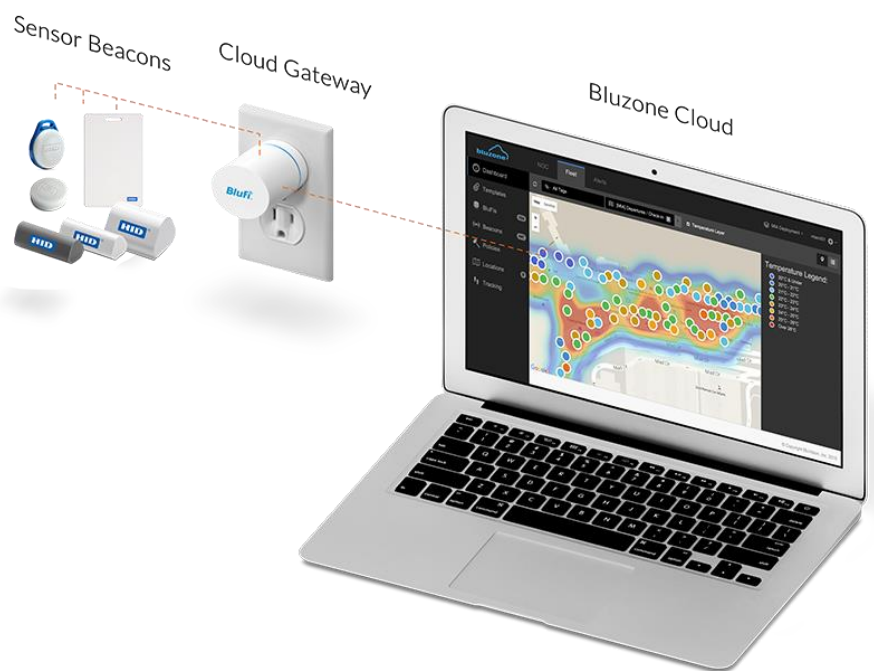# Bluetooth® Low-Energy Active Tags:

HID – Complete IoT platform   Datasheet   Website

HID Global is a leading Bluetooth® Low Energy provider in the enterprise Internet of Things (IoT) market.

The main offerings include:

- Software-based Real Time Location Systems (RTLS) solution – Tracks people or assets down to ~6 ft or 2 m accuracy with minimal infrastructure (beacons and gateways).

- Calibration-free proximity based location systems - Ideal for monitoring physical gateways and portals and to detect when an asset comes in proximity to a specific area.

- Condition monitoring of motors and motorized equipment – Helps early detection of motor failure by monitoring the motors' temperature and vibration data.

HID Location Services and Condition Monitoring offer a complete end-to-end IoT solution including hardware (sensor beacons and Bluetooth to WiFi gateways), REST-API access, and SaaS software for asset location, health and performance.

HID Global Solution Overview

BEEKs™ Sensor Beacons   Datasheet

HID sensor beacons come with longest battery life in the industry (3 to 10-year battery life), provide location accuracy within one-meter and support multiple beacon protocols, including iBeacon, Eddystone and sBeacon simultaneously. BEEKs™ beacons are available in several form factors, are IP67 water-resistant, and are encrypted to meet the security concerns of fortune 100 companies.

Examples of HID BLE Beacons

BluFi™ – Bluetooth® to WiFi Gateways   Datasheet

BluFi™ gateways provide cloud connectivity without the need for smartphone application. BluFis enable remote, beacon fleet management for monitoring beacon status, battery life and for pushing firmware updates. The gateways are A/C powered, but battery powered and Power-over-Ethernet BluFis are also available.

HID BLE BluFi Gateway in US AC plug (left) and complete family (right)

Bluzone™ Cloud Solution   Datasheet

The Bluzone™ cloud provides actionable data on events associated with assets like Location, condition, telemetry data, etc. Bluzone allows users to create user-defined policies and receive real-time alerts when these policies are breached. The base module provides functions for remote management of BLE beacons

and gateways. It can be extended with options for location services, workplace optimization and condition monitoring.

Sense IoT Devices   Datasheet   Website

Sense range showcases a comprehensive suite of powerful, long-lived, energy-efficient sensors with a market-leading mix of technologies. Incorporating Bluetooth Low Energy, GPS, and high performance, open standard communication protocols (like LoRaWAN), this is the future of tracking, monitoring, sensing and data gathering.

Sense IoT Devices

RTLS for monitoring and protecting healthcare staff and patients   Website

GuardRFID's product offering primarily consists of:

- **Active RFID Tags:** Small, low-profile and long-lasting patient, personnel, and asset tags. Tags contain sensors used for tag tamper detection, environmental temperature sensing, and motion or fall detection. Typical form factors are wrist-bands and clamps

- **Readers:** Work with the AllGuard software platform to provide intelligent location tracking and active alarm response with accuracy of ~3 meters. The accuracy can be further refined using tag exciters to ~1 meter

- **AllGuard software platform:** Server-client enterprise system that vertically integrates Guard RFID tags, tag readers, and tag exciters

LUX-IDent

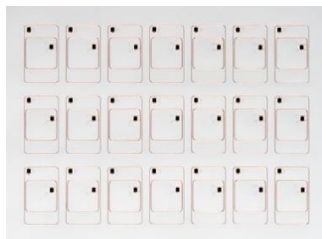**Agile RFID transponder manufacturer based in Central Europe**   Website

Provider of radio frequency identification (RFID) components based in Lanškroun, Czech Republic and part of the HID Identification Technologies (IDT) Business Area since 2020.

LUX-IDent's core competence lies in the (customized) production of RFID inlays in 125 kHz (LF), 13.56 MHz (HF incl. NFC) and 868-915 MHz (UHF / RAIN® RFID) frequency bands as well prelaminates and keyfobs.

Thanks to the in-house machine design and the broad interdisciplinary knowledge, LUX-IDent can combine flexible antenna design (coil wound, wire embedded and etched antennas) with application-specific encapsulation while maintaining a leading price/quality ratio, even at small volumes.

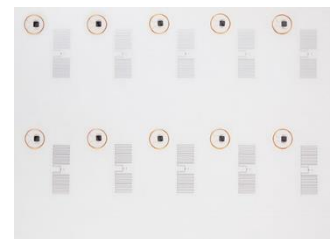**Prelaminated Inlays**   Datasheet

LUX-IDent expands the prelaminate production capacity of HID Global through its European production site and flexibility for small volumes and rapid prototyping. The inlays are engineered to remove process difficulties and offer an exceptional product. LUX-IDent uses a proprietary manufacturing process to produce its prelaminates. Wire embedding and / or coil winding technologies are used depending on suitability to fulfill special customer needs.

Prelaminated inlays Combi

Prelaminated inlays Microprocessor

Prelaminated inlays Combi UHF

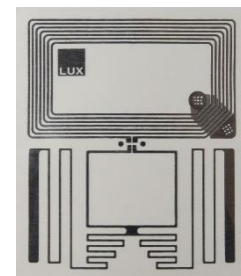**HF & NFC and UHF Inlays**   HF/NFC Datasheets   UHF Datasheets

LUX-IDent smart inlays are ultra-thin, flexible and designed to be combined with the ideal RFID chip type to attain highest possible performance level at minimum cost. LUX-IDent offers to develop customized and application-specific inlay solutions to meet specific requirements. RAIN® RFID UHF inlays from can be converted into various types of products, including smart labels and other tag types used for RFID applications.

HF & NFC Inlays 45x76 AI

HF & NFC Inlays 25x60 AI

UHF/NFC Inlays

Key fobs   Datasheet

In addition to the standard HID Global portfolio, LUX-IDent offers a range of LF/HF Keyfob form factors:

- The LUX-IDent Key fob Smart is very robust and withstands high stress.

- Teardrop is a well-established, time-tested key fob, designed to be decorative while providing secure identification.
- The Beetle key fob offers an original look as well as superb functionality. Shaped to be easily attachable to an ordinary keyring, made out of a resistive material to withstand harsh environment.
- Locket is an attractive key fob with a massive frame of polished stainless steel.
  Along with the Beetle, this key fob was created to meet aesthetic requirements while remaining practical and durable.
- Charm is made of synthetic material and massive stainless-steel frame.
  It combines RFID technology with a practical and exclusive keyfob housing as an alternative to contactless cards.

Smart Key fob   Teardrop Key fob   Beetle Key fob   Locket Key fob   Charm Key fob

Wristbands   Datasheet

LUX-IDent wristbands are completely waterproof as they have gone through highly sophisticated processes, such as ultrasonic welding, to seal the housing. They provide outstanding performance and durability in harsh environmental conditions. Both bands are available in various colors, may be custom laser engraved and are available with a variety of LF/HF/NFC chips.

Wrist bands Active   Wrist bands Watch

TSL

High performance mobile RFID readers   Website

Technology Solutions (UK) Ltd (TSL), part of HID, is an innovative RFID product company specializing in the   design, development, and   manufacture of Enterprise mobile   device   peripherals for   Auto-ID   data capture.

Started trading 2004, TSL specializes in mobile UHF RFID technology. It manufactures Mobile, handheld readers, Mounts for host devices and Chargers/cradle and other accessories.

TSL has the products to address the mobile RFID market – from wearables to ruggedized, and all readers in between! LF, HF, RAIN RFID UHF and optical.

TSL has the most complete RFID reader software support for Application Development.

The large 'eco-system' of 3rd party apps based on TSL readers provides customers confidence, that they invest into a growing, reliable ecosystem of reader hardware.

The TSL portfolio of mobile RFID readers is covering all frequency bands plus Barcode and QR code and supports virtually any display device via Bluetooth or USB. This makes TSL RFID readers a perfect fit to address all applications requiring mobile RFID readers around the world!

RFID Readers   Comparison Chart

UHF 1128	UHF 2128	UHF 2128P	UHF 2128L

UHF 1166	UHF 2166	UHF 1153	LF/HF 2173

The TSL UHF reader modules 3117 (1-port) and 3417 (4-port) utilize the new Impinj E710 platform. A 3419 module based on Impinj E910 will follow soon.

Various Accessories

Cradles

Pop-Loq® Mounts

ePop-Loq® Mounts

Battery Chargers

Extended Battery Solutions

Software

SDKs for our Bluetooth® UHF RFID Readers are available to download on the TSL website (registration required). These SDKs contain everything developers need to rapidly integrate TSL ASCII 2 compatible products into the following software environments:

TSL Apps:

Third Party Apps:

Textile Services

Real-Time Linen Management   Website

HID Textile Services is a real-time inventory management solution combining software, RFID tags, equipment and cloud services to efficiently identify, track and manage linen and textile assets. For institutions that require a constant flow of clean linen, uniforms, work wear, medical garments, or janitorial supplies, HID Textile Services enable automated systems to track large volumes of individual items faster and more accurately.

RFID Tags   Website

HID Textile Services provides a wide range of UHF (RAIN RFID) and HF products designed to identify, track and manage laundry and textile assets efficiently through their lifecycle in hospitality, healthcare and other commercial industries. See previous sections for (LinTRAK®) and (BluTag).

Reader gates and Stations   Website

Easy to install, to manipulate and to monitor. Automation of manually intensive processes, such as counting, sorting and packing. Mass-reading of cages' entire contents in few seconds. Labor costs reduction/optimization thanks to accurate & faster counts/inventories. Cloud-connected: No IT infrastructure required, resistant to network disruptions, proactive monitoring/alerts, seamless and non-disruptive upgrades. Quality alerts on customer mix, condemn, wash cycles. User-friendly web interfaces.

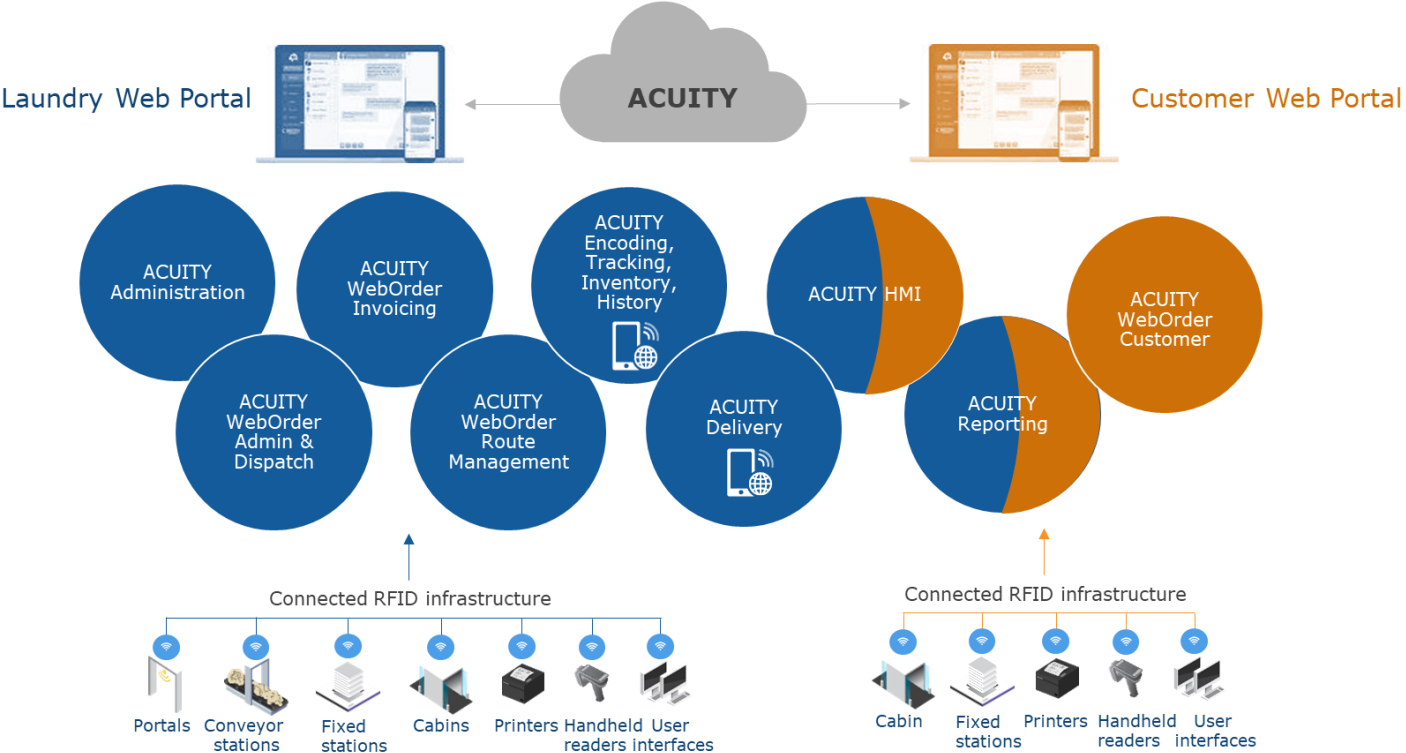| Table-Top | e-Portal | U-Door Reader | UHF Handheld Reader |

Acuity Software   Website

ACUITY is a complete IoT, RFID-based platform enabling real-time inventory availability and visibility over all textile assets, from linen manufacturers to laundry groups — and their customers in the hospitality and healthcare industries.

ACUITY is an innovative and proven technology platform combining RFID tags, equipment, cloud software suites and services. It allows organizations to efficiently identify, track and manage linens, increase financial gains through reduced operational costs, optimize stock movements and purchases, and improve customer satisfaction.

Linen data is collected, stored, analyzed and acted upon in real-time through the RFID-enabled equipment. ACUITY transforms the RFID data into rich, interactive dashboards and reports, providing a comprehensive overview of linen stocks by article reference or individual items, zones in your facility and customer sites. The system allows you to significantly improve linen life-cycle management, optimize washing schedules, anticipate deliveries, identify lost or misplaced items and manage cage assets as well.

Laundry Web Portal   ACUITY   Customer Web Portal

ACUITY Administration

ACUITY WebOrder Invoicing

ACUITY Encoding, Tracking, Inventory, History

ACUITY HMI

ACUITY WebOrder Customer

ACUITY WebOrder Admin & Dispatch

ACUITY WebOrder Route Management

ACUITY Delivery

ACUITY Reporting

Connected RFID infrastructure

Portals   Conveyor stations   Fixed stations   Cabins   Printers   Handheld readers   User interfaces

Connected RFID infrastructure

Cabin   Fixed stations   Printers   Handheld readers   User interfaces

Janam

High-performance rugged mobile computers and access control solutions   <u>Website</u>

Janam is a leading provider of rugged mobile computers and contactless access solutions in HF technology. Janam's devices are purpose-built to deliver increased productivity, operational efficiency, credentialing capability and customer satisfaction to enterprise customers in retail, healthcare, warehousing, manufacturing, logistics, government, public safety, sports and live entertainment markets.

HID acquired Janam, one of the most trusted hardware vendors in sports, performing arts and live entertainment, to accelerate its growth in event access control and provide a best-in-class experience to patrons and venues. Equipped with the most advanced tap-and-go features of Apple Wallet and Google Pay, Janam's handheld devices and mobile entry pedestal, along with HID's growing portfolio of RFID and NFC tickets, e-wallet capabilities, fixed & handheld readers, and related services, deliver unparalleled capabilities in access control and other markets where enterprise customers seek enhanced visibility into their operations.

With a commitment to delivering the right features at the right price, Janam's product portfolio meets the demanding requirements of businesses of all types and sizes that are seeking innovative technology for capturing, sharing and managing information at the point of activity.

XT Series   XM Series   XG Series   HT Series

GT1 Pedestal

Summary

All HID Global RFID tags are fully operational with standard based reader equipment on LF, HF or UHF. All HF tags may also be used with certain NFC enabled smartphones. MIFARE Ultralight® and NTAG® chips comply with NFC Forum tag type 2. HID Trusted Tag® and NXP MIFARE® DESFire® EV1/EV2/Light chips comply with NFC Forum tag type 4. ICODE® SLIX and Vigo™ chips comply with NFC Forum tag type 5 when NDEF formatted.

ATEX certification of HID tags simplifies re-certification of an installation at customer site that involves RFID tags and ensures the tags will not become an ignition source in potentially explosive environments.

HID Global is member of the RAIN RFID industry association. All HID UHF tags are RAIN tags. Additionally, HID Global offers customization services including, special tag designs, custom tag colors, laser engraving, programming or packaging.

Bluetooth® Low Energy adds active beacon technology for condition monitoring or real-time location (RTLS) use cases.

LoRaWAN is a technology used by our Sense IoT Beacons for long-range outdoor item monitoring.

For more detailed information on

- The HID Global tag portfolio, visit our tag selector page at www.hidglobal.com/rfid

- For further assistance, please contact your local HID partner or tagsales@hidglobal.com.

About HID Global®
HID Global powers the trusted identities of the world's people, places and things, allowing people to transact safely, work productively and travel freely. Part of the ASSA ABLOY Group, HID Global is headquartered in Austin, TX, with over 4,500 employees and international offices that support more than 100 countries. Visit www.hidglobal.com.

2023-04-27   PLT-02644