

# HID Global Industrial RFID & BLE Tags: What to Use When

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 to UHF (RAIN) 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 support 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](http://www.hidglobal.com/rfid) or
- email [tagsales@hidglobal.com](mailto:tagsales@hidglobal.com)

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### HID UHF (RAIN®) Tag Families:

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

The InLine Tag Ultra family is a set of highly robust general-purpose UHF hard tags, with multiple fixation options, worldwide UHF broadband capability and excellent performance even 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 the tags to be spot-welded on steel for ultimate fixation. InLine tags are based on Impinj Monza 4 QT or Monza R6 (InLine Tag Ultra Mini).



InLine Tag™ Ultra Family (left) incl. upcoming InLine Tag™ Ultra Mini (right)

#### 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

**Keg Tag**

[Datasheet](#)   [Website](#)

The 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 RAIN® RFID and NFC 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

**LinTag™**

[Datasheet](#)

[Website](#)

The LinTag family represents some of the most robust UHF laundry transponders on the market. The tags are fully compatible with industrial RAIN RFID laundry processes and withstand harsh 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.



LinTag™ Stitch, Embed and Heat-seal

**High-Temperature Label**    [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 High-Temperature Label

**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

**InLine Tag™ Plate**    [Datasheet](#)    [Website](#)

The robust InLine Tag Plate 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. A combo version with RAIN UHF and NFC is available for special applications that need both interfaces.

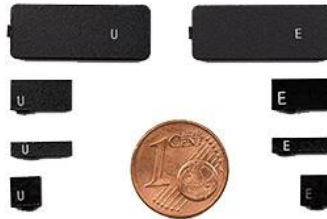


InLine Tag Plate

### Brick Tag Ceramic

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

Brick Tags are extremely small UHF tags with ceramic housing exclusively for on-metal use. Typically, they are affixed using glue or stickers on medical and industrial tools, weapons or similar metallic equipment to efficiently track assets. The Brick tags are specifically tuned to US or EU frequencies and withstand thermal autoclave operations. Brick tags are also available in LF and HF/NFC options when tiny, but robust embeddable tags are required.



Brick Tag Ceramic Family

### 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

**TapMark™ Tag**[Datasheet](#)   [Website](#)

HID Global TapMark™ UHF tags provide unique identities to each of the thousands of indoor assets like office furniture, technical equipment or IT assets. The Monza R6 based small, thin-profile TapMark transponders are available with a variety of mounting options – including zip-ties, industrial adhesives, magnets and screws – for affixing to any surface, including metal. Two types of high-bond stickers are available to affix the tag on even or uneven surfaces with excellent durability. A special antenna design allows the tag to be optionally affixed with a metallic screw right through the middle of the tag for optimal fit without affecting tag performance.



TapMark™ Tag in various fixation versions

**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.

## Inlays & Labels

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

HID Global offers a selection of clear or white printable HF/NFC, UHF and a combo version with RAIN® RFID UHF/NFC Labels in standard or custom designs for on- or off-metal use.



Example of clear and white RAIN UHF labels



Example of a printed and white On-Metal RAIN UHF label

## 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

**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 and ATEX certification for explosive or mining environments make them ideal for other industrial item tagging applications as well. Special versions include a button shape, a disc for on-metal use and radiation resistant high-memory FRAM tags.



Logi Tag Family

**Glass Tags**[Datasheet](#)   [Website](#)

HID Global manufactures millions of glass tags every year for Industrial and Animal-ID use. Glass tags are ATEX certified and 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 1.4x8 mm, 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.



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) and Coin eTamper (right)

**NFC Inlays and Labels**[Datasheet](#)   [Website](#)

Inlays are provided as transparent wet inlays or printable labels in rolls of ~2.000 pcs. These form factors are available in UHF Monza R6, NTAG 213 chip (NFC Forum tag type 2),ICODE chip (NFC Forum tag type 5) or [HID Trusted Tag®](#) (NFC Forum tag type 4) for use cases that need secure authentication or more memory.



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

**ClearDisc**[Datasheet](#)   [Website](#)

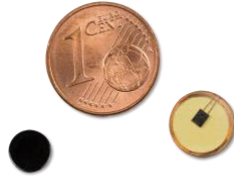
ClearDisc transponders are available in many different diameters and LF or HF chip formats. Typically, they are embedded by the customer in another form of enclosure or directly into the tagged product. HID Global's patented DBond™ technology allows welding the antenna wire directly onto the tiny chip, 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 ClearDisc 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 prelaminate in high volume supporting various chip and design requirements to professional card manufacturers.



HID Global offers prelaminate 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 (BLE) Active Tags:

### HID – Complete IoT platform

[Datasheet](#)

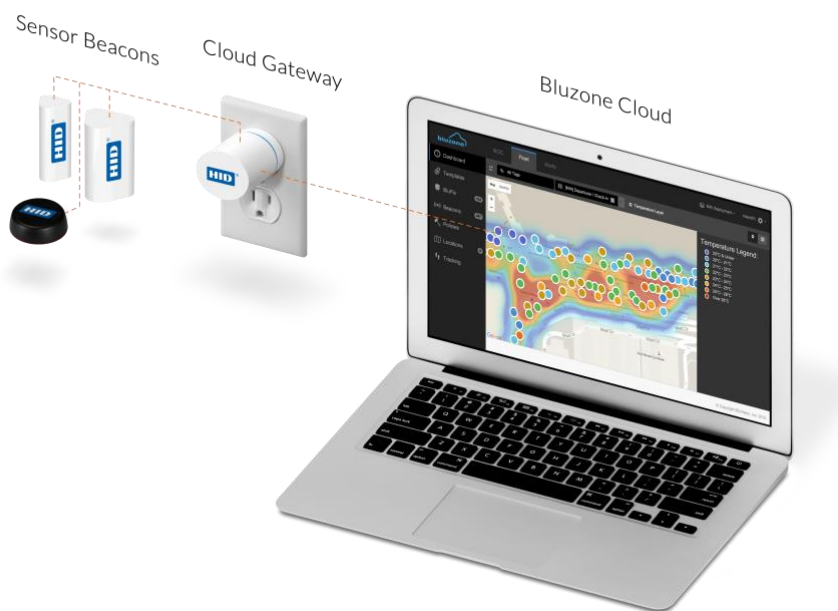
[Website](#)

HID Global is a leading Bluetooth Low Energy (BLE) 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.



**LUX-IDent**

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

[Website](#)



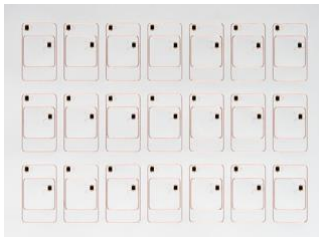
Provider of radio frequency identification (RFID) components based in Lanškroun, Czech Republic and part of the HID Identification Technologies (IDT) Business Area since 2020.

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 prelaminate 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](#)

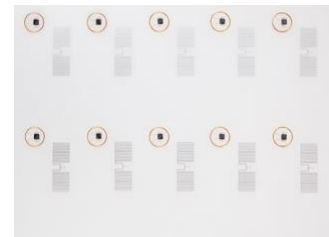
LUX-IDent expands the prelaminate production capacity of HID Global through its European production site and flexibility for small volumes and rapid prototyping. The inlays are engineered to remove process difficulties and offer an exceptional product. LUX-IDent uses a proprietary manufacturing process to produce its prelaminate. 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](#)

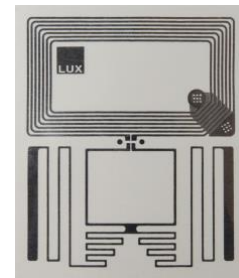
LUX-IDent smart inlays are ultra-thin, flexible and designed to be combined with the ideal RFID chip type to attain highest possible performance level at minimum cost. LUX-IDent offers to develop customized and application-specific inlay solutions to meet specific requirements. RAIN® RFID UHF inlays 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

## 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 (BLE) adds active beacon technology for condition monitoring or real-time location (RTLS) use cases.

For more detailed information on

- The HID Global tag portfolio, visit our tag selector page at [www.hidglobal.com/rfid](http://www.hidglobal.com/rfid)
- For further assistance, please contact your local HID partner or [tagsales@hidglobal.com](mailto:tagsales@hidglobal.com).



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