



## Waste Management RFID Solutions






#### HISTORY OF INNOVATION

HID has over 45 years of manufacturing experience and over 25 years of expertise in contactless technology development and manufacturing. Users and developers worldwide rely on the product line from HID for responsive solutions, fast turnaround, dependable quality and exceptional performance.

# Optimizing efficiency, economy and traceability in waste management.



Most consumers and businesses don't think about what becomes of waste after they dispose of it, but those responsible for waste handling have a huge stake in knowing, and managing information about what they collect, how much they collect, where it comes from and where it goes.

In many cases, tracking waste is a slow, costly and labor intensive process. Modern radio frequency identification (RFID) technology is enabling a change, and no one is more committed to continuing to develop and deliver the necessary solutions than HID.

#### WHY RFID?

A fully-realized RFID solution supports identification and traceability of waste streams. Tags attached to waste containers let operators monitor sorting quality, track the number of times a container is set out for collection and track the weight of its contents. It also simplifies billing for service and supports the implementation of incentive-based invoicing.

#### WHY HID?

HID has long been the world leader in the development of secure contactless technology, producing billions of RFID tags worldwide. For waste management, the company offers a range of transponders suitable for a broad range of operations—residential and commercial bins, medical waste containers, skips, bottle banks, and more—along with handheld UHF readers, reader cores, support services and years of experience in secure contactless implementation. Our innovative products are compliant with all relevant standards and are fully interoperable with other standardized components and systems. Our goal is to simplify the operator's tasks, provide increased transparency of operations, and to maximize return on the operator's investment.

#### DEMANDS OF THE APPLICATION

Waste bins come in many shapes, materials and sizes, but large or small, metal or plastic, residential or commercial, they are all subject to harsh environments and rough handling. Outdoors they face heat, cold, rain, snow and ice. Even in ordinary use, they are tossed, turned and dropped, either by humans or machines. They may face harsh chemicals, inside or out, and in some applications, the rigors of power-washing as well. In the face of all these challenges, they are often expected to last a decade or more. Obviously, a radio frequency tag attached to such a receptacle faces all the same conditions and must protect vulnerable microcircuits at the same time.



## HOW TAGS ARE USED

In typical home or business RFID waste management, the unique ID number of a tag is associated to a bin and that bin's owner or address. In the recognize, lift and register process, the tag is read when the bin is lifted and the information time-coded and logged.

In applications like medical waste, the receptacle itself is collected, transported to a disposal point and returned to its place of origin. In such applications, a read/write tag may actually collect, as well as disseminate, information.

## THE RIGHT PRODUCT FOR EVERY JOB

The selection of tags and readers can have a huge impact on the success of a waste management initiative. System integrators, bin manufacturers and lift manufacturers expect reliability. Every installed tag must work and keep on working. Unique customer identification is critical and there can be no duplication of user ID numbers. System components must be reliable and come with warranties and support users can count on. Users and system integrators need a reliable source of affordable off-the-shelf products.

HID has the right tag and reader (board) for virtually any waste-related application, all backed by our expertise, engineering design-in capabilities, warranties and renowned customer service. Products are designed specifically for the task, providing unique identification of bins. Tags are manufactured for out-of-the-box reliability and long life. With years of experience and literally millions of transponders in use, HID's product line has come to mean quality in secure contactless applications around the world.

In waste management, our screw-in bin tag is among the world's most widely used. The chip is bonded to the antenna for reliable performance and durability. Then the device is encapsulated in resin to provide maximum tensile strength and unmatched resistance to weather, shock, and humidity. The tag is designed for installation as a step in the bin manufacturing process. For older bins in the field, plug tags can be easily installed. This is particularly important for service providers with large investments in existing bins. Furthermore, tamper evident Seal Tags ensure industrial waste containers or bags remained unopened while transported or stored.

## A TRUSTED SOURCE FOR SECURE CONTACTLESS TECHNOLOGY

HID designed the bin tag specifically for waste management applications, but of course, no one tag meets all needs, so we offer an extensive portfolio of tag types to satisfy the wide variety of customer demands. Our epoxy tags come in 20 mm sizes for curbside bins and 30 mm sizes for bin producers looking to embed the tag during manufacturing. HID also offers the On Metal Tag and Plug Tag along with tools for installation. Versions meet low frequency (125 KHz or 134.2 KHz), high frequency (13.56 MHz), and ultra-high frequency (860-960 MHz) ISO standards including: FDX-b BDE, HDX, EN 14803 and ISO 11785. No matter what the mix of residential, business, and specialized customers; the variety of bin types, sizes, and materials; or the frequencies you require, HID has the components you need.

To complete the solution, HID offers handheld readers and top-quality reader boards that meet all established standards and have consistently raised the bar for performance. Boards can be incorporated into hand-held or vehicle-mounted devices, as well as connected to a variety of controller and host systems. HID offering includes the TSL 3117/3417 RAIN RFID reader module to create UHF truck handheld or stationary readers.



We work in close cooperation with system integrators around the world to develop systems that meet your most stringent demands. Whether you need standard or customized tags, we can deliver the products you need with exceptional quality and service.

	<b>Bin Tag</b>	Screw-in	125 KHz, 134.2 KHz, 13.56 MHz, 860 - 960 MHz (Global)
	<b>EXO Tag</b>	Screw-on or weld	860 - 960 MHz (Global)
	<b>IN Tag/ Epoxy Disc</b>	Encapsulated or Screw-on	125 KHz, 13.56 MHz
	<b>Plug Tag</b>	Plug-in	125 KHz, 134.2 KHz
	<b>Seal Tag</b>	Integrated cable tie	13.36 MHz, 860 - 960 MHz (Global)
	<b>OMNIKEY® Multitag Reader Core</b>	Embedded	125 KHz, 134.2 KHz
	<b>TSL 2166</b>	Handheld RFID reader	860 - 960 MHz (Global)



**WE ARE YOUR PROVEN SOLUTION AS REQUIREMENTS INCREASE.** The demands of waste management will continue to grow. "Green" initiatives will require closer tracking of recycling streams. "Pay-as-you-throw" may be implemented to encourage reduction of waste and increased recycling. And changes in waste handling technology may require the ability to track certain materials, not just at pickup, but through the entire process. No matter what your application requires, HID will meet the need.



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