



## ***Confidex Steelwave Micro™***

Technical Product Specification  
Version 1.3  
January 2009

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## 1. Product description

Confidex Steelwave Micro is a miniature UHF on-metal tag with unparalleled performance in its size. It offers new possibilities for companies to improve their asset management, especially computers and other devices that contain valuable information.

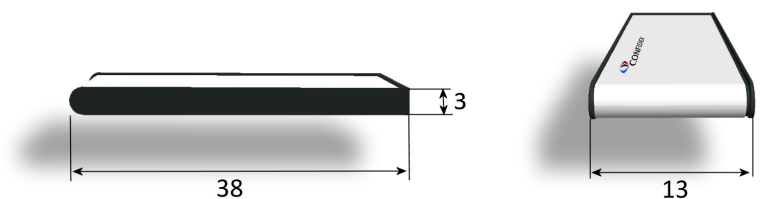
The performance and value of Steelwave Micro has excited organizations as more accurate information of their properties can be retrieved faster and with less error. Increasing demand for recycling of electronics will also require better practices than used by now. UHF RFID can bring clear advantages in these processes together with a small and high-performing tag product like Steelwave Micro.

### 1.1 Specification data

<b>Device type</b>	Class 1 Generation 2 passive UHF RFID transponder
<b>Air interface protocol</b>	EPCGlobal Class1 Gen2 ISO 18000-6C
<b>Operational frequency</b>	865-869 MHz (EU), 902-928MHz (US), 952-955MHz (JPN)
<b>IC options</b>	Impinj Monza
<b>EPC memory</b>	96 bit
<b>Extended memory</b>	-
<b>EPC memory content</b>	Unique number encoded as a default
<b>Read range</b>	2.5 m / 8 ft, reader power 2W ERP (dependent on application)
<b>Applicable surface materials</b>	Metal surfaces, also plastic
<b>Face material</b>	White synthetic material
<b>Background adhesive</b>	High performance acrylic adhesive
<b>Weight</b>	2 g
<b>Delivery format</b>	Single
<b>Amount in box</b>	1000pcs
<b>Product is RoHS compliant</b>	

### 1.2 Dimensions

**General dimensions** 38 x 13 x 3 mm / 1.5 x 0.5 x 0.12 in  
(Width x Height x Thickness)



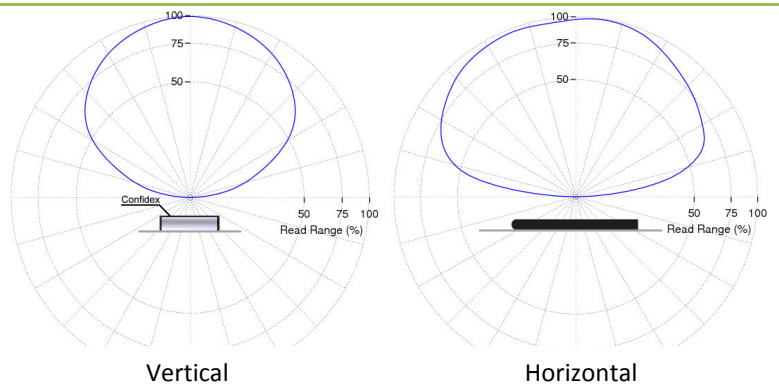
## 1.3 Performance data

### Electrical performance

<b>Read range on-metal (2W ERP)</b>	2.5 m / 8 ft
<b>Read range off-metal (2W ERP)</b>	1-1.5 m / 3-5 ft

### Radiation patterns

Estimated radiation pattern when tag orientation towards reader antenna is optimized.



### Resistance against environmental conditions\*

Typically values are valid for all tag versions. If not, applicable IC versions are marked

<b>Operating temperature</b>	-20°C to +85°C / -4°F to +185°F
<b>Ambient temperature</b>	-20°C to +85°C / -4°F to +185°F
<b>IP classification</b>	IP67: <ul style="list-style-type: none"> <li>- Complete protection against dust</li> <li>- Protection against temporary immersion in water</li> </ul>
<b>Expected lifetime</b>	Years in normal operating conditions

\* Values in the table are the best recommendations; resistance against environmental conditions depends on the combination of all influencing factors, exposure duration and chemical concentrations. Thus, product's final suitability for certain environmental conditions is recommended to be tested. Contact Confidex for more specific information.

## 1.4 Supported components

### 3M background adhesive

<b>Purpose</b>	High performance adhesive for attaching Steelwave Micro on metal surfaces.
<b>Advantages</b>	Quick and simple attachment method without additional tools
<b>Size</b>	Die-cut according to the tag shape
<b>Type</b>	3M 300LSE High performance acrylic adhesive
<b>Delivery format</b>	Attached to the tag
<b>Delivered as default on the Steelwave Micro background</b>	

## 1.5 Supported services

### Standard customer personalization

*Either one or several personalization options can be selected.*

<b>Encoding</b>	<b>- Unique number Default in the tags</b>	Unique number is programmed to IC EPC memory bank
	<b>- EPC encoding</b>	Customer specific EPC code can be programmed to IC EPC memory bank
<b>Visual marking</b>	<b>- Data label</b>	White adhesive data label with black printing can be added on top of the tag: Information can include printed EPC code, UID code, barcode or customer logo etc. Size: 35 x 11 mm.
	<b>- Tampo printing</b>	Same customer specific image or data is printed on top of the all tags.
	<b>- Pair packing</b>	Tags delivered in pairs
<b>Minimum order quantity</b>		10 000 pcs for standard customer specific personalization

## 1.6 Possible applications

<b>Metal surfaces</b>	Indoor applications; fixed IT assets, other metal assets
<b>Plastic surfaces</b>	IT assets with plastic cover

## 2 Installation instructions

### 2.1 Tag placement

Steelwave Micro tag polarization is aligned with the “Confidex” text.



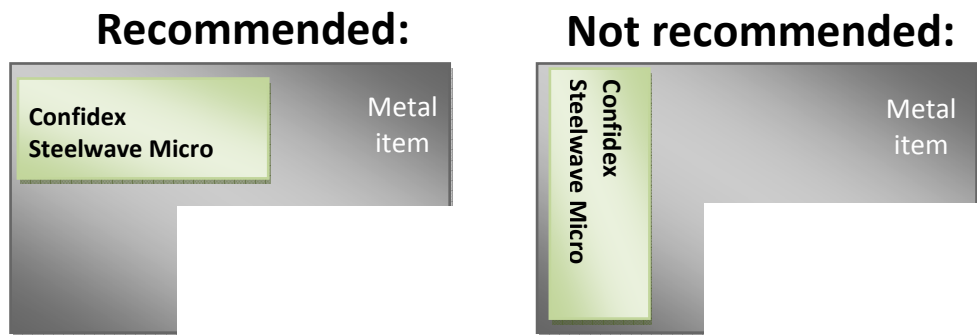
Tag design is optimized for on-metal use: **In order to achieve the optimum performance Steelwave Micro must be placed on metal surface** without covering its front side.

When selecting the location on metal surface, ensure the following:

- Select an even surface so that there is direct metal contact underneath the whole tag.
- The metal background should be preferably as large as possible and tag should be placed so that it's left side is on the metal edge.
- If surface is small, install the tag in such way that **most free metal area is left on the tag's right side.**

#### Example:

In the two pictures below an unsymmetrical metal item is shown which has basically two options for placing the tag. **Left picture shows better and recommended placement for Steelwave Micro; free metal area is left on the right side of the tag** which will enhance tag's RF performance. Other shown placement is not recommended if maximum tag performance should be reached.



### 2.2 Tag fixing methods

#### Adhesive fixing

- 3M 300LSE acrylic adhesive

**Procedure:** When mounting the tag with its adhesive background, clean and dry the surface for obtaining the maximum bond strength. Ideal application temperature is from +21°C to +38°C (+70°F to +100°F), bond strength can be improved with firm application pressure and moderate heating from +38°C to +54°C (+100°F to +130°F). Application at temperatures below 10°C (50°F) is not recommended. Please refer silicone sealant supplier for exact product specifications.

### 3 Order information

Product number	Product name
3000127	Steelwave Micro ETSI Monza
3000128	Steelwave Micro FCC Monza
3000129	Steelwave Micro JPN Monza

For additional information and technical support contact Confidex Ltd.

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