

PRODUCT DATASHEET

Confidex Steelwave Micro™



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1 PRODUCT DESCRIPTION

Confidex Steelwave Micro™ is a miniature UHF on-metal tag, which for its size provides unparalleled performance. It offers great possibilities for companies to improve their asset management, especially computers and other devices that contain valuable information. The performance and value of the Steelwave Micro has excited organizations as more accurate information about their property can be retrieved faster and with greater accuracy. Increasing demand for recycling of electronics will also require better practices than currently in use. The Steelwave Micro is available also as a global version for identifying objects that travel in both, ETSI and FCC regions.

1.1 SPECIFICATION DATA

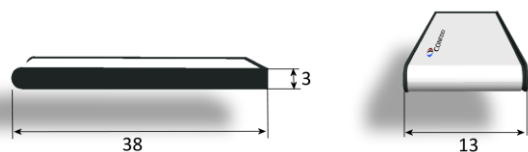
Device type	Class 1 Generation 2 passive UHF RFID transponder
Air interface protocol	EPCGlobal Class1 Gen2 ISO 18000-6C
Operational frequency (See IC option below)	865-869 MHz (EU) ¹ 902-928 MHz (US) ^{1, 2} 952-955 MHz (JPN) ¹ 865-928 MHz (Global) ³
IC options	¹ Impinj Monza 3, ² Alien Higgs3, ³ Impinj Monza 4QT
EPC memory	96 bit ^{1, 2} 128 bit ³
Extended memory	512 bit ^{2, 3}
EPC memory content	Unique number encoded as a default
Read range	Up to 4 m / 13 ft, reader power 2W ERP (dependent on application)
Applicable surface materials	Metal surfaces and plastic
Face material	White synthetic material
Background adhesive	High performance acrylic adhesive
Weight	2 g
Delivery format	Single
Amount in box	1500pcs
Compliance	Product is RoHS compliant ⁴



⁴ Global version marking under progress

1.2 DIMENSIONS

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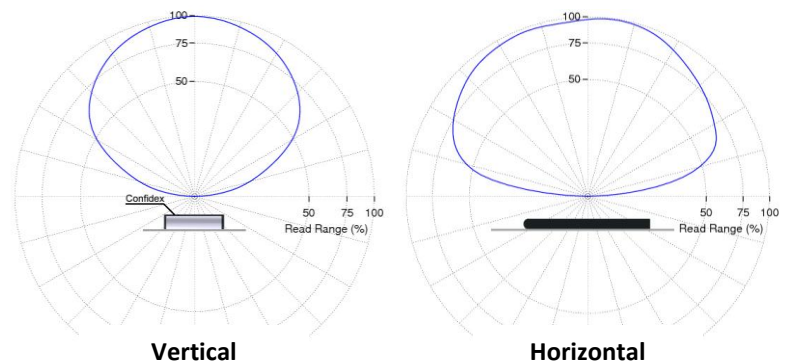
1.3 ELECTRICAL PERFORMANCE

Steelwave Micro version	Attachment surface	Read range ¹
Monza3 (EU/US/JPN)	metal	up to 3 m / 10 ft (EU), 4 m / 13 ft (US), 4 m / 13 ft (JPN)
Monza3 (EU/US/JPN)	plastic	up to 1.5 m / 5 ft (EU/US/JPN)
Higgs3 (US)	metal	4 m / 13 ft (US)
Global M4QT	metal	up to 3.5 m / 11 ft (Global)
Global M4QT	plastic	up to 1.3 m / 4.3 ft (Global)
Global M4QT	free air	up to 1.3 m / 4.3 ft (Global)

¹ Read ranges may vary depending on the used frequency band, tagged object, placing of the tag, reader power and reader configuration. Read ranges are theoretical values that are calculated for non-reflective environment, in where antennas with optimum directivity are used with maximum allowed operating power according to ETSI EN 302 208 (2W ERP). It is recommended to test the actual read range in each application separately.

1.4 RADIATION PATTERNS

Estimated radiation pattern¹
 with optimized tag orientation
 towards reader antenna.



¹ The radiation pattern depends on the tag version, used frequency band, reader configuration, reader power, asset's structure and tag's location on it.

1.5 RESISTANCE AGAINST ENVIRONMENTAL CONDITIONS

Typically values are valid for all tag versions¹. If not, applicable IC versions are marked

Operating temperature	-20°C to +85°C / -4°F to +185°F
Ambient temperature	-20°C to +85°C / -4°F to +185°F
IP classification	IP67: - Complete protection against dust - Protection against temporary immersion in water
Chemical resistance	No physical or performance changes in: - 2 hour Salt water exposure (salinity 10%) - 2 hour Motor oil exposure Additionally, short time exposure resistance against sulfuric acid. Acetone and sodium hydroxide should be avoided.
Expected lifetime	Years in normal operating conditions

¹ Values in the table are the best recommendations; resistance against environmental conditions depends on the combination of all influencing factors, temperature, 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.

1.6 SUPPORTING COMPONENTS

3M background adhesive

Purpose	High performance adhesive for attaching Steelwave Micro on metal surfaces
Advantages	Quick and simple attachment method without additional tools
Size	Die-cut according to the tag shape
Type	3M High performance acrylic adhesive
Delivery format	Attached to the tag

Delivered by default on the Steelwave Micro background

1.7 SUPPORTED SERVICES

There are several personalization options available for Confidex Steelwave Micro™ in order to “fine tune” the tag to match with the application requirements:

- Pre-encoding
- Customized data label

For exact specifications, please refer “Personalization Datasheet”.

1.8 POSSIBLE APPLICATIONS

Metal surfaces	Indoor applications; fixed IT assets, other metal assets
Plastic surfaces	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 a metal surface without covering its front side with metal.**



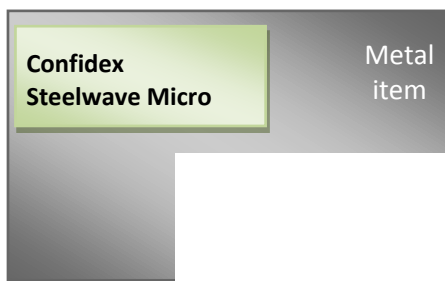
When selecting the location on metal surface, ensure the following:

- 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 its 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 for maximum tag performance.

Recommended:



Not recommended:



2.2 TAG FIXING METHODS

Adhesive fixing

- 3M acrylic adhesive

Procedure: When mounting the tag with its adhesive background, clean and dry the surface to obtain 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.

3 ORDER INFORMATION

Product number	Product name
3000127	Steelwave Micro ETSI Monza 3
3000128	Steelwave Micro FCC Monza 3
3000129	Steelwave Micro JPN Monza 3
3000180	Steelwave Micro FCC Higgs3
3000427	Steelwave Micro Global Monza 4QT

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