PRODUCT DATASHEET

Confidex Survivor™

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1. PRODUCT DESCRIPTION

The Confidex Survivor™ Class 1 Gen2 UHF hard tag has been especially designed for excellent performance in the goods transportation industry . The Survivor offers the best performance-to-cost ratio and applicability in the market. Its features form a clever combination for industrial and logistics applications from local to global operations.

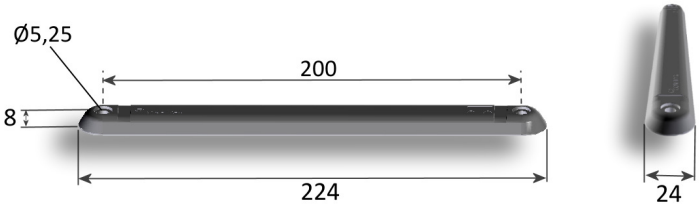
Survivor is an all-purpose tag; it functions as well on metal as on plastic, wooden or any surface materials. Being the first encapsulated EPC Class 1 Gen2 UHF hard tag in the market in early 2006, Survivor has been the safe tag choice for various applications. Since its launch as Confidex's first tag product, Survivor has been used in various roll cage and other container applications. Confidex Survivor ™ is also used to track large valuable items and vehicles, including construction parts and steel pipes, as well as trucks in the petrochemical industry.

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	885-869 MHz (EU), 902-928MHz (US), 952-955 MHz (JPN)
IC options	NXP UCODE G2XM
EPC memory	up to 240 bit (G2XM)
EPC memory content	Unique number encoded as a default
Extended memory	512 bit (G2XM)
Read range	up to 8-12 m (26-39 ft) with reader power 2W ERP (dependent on application)
Applicable surface materials	Any surfaces, incl. metal, plastic and wood
Encapsulation material	PC/ABS
Color	Dark grey
Weight	25 g
Delivery format	Single
Amount in box	250 pcs (default)
Product is RoHS compliant	

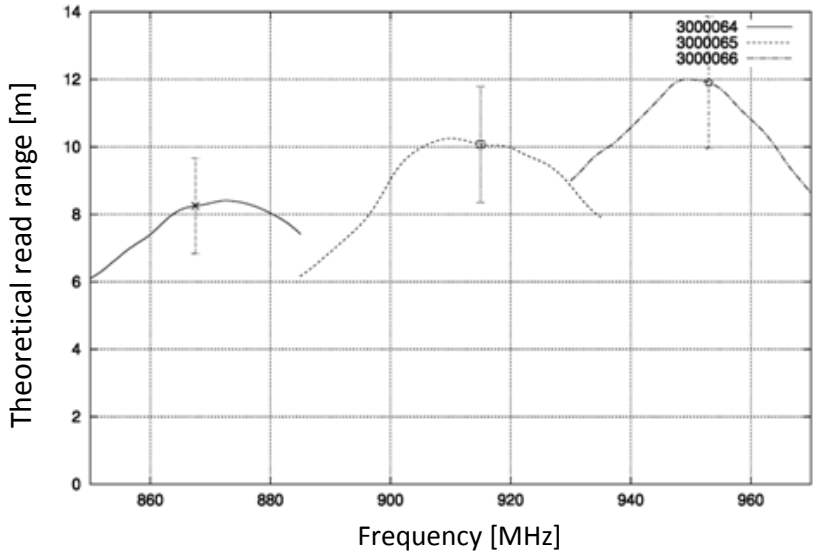
1.2 DIMENSIONS

General dimensions (Width x Height x Thickness)	224 x 24 x 8 mm / 8.8 x 0.94 x 0.31 in



1.3 ELECTRICAL PERFORMANCE

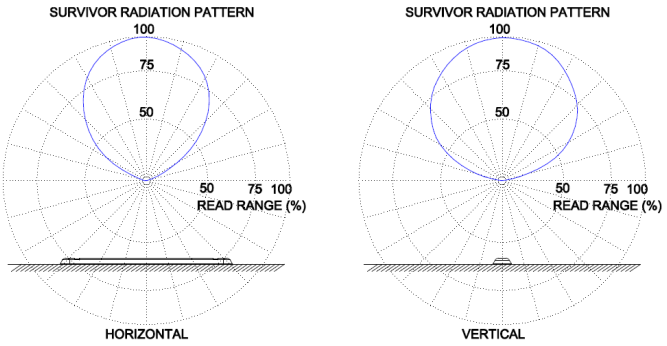
Survivor NXP G2XM



* 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). Variation of 3σ from test batch marked in the picture. Note, tag performance in other frequency bands is not marked in the picture; tag will remain functional but the performance is low.

1.4 RADIATION PATTERNS

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



1.5 RESISTANCE AGAINST ENVIRONMENTAL CONDITIONS*

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

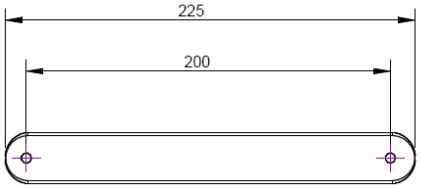
Operating temperature	-35°C to +85°C / -31°F to +185°F
Ambient temperature	-35°C to +85°C / -31°F to +185°F @ -35°C /-31°F 16h duration
IP classification	IP67: - Complete protection against dust - Protection against temporary immersion in water
Weather ability	Good, incl. UV-resistance and sea water
Vibration resistance	Good: - According to JESD22-B103B, service condition 2; vibration that is aligned with tag thickness (z-axis).
Chemical resistance	No physical or performance changes in: - Salt water (salinity 10%, tested in 168h exposure) - NaOH (10%, pH 13, tested in 24h exposure). Note, tag's metal background laminate may corrode. - Sulfuric acid (10%, pH 2, tested in 168h exposure). Note, tag's metal background laminate may loosen. - Motor oil (tested in 168h exposure) Generally good resistance against moderate concentrations of acids, alcohols, alkalis, detergents and cleaners. Acetone should be avoided.
Expected lifetime	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.*

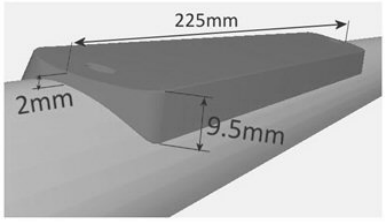
1.6 SUPPORTING COMPONENTS

Survivor concave part

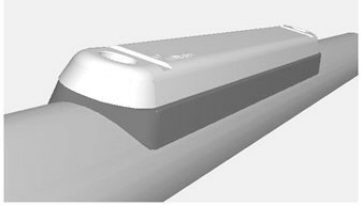
Purpose	To fix Survivor on curved parts, e.g. tubes or roll cage's curved metal frames
Advantages	Eases up the tag fixing, brings additional mechanical support for the tag by filling up the gap in between the tag and curved background
Dimensions	225 x 25 mm / 8.86 x 0.98 in



Mechanical pictures



Concave part



Concave part with the tag

Material	PC/ABS

Delivery format	Single, as a separate part from the tag. Screws not supplied with the part.

1.7 SUPPORTED SERVICES

There are several personalization options available for Confidex Survivor™ in order to "fine tune" the tag to match with the application requirements:

- Pre-encoding
- Customized data label
- Laser engraving
- Tampo (color) printing

For exact specifications, please refer "Personalization Datasheet".

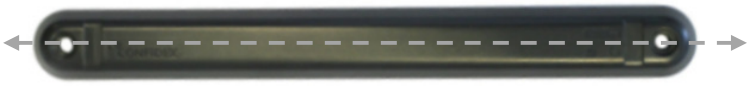
1.8 POSSIBLE APPLICATIONS

Metal	Metal containers, roll containers, industrial and retail metal RTI's in general
Plastic	Plastic RTI's, also water and chemical containers
Wood	Wooden transit items
Any material types	

2. INSTALLATION INSTRUCTIONS

2.1 TAG PLACEMENT

Survivor tag polarization is aligned with the Confidex text. Tag front side is marked with "Confidex" text, in order to get maximum performance don't cover this front side. Survivor can be used on any type of materials, including metal, plastic and wood.



2.2 TAG FIXING METHODS

Mechanical fixing

Mechanical fixing ensures the best and most reliable grip in various use conditions. It's recommended to be used in every application that includes risk for high mechanical stress or low temperature during tag fixing. Survivor tag can be attached mechanically with:

- Cable ties (metal or plastic)
- Screws (size M5)
- Pop rivets (size 4.8 mm)

Procedure: When fixing the tag with screw or rivets, drill two holes on the surface 200mm apart from each other and fix the tag.

Adhesive fixing

- Silicone sealants

Silicone sealant adhesives like Dow Corning AS 7096 provide very high bond strength and resistance against mechanical stress. Usually, fixing must be done indoors in room temperature and in 50% humidity. Total curing time can be several days.

Procedure: When fixing the tag with sealant adhesive, insert a layer of sealant under the tag and press the tag on the surface. Increase the bond by adding extra sealant from the tag holes.
Survivor tag is not sensitive to silicone sealant thickness under or on the sides of the tag. Please refer silicone sealant supplier for exact product specifications.

Additional fixing tools

- Concave part

Additional concave part can be used when Survivor should be attached on curved surface, such as small pipes and metal profiles with round cross section (diameter approx. 34mm). With the concave part, tag attachment is easy and during the use the concave will give even better mechanical structure for the tag.

Procedure: Concave part and Survivor will be combined during the tag fixing. Use the same mounting material as described earlier in the part Mechanical fixing. If using screws or rivets, drill two holes 200mm apart from each other on the item that is going to be tagged, insert the tag and concave part to the right place and fix them firmly on the surface.

3. ORDER INFORMATION

Product number	Product name
3000064	Survivor ETSI G2XM
3000065	Survivor FCC G2XM
3000066	Survivor JPN G2XM
3000030	Survivor concave part

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