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1. PRODUCT DESCRIPTION

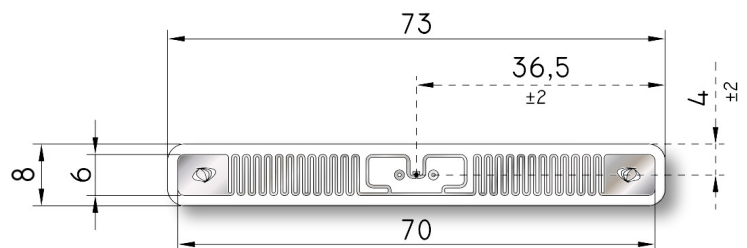
Confidex Carrier™ is a special label with a strong grip for plastic surfaces. It can be easily attached to various containers and with its excellent performance, it provides new visibility to asset tracking applications. By offering a reliable EPC Class1 Generation2 compliant tag solution, Confidex Carrier™ provides fast return of investment where identification in the supply chain, inventory and cleaning management are critical.

1.1 SPECIFICATION DATA

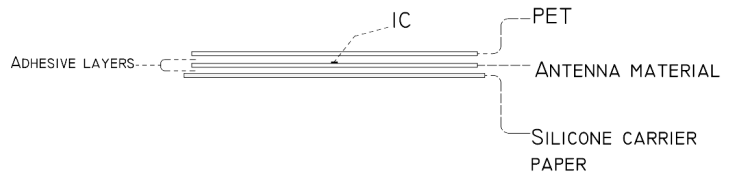
Device type	Class 1 Generation 2 passive UHF RFID transponder
Air interface protocol	EPCGlobal Class1 Gen2 ISO 18000-6C
Operational frequency	860-960 MHz
IC options	NXP UCODE G2XM (white) NXP UCODE G2XL (transparent)
EPC memory	240 bit
Extended memory	512 bit (in G2XM)
Read range	up to 4-5m / 13-16ft, reader power 2W ERP (dependent on application)
Face material	White or transparent PET
Background adhesive	High performance acrylic adhesive
Weight	1 g
Delivery format	On reel
Pitch on reel	20.32mm / 0.8"
Amount on reel	2000pcs (default)
Reel core inner diameter	76mm / 3"
Product is RoHS compliant	

1.2 DIMENSIONS

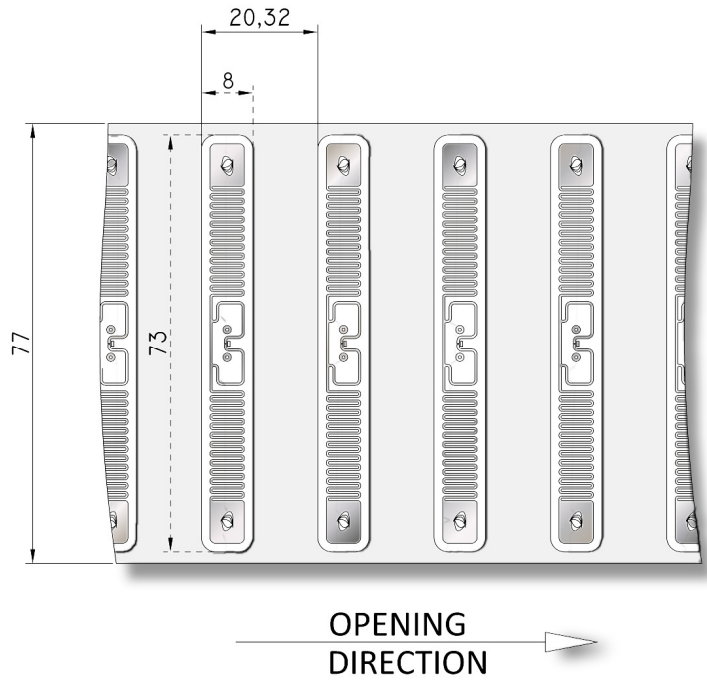
General dimensions (Width x Height x Thickness)	73mm x 8mm x 0,2mm (2.87" x 0.31" x 0.01")
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Cross section

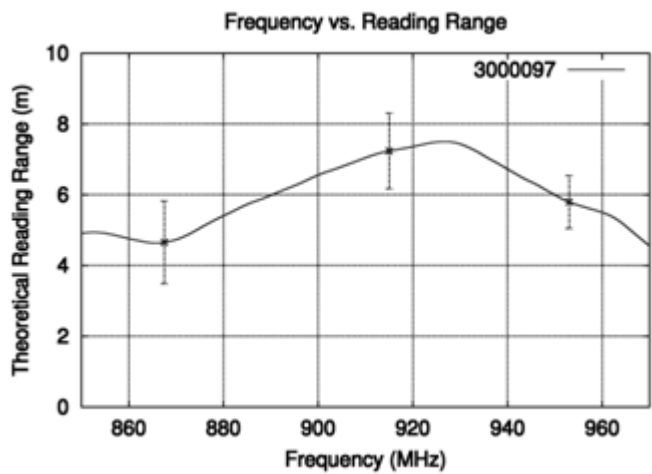


Delivery in reel format



1.3 ELECTRICAL PERFORMANCE

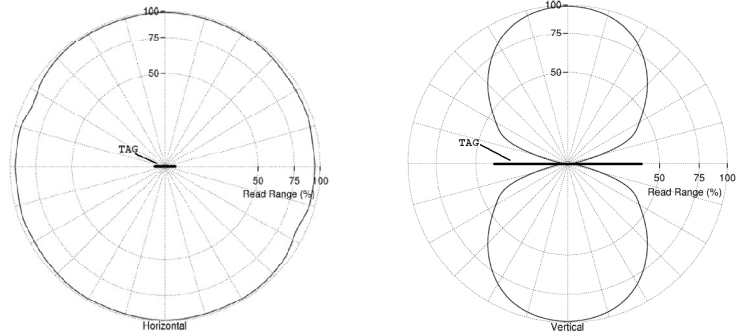
Carrier G2XM and G2XL attached to HDPE plastic



*Presented reading ranges are calculated values in non-reflective environment, in where antennas with optimum directivity are used with maximum allowed operating power: EU 865-868 MHz (2W ERP), US 902-928 MHz (4W EIRP), and JPN 952-954MHz (4W EIRP). Variation of 3σ from test batch marked in the picture.

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 +90°C (-31°F to +194°F)
Storage condition	2 years in +20°C / 50% RH (shelf life for adhesive)
Water resistance	Good, tested for 5 hours in 1 meter deep water
Chemical resistance	No physical or performance changes in: - Salt water (salinity 10%), tested in 168h exposure - NaOH (10%, pH 13), tested in 24h exposure - Sulfuric acid (10%, pH 2), tested in 168h exposure - Acetone, tested in 30min exposure - Motor oil, tested in 168h exposure
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 SUPPORTED SERVICES

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

- Pre-encoding
- Ink-jet printing
- Customer specific black and white thermal transfer printing (will be available during Q2/2010)

1.7 INFORMATION OF USED MATERIALS

Back side adhesive	Adhesive designed to have excellent adhesion on plastic surfaces, good adhesion on other surfaces.
PET face material	Inkjet and thermal transfer printable. For thermal transfer printing, resin ribbon is recommended.

1.8 POSSIBLE APPLICATIONS

Plastic

Plastic crates and other returnable containers which require both correct electrical properties as well as sufficient adhesion to withstand washing

2. INSTALLATION INSTRUCTIONS

Following guidelines are valid when installing and using the Confidex Carrier label. Depending of the application, it may be recommendable to use 2 labels in each item to ensure best RF visibility.

2.1 LABEL ORIENTATION AND APPLICATION

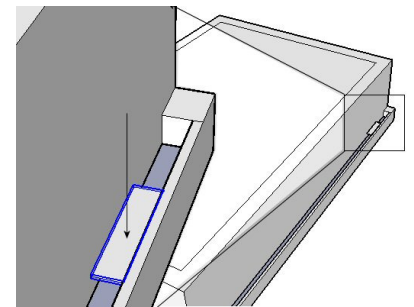
Label polarization is along the longest dimension of the label so it should be noticed when the RFID installation is being designed. Label antenna parts should not be in contact with metal to enable best possible performance of the label.



While planning the installation, most recommended location for the Confidex Carrier –label is in a position, where the structure of the identified asset provides protection against mechanical stresses such as impacts or jet streams.

The installation should be done ideally in +20°C/50%RH conditions. For exceptional conditions, please contact Confidex. The adhesive of the label has been selected to provide best adhesion in 24 hours after the installation.

Confidex Carrier – labels are delivered in roll format which enables the user to personalize the product via RFID equipped printer or applicator before attachment to the identified objects.



The picture shows the label to be applicated underneath the outer rim; the plastic crate is upside down.

2.2 PROTECTION OF TAG DURING USAGE

Minimum bending diameter of the Confidex Carrier is defined to be 50mm. Do not bend the label above the limit. Never touch on the location of the IC. IC chip is sensitive electrical component and can be damaged if unexpected pressure is applied on the chip. Try to avoid mechanical impacts to the Confidex Carrier. IC and antenna may be damaged due to mechanical shocks.

3. ORDER INFORMATION

Product number	Product name
3000253	Carrier NXP G2XM (with white face material)
3000097	Carrier NXP G2XL (with transparent face material)

For additional information and technical support contact Confidex Ltd.

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