



Confidex Carrier™ NXP G2XL
3000097

Technical Product Specification
Version 1.0
September 2008

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1. Product description

Confidex Carrier™ is a special label with strong grip to plastic surfaces. It can be attached easily to various containers, and with its excellent performance, provide new visibility to asset tracking applications. The product is targeted mainly for plastic container manufacturers and users who want visibility to items they carry, ranging from oranges to automobile engines.

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. In addition to the demanding applications in the supply chain, Confidex Carrier with its wide-band antenna design is ideally compact UHF RFID label for various applications.

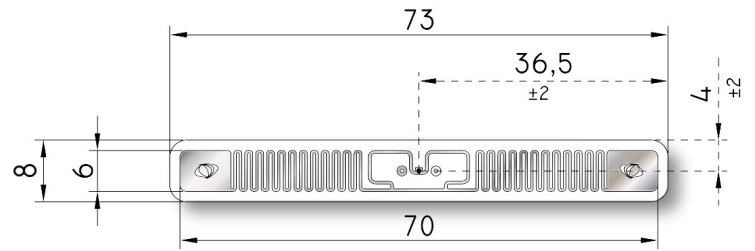
1.1 Specification data

| | |
|------------------------------------|---|
| 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 | NXP UCODE G2XL |
| EPC memory | 240 bit |
| Extended memory | - |
| Read range | up to 4-5m / 13-16ft, reader power 2W ERP (dependent on application) |
| Face material | 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" |
| Protection class | IP67 |
| Environmental compatibility | Product is RoHS compliant |

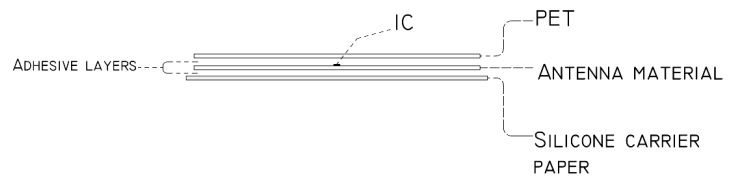
1.2 Dimensions

General dimensions and IC location

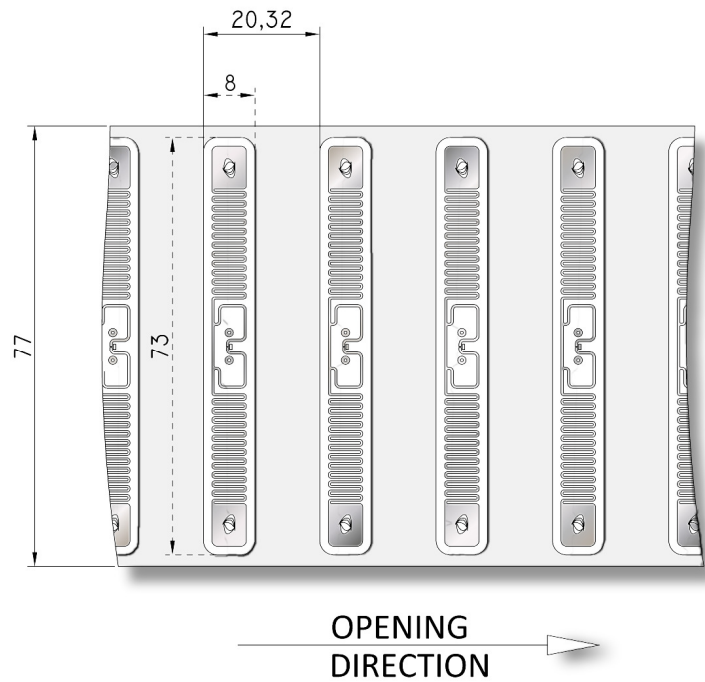
73mm x 8mm x 0,2mm (2.87" x 0.31" x 0.01")



Cross section



Delivery in reel format

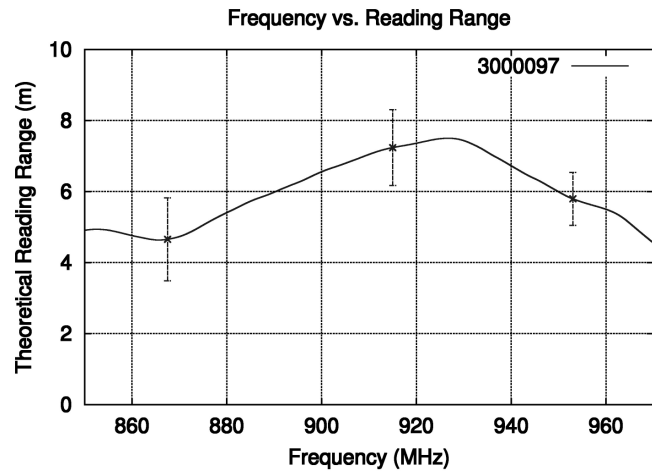


1.3 Performance data

Electrical performance

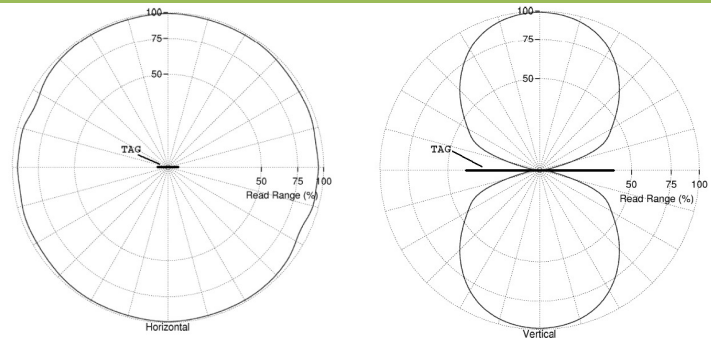
Theoretical reading range, attached to HDPE plastic

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).



Radiation patterns

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



Resistance against environmental conditions*

| | |
|------------------------------|---|
| 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: <ul style="list-style-type: none"> - 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.

1.4 Supported components

There are no additional components available for this product.

1.5 Supported services

Standard customer personalization

| | |
|-------------------------------|---|
| EPC coding | Customer specific EPC code can be programmed to IC. |
| EPC printing | Customer specific EPC code can be printed onto the label.*) |
| UID printing | IC UID code can be printed onto the label.*) |
| Minimum order quantity | 10 000 pcs for standard customer specific personalization. Consult with Confidex Sales for lower quantity. |

*) Tag's physical dimensions are limiting the printability

1.6 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 printable |

1.7 Possible applications

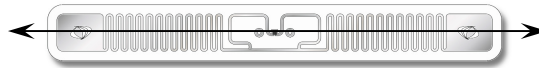
| | |
|----------------|---|
| Plastic | Plastic crates and other returnable containers which require both correct electrical properties as well as sufficient adhesion to withstand washing |
|----------------|---|

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.

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.



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.

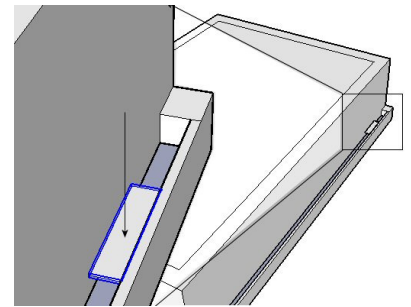
Label antenna parts should not be in contact with metal to enable best possible performance of the label.

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.



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

3 Order information

| Product number | Product name |
|----------------|------------------|
| 3000097 | Carrier NXP G2XL |

For additional information and technical support contact Confidex Ltd.

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