



## CIRCUS™ TAMPER LOOP

### Tamper Detection and Authentication at the Tap of a Smartphone

SMARTRAC new CIRCUS™ TAMPER LOOP tags have been specifically designed for tamper detection and authentication, targeting a wide array of applications in packaged goods for consumer and industrial markets. The tag opens the door to entirely new, NFC-based consumer experience solutions featuring higher security and additional consumer engagement at the point of sale and post-sale.

CIRCUS TAMPER LOOP is based on the well-established CIRCUS product family and comes with a tamper-loop design. This loop enables advanced digital seal functionality for smart packaging and brand protection. It exhibits one of two conditions: a closed loop shows that the packaging is sealed; while an open loop indicates an open package. The tamper detection status can be checked at the tap of a smartphone via a programmed on-chip URL.

Moreover, products can be authenticated at any stage in the supply chain by verifying their digital identity. Even in the case of an open loop, the CIRCUS TAMPER LOOP can be read with a smartphone to display a consumer experience specific to an opened package. At any time, it can be exploited for further pre- and post-sales activities like vouchers, product services or access to dedicated social media channels, and much more. With Experiences, a solution from SMARTRAC's IoT solutions portfolio SMART COSMOS, innovative ways can be developed to utilize digital product connections for consumers, to revolutionize the product lifecycle.

The small CIRCUS TAMPER LOOP is available with NXP's NTAG 213 TT chip that provides additional features compared to the NTAG 213. It offers tamper detection with once-opened status and NXP original signature with an option of a brand-unique signature.

#### Overview

**Operating Frequency**  
13.56 MHz

**Integrated Circuit (IC)**  
NXP NTAG213 TT

**Antenna size**  
20 × 50 mm /  
0.79 × 2.0 in

**Die-cut Size**  
24 × 54 mm /  
0.95 × 2.1 in

#### International Standards

- ▶ ISO 14443 A
- ▶ NFC Forum Type 2

#### Application Areas

- ▶ Healthcare
- ▶ Industrial Application
- ▶ Retail
- ▶ Supply Chain & Asset Management
- ▶ Product Authentication

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Technical Features			
<b>IC + Memory</b> NXP NTAG213 TT 144 byte	<b>Size</b>	<b>Format*</b>	<b>Sales Code</b>
	24 × 54 mm / 0.95 × 2.1 in	wet	3006670
	24 × 54 mm / 0.95 × 2.1 in	paper-tag	3006671
Operating Temperature	-25°C to 70°C / -13°F to 158°F		
Bending Diameter (D)	> 50 mm, tension less than 10 N		
Adhesive	Acrylic, water borne adhesive, usage temperature: min. -20°C to 80°C / min. -4°F to 176°F		
Shelf Life	+20 °C, 50 % RH / 68 °F, 50 % RH - minimum 2 years from the date of manufacturing		

\*Additional product configurations are available upon request.

CIRCUS NFC products are based on the ISO 14443 A standard, and conform to NFC Forum standards. SMARTRAC's inlays and tags are also compliant with ISO 9001:2015 Quality Management and ISO 14001:2015 Environmental Management. This ensures a reliable and state-of-the-art product that meets a variety of application needs.

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