



## CIRCUS™

### Smallest Round HF Inlay with Best-in-Class Performance

Smartrac's CIRCUS™ inlays & tags are designed to suit applications where small size and high performance are critical. These round-form products are ideal for use in small stickers, key fobs and item-level tagging.

CIRCUS inlays & tags are available with NXP's NTAG210 Micro, NTAG213 and NTAG216 chips. CIRCUS with the NTAG210 Micro chip is a cost-efficient alternative where small size with 48 bytes of user memory is required, meeting the applications such as media advertising or collectable playing cards. It comes without additional features like UID mirror, password protection or fast read command, but provides programmable originality signature.

If a small form factor with large user memory is needed, then CIRCUS with NXP's NTAG213 chip is a proven product of choice. It offers 144 bytes of user memory, and comes with unique ID (UID) mirror functionality, which enables the chip serial number to be mirrored as part of its encoded URL address. This feature allows every tag to be seen and read as unique from the application perspective, without requiring users to encode inlays with different numbers.

CIRCUS 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.

#### Overview

##### Operating Frequency

13.56 MHz

##### Integrated Circuit (IC)

NXP NTAG210 Micro  
NXP NTAG213  
NXP NTAG216

##### Antenna & Die-cut Size

Ø 20 mm / 0.79"  
Ø 22 mm / 0.87"

##### International Standards

- ▶ ISO 14443 A
- ▶ NFC Forum

##### Application Areas

- ▶ Electronics & Gaming
- ▶ Media & Document Management
- ▶ Product Authentication
- ▶ Retail

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Technical Features			
IC + Memory	Size	Format	Sales Code
NXP NTAG210 Micro 48 bytes	Ø 22 mm / 0.87 in	Wet	3006535
NXP NTAG213 144 byte	Ø 20 mm / 0.79 in Ø 22 mm / 0.87 in	Dry Wet	3003105 3002981
NXP NTAG216 888 byte	Ø 20 mm / 0.79 in Ø 22 mm / 0.87 in	Wet	3004473
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 adhesvie, 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.

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