

NFC | RING

PRODUCT DATASHEET

Product Model: OPN

Product Code:
C4-B-10.5-NTAG216-v2
&
C5-B-10.5-NTAG216-v2

Updated: 22/01/2018

Approved by: John McLear

PUBLIC DOCUMENT

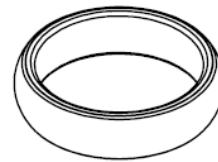
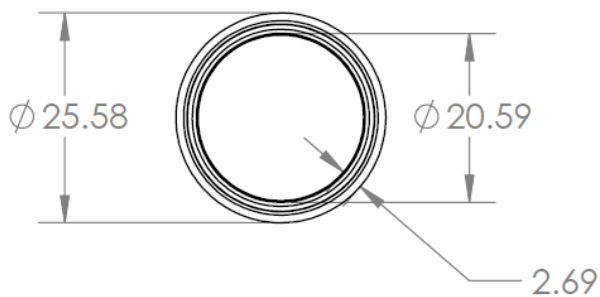
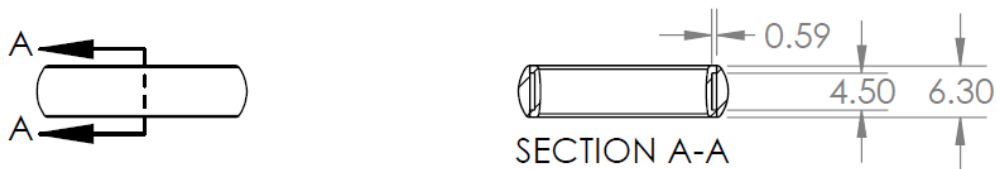
C4 PHYSICAL CHARACTERISTICS

Ring Dimensions

Diameter = Varies according to ring size

Height = constant 6.3mm +/- 0.2mm

Technical drawing



Available Sizes (United States Sizes)

9, 9.5, 10, 10.5, 11, 11.5, 12, 12.5, 13, 14, 15, 16 – For more information on sizes please refer to Ring Dimensions spreadsheet or <http://nfcring.com/sizes>

Note smaller ring sizes (4.5, 5, 6, 6.5, 7, 7.5, 8, 8.5) are not available in model C4 due to size of FPCB antenna. These smaller sizes are available as model C5

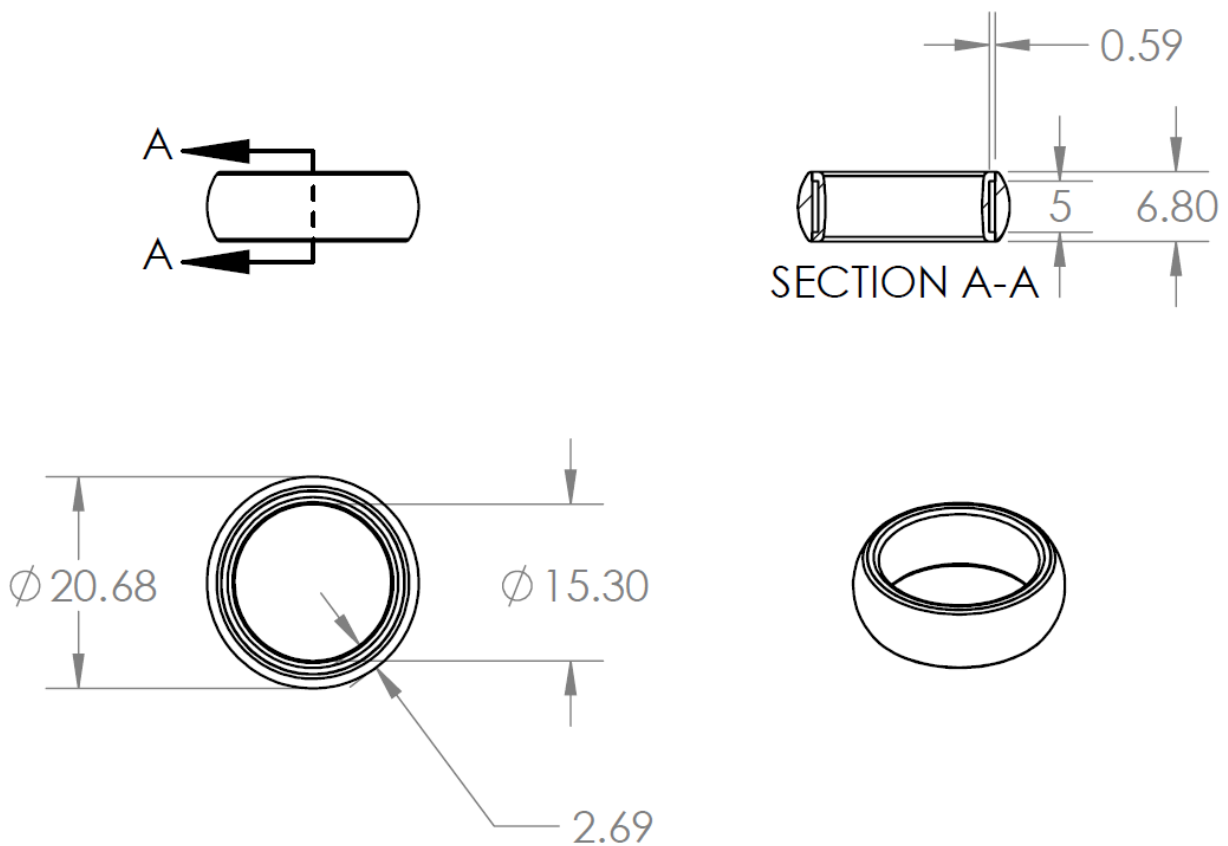
C5 PHYSICAL CHARACTERISTICS

Ring Dimensions

Diameter = Varies according to ring size

Height = constant 6.8mm +/- 0.2mm

Technical drawing



Available Sizes (United States Sizes)

4.5, 5, 6, 6.5, 7, 7.5, 8, 8.5 – For more information on sizes please refer to Ring Dimensions spreadsheet or <http://nfcring.com/sizes>

Note larger ring sizes (9, 9.5, 10, 10.5, 11, 11.5, 12, 12.5, 13, 14, 15, 16) are not available in model C5 due to size of FPCB antenna. These larger sizes are available as model C4.

Fit style

Comfort Fit: Soft Radius

Materials

Ring Blank: Hypoallergenic Hardened Advanced Ceramic (95% zirconium oxide + 5% yttrium oxide)

Glue: Two part ceramic epoxy glue

Inlay Material: FPCB PET

Colors

Blank: Black / White

Engraving

NFC Ring on inside

Product Code on inside

Antenna

C4 = 4.5mm tall loop coil FPCB (Flexible Printed Circuit Board)

C5 = 5mm tall loop coil FPCB (Flexible Printed Circuit Board)

Tin plated copper

Inlay max thickness 0.55mm

IC CHARACTERISTICS

Number of Ics(Integrated Components): 1
IC Manufacturer: NXP
IC Model: NTAG216
Full specifications: TBD
Operating Frequency: 13.5MHz → 15MHz
ISO/IEC: TBD
User writable space: TBD
Data retention: TBD
Write endurance: TBD
IC Type: Sawn Wafer
IC Mount Type: Wire bonded w/ glue

OPERATING LIMITATIONS

Forces

Can withstand drops onto most surfaces from 2M. Drops onto Ceramic and harder surfaces should be avoided.

Temperatures

Overall recommended temperature maximum exposures:

Min: -20c

Max: 100c

IC Limitation:

Min: -40c

Max: 100c

Epoxy Limitation:

Min: -20c

Max: 110c

Water resistance

IP66

Protected from Total dust ingress

Protected from high pressure washer jets from any direction

PATENTS AND LEGAL

Patents:

US 2015/0042450-A1: Covers:

- Inserting NFC inlays in a Ring Embodiment (Both metallic and ceramic)
- Using Hand Gestures to perform different tasks with a Ring including unlocking a phone and sharing contact information
- Interacting between a Ring and an access control system

Current Licensees:

- Visa Collab Inc
- Mastercard Inc
- DangerousThings Inc

US 2015/0042450-A1: Covers:

- Inserting a transponder in a Ring
- Communication between a Ring and third party device
- Communication between a Ring and another Ring.

Trademarks:

“NFC Ring” is a registered Trademark of McLear Ltd

BEHAVIORAL CHARACTERISTICS

Operating Range

VivoPay Terminal: 20mm → 40mm
Keyduino Nano: 5mm
Elechouse PN532: 20mm
Nexus 5: 5mm
ACR122U: 25mm

Skin Interactions

The Ceramic and Epoxy used are both hypoallergenic materials and as such will cause no irritation to peoples skin under normal usage conditions.

Surface smoothness

The Ceramic embodiment is polished to a smooth finish. The largest pit on this finish is 100 microns.