NXP NFC tag ICs NTAG21x

2ⁿᵈ generation NTAG enables mass-market NFC applications

NTAG21x paves the way to mass-market applications in retail, smart media and electronics. In addition to increasing radio sensitivity even further, the new NTAG family delivers additional memory options and a number of new key features, including UID mirror, originality signature, and password protection.

KEY APPLICATIONS

▶ Goods and device authentication
▶ Smart advertisement
▶ Social-Local-Mobile applications
▶ Mobile companion tags
▶ Bluetooth and Wi-Fi pairing
▶ Call request
▶ SMS send
▶ Product information
▶ Loyalty (vouchers, coupons)
▶ Connection handover
▶ Business cards
▶ Electronic Shelf Labels

KEY FEATURES

▶ Fully compliant with ISO/IEC 14443A 2-3
▶ Fully compliant with NFC Forum Tag Type 2
▶ 17 and 50 pF input capacitance
▶ 48, 128, 144, 504 and 888 bytes of user memory
▶ Cloning protection
▶ Unique 7-byte serial number

▶ Read-only locking function
▶ Password authentication
▶ Originality signature
▶ UID ASCII mirror
▶ 24-bit NFC counter and NFC counter mirror
▶ Fast Read command
▶ Get Version command
▶ Configurable Field Detection ("F" version only)
▶ Sleep mode ("F" version only)

BENEFITS FOR TAG MANUFACTURERS

▶ Simplified tag serialization thanks to the UID ASCII mirror, which automatically maps the IC's unique serial number into a stored NDEF message
▶ Fast Read command to shorten test times and increase throughput
▶ High radio sensitivity, even with small form factors, due to high input capacitance

BENEFITS FOR APPLICATION DEVELOPERS

‣ Compliance with NFC Forum Type 2 Tag standard, to ensure interoperability with any NFC device
‣ Get Version command for easy identification of chip type and supported features
‣ Fast Read command for an enhanced user experience

BENEFITS FOR SOLUTION PROVIDERS

‣ Ability to detect cloned tags with an originality signature
‣ Ability to collect statistical data and usage analytics with the UID and NFC counter mirrors, and to include the information directly in the NDEF message
‣ Data protection to prevent unauthorized data manipulation
‣ Multi-application support, enabled by memory size and segmentation options
‣ High radio sensitivity, even with small form factors, due to high input capacitance
‣ Low bill of material and small footprint in embedded electronics

DESIGN SUPPORT

NXP's design support works at every level, from tag design to end application. It includes antenna designs and customization, application development on the most popular smart phone platforms (Android, Window8, WP8, Symbian), plus software and hardware development tools.
Our experts in the Customer and Application Support (CAS) offer training, front-line design support, and consulting services. Also, developers can access our technical expertise on their own, through white papers, application notes, phone apps and online tools, which are publicly available on NXP websites nxp.com, nxp-rfid.com and nearfieldcommunication.com.

WHY NTAG?

NXP NTAG21x is the first IC family offering dedicated features for the NFC market, thus enabling the broadest range of applications:

‣ Broad choice of user memory sizes to best serve application requirements
‣ Improved read range to overcome the presence of obstacles between the tag and the NFC device (glass, plastic, fabric)
‣ Originality signature to protect against product counterfeiting
‣ Two new ASCII mirrors to simplify proximity marketing applications
‣ Password authentication to protect from unauthorized data access or modification

WHY NXP?

NXP is a pioneer in mass-market contactless solutions.

‣ Invented MIFARE technology in 1994
‣ Co-invented NFC in 2002
‣ Co-founded NFC Forum in 2004
‣ More than 125 million NFC radio ICs, 80 million reader core components, and 7 billion smart card units shipped to date
‣ #1 in the contactless ticketing and transportation market (ABI Research)

Selection guide

Product features	NTAG210/212	NTAG213/215/216	NTAG213F/NTAG216F
Memory			
User memory size [bytes]	48/128	144/504/888	144/888
Write endurance [cycles]	100,000		
Data retention [years]	10		
Memory organization	Pages		
RF Interface			
ISO compliance	ISO/IEC 14443 A Part 2-3		
NFC Forum compliance	Tag Type 2		
Baud rate [kbits/s]	106		
Resonance capacitance [pF]	17	50	50
Security			
Unique serial number [bytes]	7		
Access conditions	32-bit password (write, read and write) lock bits		
Special features			
UID ASCII mirror	Yes		
NFC counter + counter mirror	-	Yes	Yes
Field Detect pin	-	-	Yes
Sleep mode	-	-	Yes

Ordering information

Item	Description	Product type
NTAG210	8" sawn wafer on FFC (Au bumped), 120 μm thickness	NT2L1011G0DUD
NTAG210	8" sawn wafer on FFC (Au bumped), 75 μm thickness	NT2L1011G0DUF
NTAG212	8" sawn wafer on FFC (Au bumped), 120 μm thickness	NT2L1211G0DUD
NTAG212	8" sawn wafer on FFC (Au bumped), 75 μm thickness	NT2L1211G0DUF
NTAG213	8" sawn wafer on FFC (Au bumped), 120 μm thickness	NT2H1311G0DUD
NTAG213	8" sawn wafer on FFC (Au bumped), 75 μm thickness	NT2H1311G0DUF
NTAG213F	HXSON4 small outline package (2 x 1.5 x 0.5 mm), tape on reel	NT2H1311F0DTL
NTAG215	8" sawn wafer on FFC (Au bumped), 120 μm thickness	NT2H1511G0DUD
NTAG215	8" sawn wafer on FFC (Au bumped), 75 μm thickness	NT2H1511G0DUF
NTAG216	8" sawn wafer on FFC (Au bumped), 120 μm thickness	NT2H1611G0DUD
NTAG216	8" sawn wafer on FFC (Au bumped), 75 μm thickness	NT2H1611G0DUF
NTAG216F	HXSON4 small outline package (2 x 1.5 x 0.5 mm), tape on reel	NT2H1611F0DTL

Find more information about NTAG on
nearfieldcommunication.com and **nxp-rfid.com**