



Dynamic, contextual consumer engagement and item-level authentication delivered in a single NFC tag



NFC OpenSense™ Tags

With the tap of a mobile phone, OpenSense smart tags connect your products directly to consumers and trusted partners.

Enhance Consumer Engagement

- Create a one-on-one dialogue between your brand and the consumer.
- Tag sensors identify a product's or package's sealed or opened status, letting you deliver personalized and contextually relevant messages.
- Pre-purchase: deliver key information to consumers in-store such as product origin, reviews, and promotional offers.
- Post-purchase: enrich the consumer experience by suggesting ways to best use and enjoy products.
- Drive brand loyalty, share your story, prompt reorders, and identify nearby store locations.

Enable Product Authentication

- Thin, flexible tags are easily integrated into everyday items.
- IDs are permanently encoded into each tag during their manufacture to fight copying and hacking.
- Integrated sensor supports product safety along the supply chain, alerting manufacturers, suppliers, and consumers to possible tampering.

Markets & Applications

- Wine, spirits, and craft beer
- Pharmaceuticals and over-the-counter medication
- Specialty foods
- Health and beauty products
- Industrial and household chemicals
- Medical devices

Bring intelligence and connectivity to your products

Combine OpenSense tags with Thinfilm's cloud-based marketing platform to enhance consumer engagement.

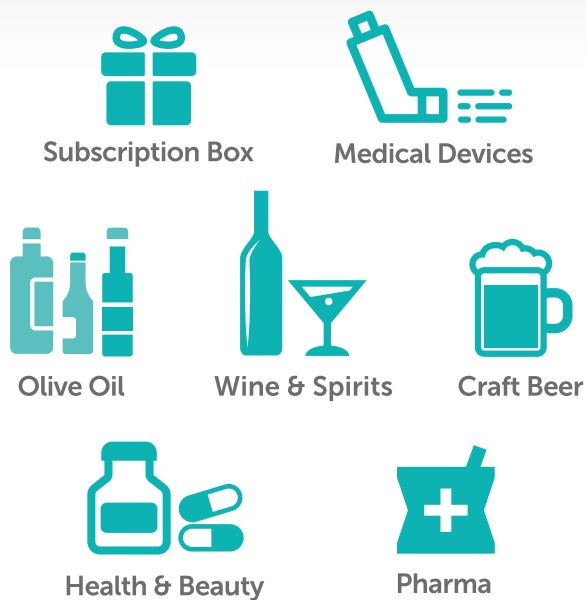
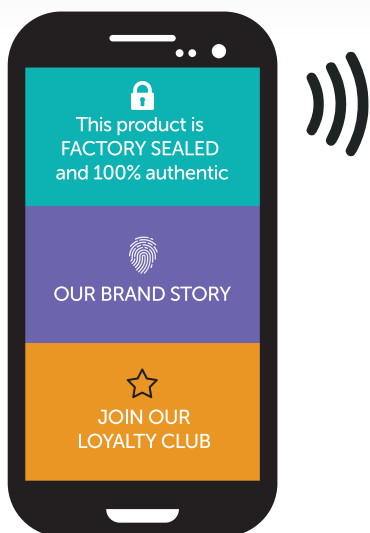
- Influence in-store purchase decisions
- Understand when and where users are interacting with products
- Program campaigns based on time, geolocation or other attributes
- Leverage physical products to drive web traffic
- Enable e-commerce to allow instant purchase

High-Value Benefits

- Provides individual item traceability, electronic verification, and anti-counterfeiting protection. Tags have a two-state ID that changes when the factory seal is broken.
- Integrated sensor determines the sealed or opened status of a product, enabling dynamic, personalized, and contextual content.
- Consumers can verify authenticity at the point-of-purchase and learn more about how the product has been produced.
- Tags can be integrated into a wide variety of mass market products and packages; easily read with commonly available NFC-enabled smartphones, tablets or industrial readers.
- OpenSense is the first NFC solution supported by the World Customs Organization (WCO).

Key Specifications

- 13.56 MHz High Frequency (HF) operation for compatibility with fixed and mobile NFC readers, from smartphones to industrial readers
- 128-bit Read Only Memory (roadmap to 256 bits)
- Adheres to subset of ISO 14443 Type-A RFID standard
- 106 Kbit/sec data transfer, Manchester bit encoding and OOK load modulation at 847 kHz
- 16-bit CRC for data integrity and verification
- Up to 20X faster read-speed than standard NFC solutions; ideal for high-speed, high-volume production
- To fight cloning, tag memory is permanently encoded and cannot be electrically modified; Tags-Talk-First (TTF) protocol makes tags resistant to cloning
- Passive operation; tag powers up when in an RF field; does not require a battery



Thin Film Electronics, Inc.

2865 Zanker Road
San Jose, California 95134

www.thinfilm.no

United States
+1 408 503 7300

Norway
+47 23 27 51 59



© 2016. Thin Film Electronics ASA. All rights reserved. Thinfilm and the Thinfilm logo are registered trademarks of Thin Film Electronics ASA. All other brand and product names are trademarks or registered trademarks of their respective holders..