



Near Field Communication (NFC)

Engage, Influence and Convert with NFC

The “smart” way to bridge the physical and digital worlds

Near Field Communication (NFC) is a short-range wireless technology that triggers data exchange in NFC enabled devices. This could mean initiating an action, such as sending information from a cellphone to a POS terminal, or connecting to a URL from a name tag or business card. **NFC tags can be attached, embedded, sewn, glued, embroidered and even ironed on or otherwise affixed to just about any product**, including print materials, packaging and even wearable’s, to extend messaging and communication.

NFC is a subcategory of radio-frequency identification technology (known as RFID) designed with a shorter communication range, which provides a **more secure** one-to-one data exchange based on a **global, uniform standard**. This technology can be used for product identification and authentication, consumer engagement and chain of custody tracking. Think of NFC as RFID version 2.0 because it **does not need any equipment or installation**, it is a simple and effective way to make items smart and connectable. It’s simple, mobile, flexible, versatile, durable, economical, hide-able and best of all... universal. NFC technology is powerful because it’s compatible with just about every smartphone or tablet and is currently used by hundreds of companies and industries around the globe.

Example of small & large size options as compared to a US quarter →



NFC Under The Hood:

NFC allows two devices placed within a few centimeters of each other to exchange data, *think Apple Pay*, and operates in three modes:

- 1) **Discovery:** Basic one-way read/write communication where the NFC “tap” is used as a pointer or redirect for information.
- 2) **Peer to Peer:** Enables two-way communication and data exchange for sharing and pairing information.
- 3) **Smart Transactions:** Where your device can support, payments, ticketing, and keyless access.

Compared to Bluetooth LE, NFC uses significantly **less power, costs far less** and is **much easier** than pairing two Bluetooth devices which can be tedious! Bluetooth is a push technology that **relies on pairing**, NFC is a pull technology that **relies on consumers actively** seeking information and connection and **requires no pairing**. For our use cases, NFC is the preferred choice.

1) Discovery is one of the more common ways NFC is currently deployed in the marketplace and one of the areas where we are driving innovation. Using your phone (or tablet), you can **tap** an NFC tag or chip, which then prompts your phone to take action providing information and communication. At GTX Corp we are industry agnostic and currently specialize in four deployment categories where we custom design tags, chips, stickers and backend services, including GPS location tracking, to meet all of your business initiatives and needs.

a) Enterprise Inventory and Asset Management: tags or chips are applied per item, directly on containers and packaging so that handlers can “tap” to log data:

- Rapidly collect inventory data with greater speed and accuracy than a manual count
- Align with CRM to maintain real time inventory accounts
- Ability to Redirect Data in Real Time
- Receive product related Instructions or Video tutorials

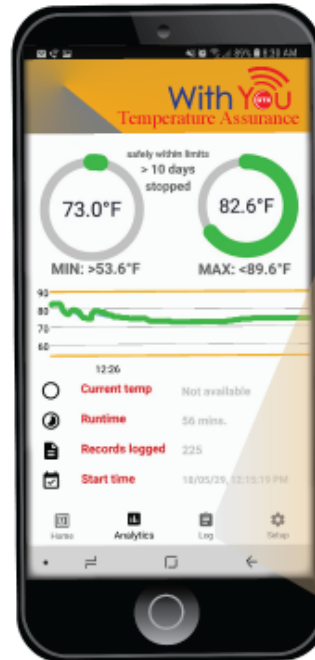


b) Chain of Custody / Shipment Management - NFC tags or chips are applied per item, or per case so that the receiver can “tap” and receive data:

- Chain of Custody – track NFC check-ins as shipment progresses
 - Confirm shipment/receipt of inventory orders
 - Instantly upload shipment manifest or package data points
 - Accountability if the package was tampered with in transit
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- **Counterfeit Protection** - Industry analysts estimate that 30% of sunglasses, 20% of sportswear and luxury fragrances, and 10% of luxury apparel and leather goods are fake. A leading authority on counterfeit wines, estimates that 20% of all fine wine traded is counterfeit. The damage to brands and retailers – to revenue, reputation, and consumer confidence is incalculable. For premium goods and collectibles, authoritative proof of a product’s authenticity and provenance can give consumers the added assurance they need to make a purchase. Brands can use advanced NFC tags to add an additional layer of identification, such as digital signatures or even encryption, for higher-value goods.



- **Temperature Sensing-** NFC integrated sensor tags can provide real-time temperature sensing and data logging across the supply chain necessary with transportation of perishables; food, drinks, pharmaceuticals and other temperature sensitive products that can be negatively affected by conditions in transit. These built-in security measures can prevent distribution of tainted supplies in the marketplace and unauthorized modification of data logs, allowing brands, retailers, distributors and freight forwarders to verify shipment quality by confirming that temperature-sensitive products were shipped properly.



SENSOR ID	AUTH ID
18/05/29, 12:17:19 PM	82.6°F
18/05/29, 12:19:04 PM	81.7°F
18/05/29, 12:19:19 PM	79.2°F
18/05/29, 12:19:34 PM	78.1°F
18/05/29, 12:19:49 PM	77.4°F
18/05/29, 12:20:04 PM	77.0°F
18/05/29, 12:20:19 PM	76.6°F
18/05/29, 12:20:34 PM	76.5°F
18/05/29, 12:20:49 PM	76.3°F
18/05/29, 12:21:04 PM	76.3°F

c) Social Responsibility and Individual Profile ID Management - Place an NFC tag, chip or sticker on wearables for digital identification. Application ideas include:

- Communication assist for those who are non-verbal or hearing impaired.
- Identify and bring back to safety a lost autistic child, senior with dementia or family pet.
- Keyless entry for authorized personnel into building, rooms, storage bins, etc.



d) **Consumer and Brand Engagement / Communication** - NFC tags can be placed on store shelves or hangtags as a *virtual salesperson*. With a single tap find other sizes & colors in stock and get additional information in support of purchase decisions.

- NFC provides unattended, 24/7 engagement! You can place a tag (even inside magnets or window decals) on your store front, door, or point of sale counter top display, allowing for a virtual attendant. Anyone with a phone taps the tag to get instructions, registration information and updates until an employee is available. Displays become more dynamic and interactive! Let them know when a back-ordered product is in stock, get a coupon, opt-in to social media to read reviews, or even download a



demonstration video. You can use it to design and implement mobile campaigns and track their performance via analytics. NFC tags are also available with advanced features such as counters that support compelling promotions, such as “10% off for every 10th customer who taps the tag.” Consumer engagement is live & actionable.

- NFC tags can help customers with registering, installing or using a product by providing a unique ID attached to your product or its packaging, you can let customers **easily complete warranty registration** without having to manually enter a product serial number or **access to that specific item’s history** to better troubleshoot any issues. **Trigger video instructions** on how to care for the product, give a **promo code for discounts on future purchases**, or request a **charitable contribution for your cause**. NFC tags embedded in product packaging or hangtags allow consumers to interact with products in real time.
- For consumers who have already purchased, those same tags can create opportunities for up-sale, cross-sale, and reorders. NFC can initiate automated or subscription purchases and reorders. If you’re selling a product that needs to be replaced, or requires refills, you want your customer to reorder with minimal effort. NFC can jump-start that process with a tap- your customer can go straight to order check out! NFC is also a great channel for further product recommendations and may suggest other products to customers based on

past purchases. This system is more valuable than Amazon Dash buttons, for example, as the NFC tag lives on the product itself, a great reminder to reorder, and easy to find and interact with.



- NFC also provides valuable educational content. Many products require skill and instructions to use- from complex camera tutorials to showcase capability, or cosmetics guides that can provide helpful tips on how best apply by skin type, **and for food items, just imagine the coordinated recipe suggestions!** Through educational articles, images, and videos, brands can provide content that benefits the user. It also increases customer satisfaction as it shows brand concern for the customer’s experience with the product. Content marketing is growing as a successful tactic to reach and bond with the customer. Spreading digital content maintains a symbiotic relationship between brand and customer without the interference of third-party channels.

How can my company benefit by using this technology and how do I get started?

For organizations just starting out with NFC, the first step is to review your business objectives and determine what initiatives can be best be enhanced and streamlined by implementing NFC and GPS technology. **Please email us at info@gtxcorp.com** in order to schedule a call to evaluate if NFC is the right technology to streamline and promote your business. GTX Corp has over 15 years experienced in developing and executing GPS and NFC enabled solutions that can support your needs. We can work with you and your team to develop a limited-area pilot project as well as campaigns which will enable you to see for yourself the art of the possible, measure results and ROI.

