

Iris Diagnostics

Cloning and counterfeiting pose perhaps the greatest threat in the healthcare industry where decreased reliability and performance of medical devices and medication affect diagnosis and treatment. The downstream effects are decreased patient safety, insurance cost efficiency, and provider reputations.

Iris Diagnostics, a division of Iris International (NASDAQ: IRIS), is tackling the cloning problem head-on by RFID-enabling their iQ®200 Automated Urinalysis System. Utilizing chemical reagents to detect the presence of molecules in urine samples, the machine relies on reagents of the correct type, freshness, and authenticity in order to deliver the most accurate results. To prevent reagent counterfeiting, Iris Diagnostics is incorporating SkyeTek's RFID reader and ReaderWare Security technology into their product.

Requirements:

- Authenticate reagent systems based on correct type, freshness and authenticity
- Prevent counterfeiting by implementing state-of-the-art hashing and encryption
- Allow remote field upgrading of cryptographic keys and algorithms in case they become compromised
- Embed RFID reader technology inside the existing urinalysis system
- Integrate RFID tag technology on the reagent container
- Minimize cost impact of total RFID solution to the overall urinalysis system
- Application programming interface (API) that does not require RFID expertise

Solution:

SkyeTek worked with Iris Diagnostics to embed RFID seamlessly into their iQ®200 Automated Urinalysis System:

- SkyeTek M2 embeddable HF reader module (ISO 15693 and ISO 14443A/B compliant)
- ReaderWare Security library based on Federal Information Processing Standards (FIPS) compliant, open standard algorithms: Advanced Encryption Standard (AES) & Secure Hashing Algorithm (SHA)
- Generic ISO 15693-compliant tags costing about USD \$0.15 each. (ReaderWare open standard security obviates the need for proprietary secure tags which typically cost USD \$0.30 - \$0.50 per tag).
- ReaderWare Security-encoded "digital fingerprint" for each tag that could later be recognized by urinalysis systems
- Required read range was obtained using an off-the-shelf antenna
- ReaderWare provided developers with a simple, easy-to-use API allowing them to begin developing a solution immediately.

Results:

Development of Iris Diagnostic's SkyeTek-based anti-counterfeiting solution is progressing rapidly. High ROI has already been demonstrated with reader pricing just over USD \$50 and tag pricing approximately USD \$0.15 – the total RFID solution had a minimum impact to system cost but a maximum impact on lowering the cost, lost revenue and risk associated with counterfeiting.



Application

- Urinalysis Device
- Embedded RFID
- Product & Consumables Authentication

Requirements

- Authenticate reagent
- Implement sophisticated security
- Embed into existing machine
- Update security in the field
- Minimize cost of tags

Solution

- SkyeTek SkyeModule M2
- ReaderWare Security Library with Hashing & Encryption
- Digital fingerprint
- Generic tags utilizing resident memory for encryption

The Cost of Counterfeits

In general, the cloning and counterfeiting of high value items, replacement parts and consumables represent serious threats to the customer experience and brand integrity. This practice typically consists of a legal or illegal copy of a product or a product component made to be less expensive than the original. The lower price, however, masks underlying compromises made in product quality and compliance with specifications. Directly, these compromises lead to decreased reliability, poorer performance, and increased warranty costs. Indirectly, moreover, these compromises worsen the customer experience and degrade the brand equity of the company affected.