



Smart-Device Solution

FEATURES:

- » Authentication of Consumables, Disposables & Parts
- » Authorization of Operators Prior to Use
- » Automatic Provisioning or RFID Subsystem

PAINS ADDRESSED:

- » Incorrect Product Use
- » Unauthorized Product Use
- » Unprofitable Product Use
- » Poor Customer Experience
- » High Support Costs
- » Unreliable Product Performance
- » Lost Recurring Revenue

USE CASES:

- » Analyzers | Appliances | Automobiles
- » Cleaning Equipment | Computers
- » Filtration Equipment | Industrial Controls
- » Liquid Dispensers | Medical Devices
- » Printers / Copiers | Telephones

BENEFITS:

- » Correct, Authorized, and profitable Product Use
- » Enhanced Customer Experience
- » Reduced Support Costs
- » More Reliable Product Performance
- » Preservation of Recurring Revenue

Solutions Overview

SkyeTek's RFID Smart-Device solution allows original equipment manufacturers (OEMs) to integrate RFID into their machines and devices in order to enhance the operator experience, authorize usage, improve product reliability / performance, and preserve recurring revenue coming from the sale of consumables, disposables, and replacement parts.

The Smart-Device solution is comprised of the following:

- **SkyeModules**, RFID reader modules, embedded inside of machines and devices
- RFID labels placed on consumables, disposables, and/or replacement parts or RFID badges carried by operators and users
- RFID tag / badge provisioning provided through SkyeTek Provisioning Services or **SkyeAPI** (ie, for OEMs that source their own tags and own RFID printer-encoders)
- Optional:
 - **SkyeTek Professional Services** for specification and integration support
 - **SkyePlus** accessories (antennas and multiplexers) to accommodate multiple read zones or specific antenna topologies
 - **SkyeAPI** for integration with host applications

How the Solution Works

Once a SkyeModule has become embedded inside a machine or device and RFID tags have been affixed to consumables, disposables, and replacement parts or RFID badges have been provided to users, the following authentication and authorization processes automatically occur at the point-of-use:

- **Product Authentication**
 - A new consumable, disposable, or part (with RFID tag) is placed inside or near the machine
 - The SkyeModule embedded inside the machine reads the RFID tag and applies an authentication policy (previously defined by the OEM during the provisioning process) to determine acceptability of the following:
 - Brand / model / serial number
 - Placement / orientation
 - Physical characteristics (e.g. age, wear, temperature, etc)
 - The results of the authentication process tell the machine how to proceed:
 - Successful: SkyeModule signals that the consumable / disposable / part is usable
 - Unsuccessful: SkyeModule signals that the consumable / disposable / part is not usable and provides exception codes for message display



About SkyeTek:

SkyeTek transforms traditional RFID into a networking technology enabling goods and assets to participate in a connected world. SkyeTek develops readers that serve as intelligent edge devices and software that binds policies to tagged items. By extending networks to the physical world, our customers increase revenue through their ability to predict demand, prevent counterfeiting, and personalize user interactions.

SkyeTek combines intelligent software with an inexpensive hardware platform to provide a modern RFID security model, distributed policy management engine, and network-ready readers. Enterprises deploy SkyeTek's solutions to deliver a seamless RFID edge network capable of centralized management and real-time response for applications in item tracking, product authentication, access control, and patron management.

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How the Solution Works

- User Authorization
 - A user presents an RFID badge in front of a specified read point on the machine
 - The SkyeModule embedded inside the machine reads the badge applies an authorization policy (previously defined by the OEM during the provisioning process) to determine the following about the user:
 - Proper authentication
 - Identity and/or role
 - Level of functionality allowable to user (eg, normal vs. administrative mode)
 - The results of the authorization process tell the machine how to proceed:
 - Successful: SkyeModule signals that the user has been authenticated and sends an authorization level
 - Unsuccessful: SkyeModule signals that the user has been denied access and provides exception codes for message display

Software

SkyeAPI – SkyeTek's application programming interface (API) offering seamless integration between host-side applications and SkyeModules. Supported languages / frameworks are ANSIC and .NET.

SkyeSecurity – Standards-based symmetric and asymmetric encryption / signing where anti-counterfeiting, anti-tampering and privacy are required.

SkyeOS – SkyeTek's embedded RFID reader operating system providing every SkyeModule with superior functionality, reliability, and upgradeability. Made available on a software license basis for customers that use ReaderDNA reference designs.

Hardware

SkyeModules – Embeddable RFID reader modules that lead the industry in cost, space, and power efficiency. Available in three form factors and operation in HF (13.56 MHz) and UHF (860 – 960 MHz).

ReaderDNA – Reference designs of SkyeModules allowing OEMs to integrate the entire module design, or just the analog sub-section, directly onto the main circuit board.

SkyePlus – Accessories such as antennas, multiplexers, and interface boards required for unique geometries and multiple read points.

Developer Kits – Tool kits that contain all the RFID hardware and software required to build a proof of concept.

RFID Tags – SkyeTek works with the industry's leading RFID tag manufacturers such as UPM Raflatac and Avery-Dennison in order to best meet the tagging needs of customer applications.

RFID Printer-Encoders – SkyeTek works with the industry's leading RFID printer-encoder manufacturers, such as Zebra, Avery-Dennison, and Intermec to meet the printing needs of its applications.

Services

SkyeTek Professional Services – SkyeTek can turn-key the entire integration effort or provide assistance in specific areas. Either way, customers benefit from SkyeTek's industry-leading experience resulting in reduced project cost, risk, and time-to-market. Services include project management, requirements gathering, specification development, hardware selection / integration / customization, regulatory testing / certification, and training.

SkyeTek Provisioning Services – SkyeTek can provision tags / badges on behalf of its customers so that the only task remaining is to affix labels or assign badges. Mapping of SKU numbers to RFID tags or identities / roles to RFID badges and the subsequent printing / encoding process is managed by SkyeTek.

SkyeTek Support – SkyeTek's support technicians have years of experience helping customers troubleshoot problems when the need arises.

Other Offerings from SkyeTek SkyeTek provides a variety of reader technology at both 13.56 MHz (HF) and 860- 960 MHz (UHF). ReaderDNA, a comprehensive reference design, is available for component level integration of the technology including complete design files, BOM, and test fixture. SkyeOS, the embedded software intelligence of the RFID reader, is available to ReaderDNA customers. All SkyeModules are controlled via the SkyeTek Protocol, a powerful but simple communication protocol that grants the user access to all features of an RFID transponder. Further, they have been designed with flexible and modular embedded software that allows one to select only the features desired.

