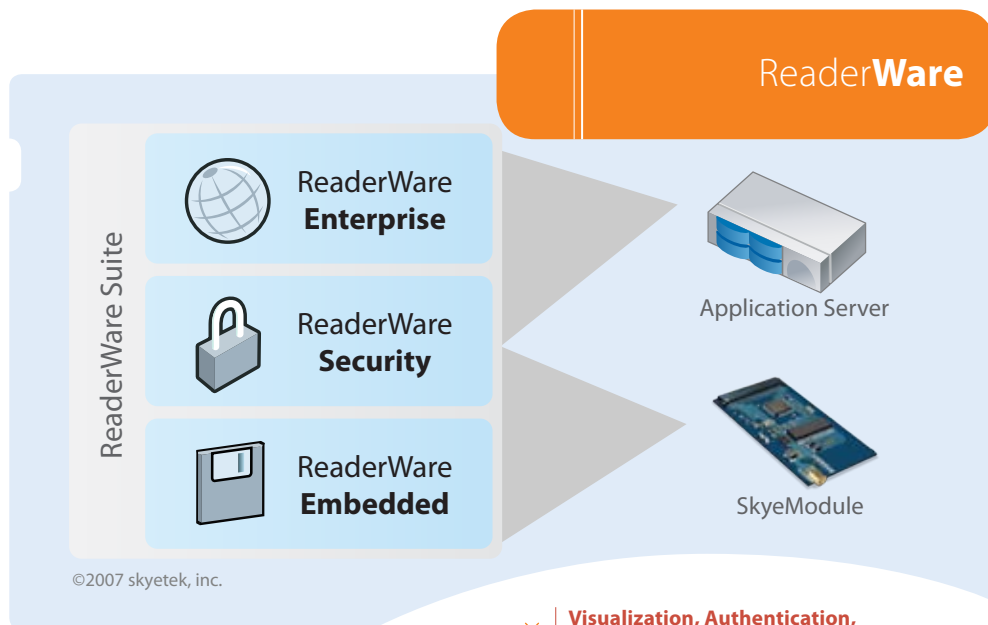


rfid as a feature



ReaderWare is included in the price of a SkyeModule and can also be licensed independently if customers choose to build their own reader off a Skyetek ReaderDNA reference design. Customers that choose to manufacture their own ReaderDNA-based module and license ReaderWare software save 40 – 75% compared to the price of a standard reader module found in the RFID industry today.

### ReaderWare Enterprise

- Host-side SW that controls reader / tag
- Single virtualized tag / reader interface presented to application
- Independent of HW elements

### ReaderWare Security

- SW-based cryptography based on industry standards (AES, TDEA, SHA)
- Symmetric encryption up to 256-bit
- Anti-cloning up to 512-bit

### ReaderWare Embedded

- Reader-side SW that communicates with host-side application
- Executes security policies
- Allows application logic on the reader

### Product Overview

ReaderWare is the RFID industry's most advanced reader software platform providing a complete solution for developers that want to seamlessly and easily integrate the capabilities of an RFID reader network into their application. ReaderWare eliminates the need for application developers to possess RFID expertise, provides DoD- / Internet-class security protection, and allows application code to remain unchanged as underlying frequencies, protocols, and tags evolve over time.

### ReaderWare Elements:

**ReaderWare Enterprise** is host-side software that allows applications to transparently and securely control and receive data from a network of RFID readers and tags. The developer is presented with a single, intuitive application programming interface (API) written in C that virtualizes the underlying hardware so that the developer is freed from having to account for RFID-specific elements such as frequencies, air-interface protocols, and tags. The developer merely has to invoke simple commands such as SelectTag, ReadTag, and WriteTag to fully utilize the underlying RFID infrastructure.

**ReaderWare Security** provides developers with the same security technology that is used in DoD, Internet, and Financial applications. The Advanced Encryption Standard (AES) family of encryption provides up to 256-bit symmetric encryption and the Secure Hash Algorithm (SHA) family of hashing provides best-in-class anti-cloning protection for applications such as product authentication and anti-counterfeiting. Skyetek implements these algorithms in industry standards fashion allowing customers to secure generic tags and avoid the 100 – 200% premium that is charged on tags that implement a proprietary form of cryptography.

**ReaderWare Embedded** is firmware that runs on the reader that executes commands from and returns data to the host application. It also translates high-level API commands into tag-specific commands that are tuned, based on the TagIQ knowledge base, to optimize performance of the tag in the read field. Security policies can also be set to authenticate and authorize the tagged item or person based on the cryptographic or application data on the tag. ReaderWare Embedded also allows application code to run in reader memory for low latency response or to rationalize the number of processors in use.

**About Skyetek:**

SkyeTek, Inc., maker of ReaderWare™, is the leading supplier of RFID reader software and reference designs that enable the pervasive adoption of RFID technology. SkyeTek's Tagnostic™ reader technology works with most industry standard tags and smart labels, its low power requirements and a small form factor make it the optimal choice for embedding into new or existing products. SkyeTek's RFID reader technology is available in several formats including reader modules, hardware reference designs, and the ReaderWare software suite. SkyeTek markets to OEM customers in targeted vertical markets with several high-volume licensing options available.

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**ReaderWare Benefits:**

- Ease and timeliness of application integration by leveraging an intuitive API that frees the developer from RFID-specific code development.
- Best-in-class privacy protection and anti-counterfeiting / anti-tampering with the lowest TCO.
- Low-latency operations by allowing application code and security policies to execute on the reader.
- Tagnostic® support that allows the developer to choose the tag that best suits their application.
- TagIQ™ that optimizes read / write performance based on the specific tag type.
- Licensing model that allows customers to manufacture their own modules at cost while still gaining the benefits of ReaderWare.

**Applications**

ReaderWare comes included with the purchase of a SkyeModule and has been created specifically for several applications that share common requirements for tag support, protocol, performance, and security. ReaderWare is an ideal solution for the following:

- Item-Level Inventory Management
- Product Authentication
- Printing / Encoding
- Payment

**Multi-Regional Support**

Band	Regulatory Environments
HF	Worldwide (13.56 MHz)
UHF	North America FCC (902-928 MHz)
UHF	European ETSI (865-869 MHz)
UHF	Korea, Taiwan, Singapore, Hong Kong, Australia, New Zealand, and Japan

**Tagnostic® - Tag Support Matrix**

	Air Interface <sup>1</sup>	Manufacturer	IC Family
HF	ISO14443A	NXP (Philips)	MIFARE Ultralight
	ISO14443A	NXP (Philips), Infineon	MIFARE
	ISO14443A	NXP (Philips)	DESFire
	ISO14443B	Atmel	AT88RF020, AT885C CryptoRF1
	ISO14443B	ST Microelectronics	SR176, SRI512, SRIX4K
	ISO15693	Fujitsu	MB89R118
	ISO15693	Infineon	my-d (limited)
	ISO15693	NXP (Phillips)	I-CODE SL1, SL2 ICS10, SL2 ICS20
	ISO15693	ST Microelectronics	LRI-64,-512,-2K, -2KS
	ISO15693	TagSys	C370
	ISO15693	Texas Instruments	Tag-it HFI Std, Pro, Plus
	Proprietary	NXP (Philips)	I-CODE SL1 ICS30, EPC SL2 ICS10
UHF	EPC C1G1	Alien	Quark, Omega3, Lepton3
	EPC C1G1	ST Micro	XRA003
	ISO18000-6C / EPC C1G2	Alien	Gen2 Chip
	ISO18000-6C / EPC C1G2	Hitachi	mu-Chip Hibiki HE-MU384-1001
	ISO18000-6C / EPC C1G2	Impinj	Monza, Monaco-64
	ISO18000-6C / EPC C1G2	Philips NXP	UCode EPC G2
	ISO18000-6C / EPC C1G2	ST Micro	XRAG2
	ISO18000-6C / EPC C1G2	Texas Instruments	TI Gen 2 EPC
	ISO18000-6B	Fujitsu	FRAM MB97R8020
	ISO18000-6B	Philips NXP	UCode EPC 1.19
	ISO18000-6B	Philips NXP	UCode HSL

<sup>1</sup>See transponder datasheets for complete details

**Security\***

Function	Protocol Type	Algorithm
Encryption	Encryption Ciphers	TDEA (3DES) – 56, 112, 168 bit key options
Encryption	Encryption Ciphers	AES – 128, 192, and 256 bit key options
Anti-cloning	Hash Functions	Secure Hash Algorithms (SHA): SHA-1, SHA-224, SHA-256, SHA-384, and SHA-512
Anti-cloning	Hash Functions	MD5
Anti-cloning	Keyed-Hash Message Authentication Code (HMAC)	Used with supported hash functions, in combination with a shared secret key.
Privacy	Pseudorandom Number Generator	SHA1PRNG

\*Supported on M2 and M9 only