SEC501 SECURITY SERVER

TRUSTED EXECUTION ENVIRONMENT FOR SECURITY-CRITICAL SOFTWARE

◁
SEC501 Security Server

OVERVIEW

The Q-Free SEC501 Security Server provides a trusted execution environment (TEE) for security-critical software and includes hardware security module (HSM) for key storage.

For security critical tasks, the SEC501 uses a dedicated crypto processor from NXP semiconductors, which is specifically designed for the protection/storage of crypto keys and hardware accelerated cryptographic algorithms.

The SEC501 is the main component in DSRC services as:

- KDC – Key Distribution Centre
- Key Server - in production environment
- Key Proxy – for large scale production
- POS – Point of Sales
- TVU – Transaction verification unit

Overall, the Q-Free SEC501 is a complete hardware security solution managed through a standard web browser. Its small size is ideal for desktop use. In addition, its fan-less design means no noise and no maintenance.

BENEFITS

- Access control with two-factor authentication utilizing NXP smart card
- Operate multiple services for use in DSRC tolling domain
- Add new services when needed
- Install in a 19" rack or DIN rail with ease using practical accessories
- Utilize the robust cable connectors for industrial environments

COMPLETE
HARDWARE
SECURITY
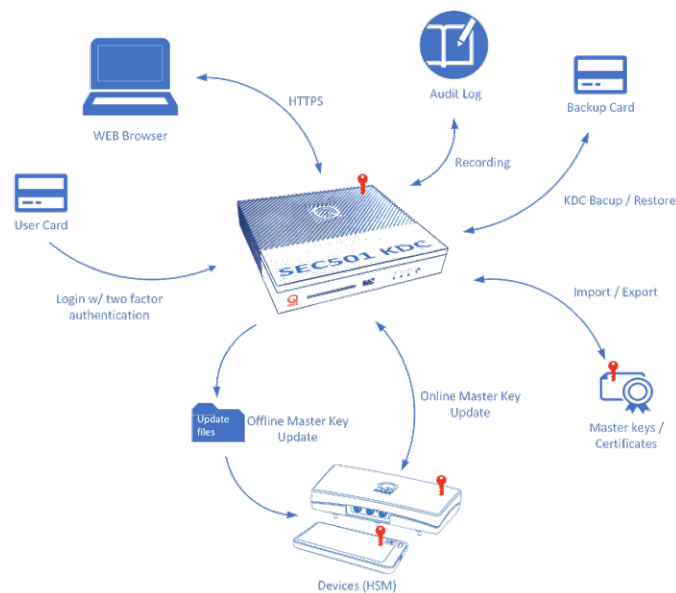
OPERATE
MULTIPLE DSRC
SERVICES

FREE

FEATURES

- TrustZone architecture
- Designed according to FIPS 140-2
- High Assurance Boot (HAB)
- Secure Non-Volatile Storage (SNVS) with security monitor, key storage, and real-time clock
- Cryptographic hardware acceleration (AES-128, AES-256, DES, 3DES, RSA, ECDSA)
- On-chip one-time programmable element controller
- Central security unit
- Locked mode in Smart Direct Memory Access Controller (SDMA)
- True and pseudorandom number generator
- Tamper detection

KEY DISTRIBUTION CENTER

The Key Distribution Center (KDC) is an optional core service available with the Q-Free SEC501 Security Server. It includes all functionality required to generate, store, and distribute DSRC master keys.

It is designed to meet several national standards for key management and has an easy and direct interface to Q-Free DSRC Transceivers.

Typical KDC operations

BUILT-IN FUNCTIONS

The Q-Free SEC501 includes a built-in:

- USB connector which can be connected to a desktop RSE624 DSRC Transceiver. This gives a unique combination of a security server and DSRC Transceiver for OBU programming, personalization, and verification.
- Smart card reader which, in combination with SEC501 Smart Cards, provides required security functions such as two-factor authentication and KDC backup and restore functionality.

TECHNICAL SPECIFICATIONS

Dimensions:	209 x 192 x 38 mm
Weight:	1.23 kg
Color:	Black (anodized)
Cabinet material:	Aluminium
Operating temperature:	+10°C to +50°C
Storage temperature:	-10°C to +55°C
Relative humidity:	10% to 95%, non-condensing
IP grade:	30 (IEC 60529)
Shock/Vibration:	class 5M2 (IEC 60721-3-5)
Ethernet:	1000Base-T, 100Base-TX, 10Base-T
Connectors:	M12 (IEC61076-2-101)
Power supply:	ETH: PoE, IEEE 802.3at Type 1 Class 3
	AUX: 37-57V DC
Power consumption:	Max 12W
USB connector:	Type A female
Smart card reader:	ISO/IEC 7816
LEDS:	On/Standby, Network, Application
Button:	On/Standby
RoHS:	2011/65/EU
WEEE:	2012/19/EU
Safety:	EN IEC 62368-1 and 62368-3
EMC:	EN 61000-6-1 and 61000-6-3