SINA®
L3 Box H R

New ruggedized VPN gateway

For German national SECRET (GEHEIM)

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As a VPN gateway, the SINA L3 Box H R 200M-2 is a key component of the central IT infrastructure in high-security networks.

The data exchange between the SINA components is securely transmitted via encrypted VPN tunnels. SINA L3 Boxes connect public authority or corporate networks via the Internet. In addition, access to (terminal) servers by SINA clients is provided via pre-switched SINA L3 Boxes, which serve as cryptographic network access points.

The SINA CORE-based SINA L3 Box H R 200M-2 was developed for transmitting classified information up to and including German national GEHEIM and STRENG GEHEIM*. The focus is on national and international military and governmental high-security networks.

Compared to its predecessor SINA L3 Box H R 200M, the SINA L3 Box H R 200M-2 is much more powerful, compact and lightweight. The design of the hardware platform was considerably reduced with 1 ½ height units and 19/2". With 200 Mbit/s full duplex, data encryption throughput is more than doubled. Ease of use has been enhanced by the use of a durable battery and improved emergency extinguishing switch. The SINA L3 Box H R 200M-2 can be deployed with high flexibility in many respects, as can be seen for example in the new reloadable crypto device classes, enhanced temperature ranges, the network interfaces that can be recon gured directly on the device and the more modest power consumption.

In addition, the new software version supports IPv6, IKEv2, SHA-256 and VLAN as well as various remote functionalities. These include updates to the SINA software, the smartcard configuration and the operational parameters (data container D2) of the SINA CORE modules. In addition, remote access to the administrator interface is possible.

IT security concept

The SINA L3 Box H R 200M-2 is based on a holistic IT security concept. It comprises in particular:

- A ruggedized, intensively tested SINA OS system platform
- Smartcard technology
- IPsec-based cryptography
- SINA CORE crypto module as well as
- Hardware, firmware and software that are dimensioned and configured in accordance with approval standards.

Secure system start and operation

The SINA L3 Box software is coreboot-protected and reliably loaded by the flash memory during system start. All initial configuration data and security associations for the SINA L3 Box are stored in a protected area of the SINA Smartcard. When a SINA L3 Box is started, the security associations to the SINA Management and the primary communications-related SINA L3 Boxes are set up as IPsec VPN tunnels. If necessary, additional security associations or configuration data from the SINA Management are loaded. This greatly simplifies configuration, installation and hardware replacement with the SINA L3 Box.

Systems monitoring

The SINA L3 Boxes log all data related to monitoring during operation. This can be imported into network management systems where it can be processed and/or displayed as required. In addition, selected data can be queried via SNMP.

Use under extreme environmental conditions

The SINA L3 Box H R is based on a ruggedized hardware platform that can be used under extreme environmental conditions. All outward-facing interfaces and layers are protected separately. The housing offers increased protection against impacts, vibration, dust and dampness. Furthermore, unlike the predecessor model the SINA L3 Box H R 200M, the SINA L3 Box H R 200M-2 can be operated in an extended temperature range. In many respects the hardware platform meets the demanding requirements of the MIL-STD-810G standard.

High availability

It is possible to increase the availability and reliability of SINA L3 Boxes by means of redundant configurations. An automatic switchover for example triggers a second SINA L3 Box to take on the functions of the failed SINA L3 Box (hot standby) that was previously active. From software version 3.10, the switching times are significantly accelerated.

SINA L3 Boxes also support geo-redundant and load-balancing configuration. In geo-redundant scenarios, alternative communication channels – which can be prioritised as necessary – run via SINA L3 Boxes in different locations. For load-balancing configuration, the SINA L3 Boxes interact with commercially available load balancers.

Satellite communication

Use of SINA L3 Boxes requires IP-enabled transport networks, including satellite communication lines. The available bandwidth of the satellite lines is used effectively in tandem with satellite optimisers.

Benefits

- Approved for German national SECRET (GEHEIM), under evaluation for NATO SECRET and SECRET UE/EU SECRET
- Post-quantum cryptography
- Remote functionalities
- Higher performance
- Compact design
- Robust hardware platform
- Switchable network interfaces
- Comfortable Management

Management

The SINA L3 Box is configured and controlled centrally by SINA Management. An integrated public key infrastructure (PKI) with associated user management supports essential administrative processes involving SINA Smartcards. This includes, in particular, their personalization, the generation or updating of keys and cryptographic parameters as well as the administration of the associated PINs and PUKs.

SINA products can be kept up to date via remote software updates initiated by SINA Management. This reduces the support overhead in the long term and they can be distributed quickly in the customer networks in the event of a security or bug fix. In addition, this means that users have access to all newly developed features at any time.

Approval-related construction classes

	SINA L3 Box H R 200M-2 27A
Performance data	
Approval level	German national SECRET (GEHEIM) and TOP SECRET (STRENG GEHEIM*)
	Under evaluation for NATO SECRET and SECRET UE/EU SECRET
Boot integrity protection	coreboot
Software versions	3.10
Manipulation protection	integrated
Emission protection	SDIP 27 Level A
Authentication tokens	SINA Smartcard

The Remote Configuration Update allows configurations for SINA L3 boxes, users, SINA clients as well as series clients to be changed without having to update the smartcards concerned. The devices send the currently configured state to SINA Management so that the administrator obtains an overview of the devices and smartcards under his care from the information returned.

Technical Data

General data	
Dimensions (W × H × D)	210 × 65 × 350 mm
Weight	10 kg (without assembly plate)
Power consumption	45 W
Voltage supply	DC 24 V (24 ... 28 V) / 3 A
BTU/h	153,4
Cryptography	
Module	SINA CORE 2 L3
Encryption performance	200 MBit/s
Symmetrical encryption process	Libelle, VEGAS
Asymmetrical encryption process	EC-GDSA, EC-DH
LAN connections	
Network interfaces	1 × 100/1000 MBit LWL (switchable) 1 × 100/1000 MBit LWL in SINA CORE (switchable)
Plug type	LC
Temperature ranges	
Operation	-15 °C to +45 °C
Transport and storage	-25 °C to +60 °C
Miscellaneous	
Protection typte	IP67
Hardening	MIL-STD-810G

*In usage situations where data classified as German national STRENG GEHEIM is being processed, the usage scenario and IT security concept for the SINA L3 Box H R 200M-2 must be specifically agreed with the German Federal Office for Information Security (BSI).

Sources
Public authority customers can acquire SINA components via the framework contract with the Procurement Office of the German Federal Ministry of the Interior, or through the SINA supplemental contract with the German Federal Armed Forces. secunet would also be pleased to serve all other national and international customers.

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