

R&S®TRUSTED VPN IP ENCRYPTOR

Specifications

R&S®Trusted VPN is a hardware-based encryption device that enables secure data exchange through IP networks and ensures data confidentiality and integrity. In the modern business world, business processes are increasingly centralized and moved to data centers or clouds. At the same time, the number of remote working places is growing rapidly. Inevitably, data must be transmitted over public IP networks. This enables malicious third parties to get access to sensitive information. The solution is virtual private networks (VPN).

R&S®Trusted VPN was developed to meet the needs of authorities and companies with higher security requirements, and to secure classified information. R&S®Trusted VPN has the following key features:

- Highspeed layer 3 encryption
- Fast putting into service and easy exchange of certificates through centralized management
- TPM-based authentication
- Minimizing potential attack vectors through logical separation of user and management levels

Specifications | Version 07.00

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Characteristics

Services	• IKE server, IPsec server, IP filter, DHCP client/server, NTP client • VLAN support • Policy-based access and routing according to network/port profiles • Redundant VPN gateways • Network address translation (NAT): net-to-net, host-to-net • VPN concentrator functionality for forwarding the entire data traffic through a central appliance • Gateway of last resort configuration
Management	• The devices are initialized, configured and controlled through a central security management system; the devices are also protected against identity theft and man-in-the-middle-attacks through TPM based authentication • Web-based administrator access to the management server via dedicated Ethernet port • Integrated deployment service with firmware rollout according to freely selectable groups • Comprehensive control mechanisms and revision-proof reporting • Smart card-based user authentication
IPsec protocols	• Encapsulating Security Payload (ESP) • NAT-Traversal (NAT-T) • Dead Peer Integration (DPD) • Integration of sites without public static IP address
VPN modes	• Site-to-Site-VPN for direct connection between two sites • VPN software client support • Internal IP addresses for VPN road warriors can be assigned in the source NAT process

Cryptography and security

Internet key exchange	• Diffie-Hellmann (2048 bit to 4096 bit) or ECC (Brainpool P512r1) • Perfect Forward Secrecy • IKEv2
Authentication procedure	• Via X.509 certificates RSA (2048 bit to 4096 bit) or ECC (Brainpool P512r1) • External (only roadwarriors) or integrated certificate authority (CA)
Encryption	• Symmetrical functions: AES-128, AES-256 • Hash functions: SHA-2 256, SHA-2 512
Secure Boot and HDD Encryption	R&S®Trusted VPN uses a mixture of UEFI secure boot and TPM-based trusted boot to implement two security functions at the same time: • Securing the integrity of the system software while booting • Hard drive disk encryption for protection of the data

Technical specifications

Gen2			
	R&S®Trusted VPN-S	R&S®Trusted VPN-L	R&S®Trusted VPN-XL
Encryption performance bidirectional			
1 tunnel	250 Mbit/s	600 Mbit/s	1400 Mbit/s
254 tunnels	–	600 Mbit/s	6000 Mbit/s
Recommended number of clients	< 100	< 1000	< 3500
CPU	1.1 GHz Intel® Celeron® 2 cores new instructions (AES-NI)	2.4 GHz Intel® Atom™ 8 cores new instructions (AES-NI)	Intel® Xeon Silver 4210/2.2 GHz 10 cores new instructions (AES-NI, AVX512)
RAM	1 Gbytes onboard memory 1 × SODIMM socket	4 Gbytes	16 Gbytes
Hard drive disk	16 Gbytes onboard eMMC	32 Gbytes SATA	2 × 1 Tbytes SATA RAID level1
Ethernet interfaces	2 × Gigabit Ethernet	8 × Gigabit Ethernet	2 × 10 Gigabit Ethernet – SFP+ 4 × Gigabit Ethernet
TPM	TPM 2.0	TPM 1.2/2.0 (Gen2)	TPM 2.0
Design type	Desktop device	19" RU	19" RU
Additional features	LCD display, passive cooling	LCD display	
Power supply	12 V DC input, external power supply unit 24 W with connector plug	150 W ATX	2 × 500 W (redundant)
Power consumption			
Idle	4.2 W	24.2 W	75.8 W
Load	7.3 W	31.6 W	103.4 W
BTU/hour	82 BTU/h	512 BTU/h	82 BTU/h
Temperature range			
Operation	0 °C to +50 °C	0 °C to +40 °C	+10 °C to +35 ° at sea level with a reduction of 1 °C per 305 m above sea level (maximum: 3050 m), no direct persistent sunlight
Transport and storage	–20 °C to +70 °C	–20 °C to +70 °C	–30 °C to +60 °C
Humidity during operation	10 % to 90 % relative humidity, without dew	20 % to 90 % relative humidity, without dew	8 % to 90 % relative humidity, without dew
MTBF			
Device	528 113 h	492 530 h (with integrated power supply unit)	445 260 h (with integrated power supply unit)
External power supply unit	175 000 h	–	–
Dimensions	4.2 cm × 16.5 cm × 10.2 cm (1.65 in × 6.5 in × 4.0 in)	4.32 cm × 43.47 cm × 29.1 cm (1.7 in × 17.11 in × 11.46 in)	4.32 cm × 43.47 cm × 74.67 cm (1.7 in × 17.11 in × 29.4 in)
Weight			
Device	0.8 kg (1.8 lb)	2.7 kg (6.0 lb)	16.7 kg (36.8 lb)
External power supply unit	0.2 kg (0.4 lb)	–	–

Gen3		
	R&S®Trusted VPN-S	R&S®Trusted VPN-L
Encryption performance bidirectional		
1 tunnel	250 Mbit/s	600 Mbit/s
254 tunnels	–	600 Mbit/s
Recommended number of clients	< 100	< 1000
CPU	1.1 GHz Intel® Celeron®	2.4 GHz Intel® Atom™
	2 cores	12 cores
	new instructions (AES-NI)	new instructions (AES-NI)
RAM	1 Gbyte onboard memory	16 Gbytes
	1 × SODIMM socket	
Hard drive disk	16 Gbytes onboard eMMC	128 Gbytes SSD
Ethernet interfaces	2 × Gigabit Ethernet	6 × Gigabit Ethernet
		2 x 10 Gigabit Ethernet SFP+
TPM	TPM 2.0	TPM 2.0
Design type	Desktop device	19" RU
Additional features	LCD display, passive cooling	LCD display
Power supply	12 V DC input	2 x 300 W (redundant)
	external power supply unit 24 W with connector plug	
Power consumption		
Idle	4.2 W	24.2 W
Load	7.3 W	31.6 W
BTU/hour	82 BTU/h	512 BTU/h
Operation	0 °C to +40 °C	0 °C to +40 °C
Transport and storage	–20 °C to +60 °C	–20 °C to +60 °C
Humidity during operation	10 % to 80 % relative humidity, without dew	20 % to 80 % relative humidity, without dew
MTBF		
Device	35 300 h	86 476 h
External power supply unit	–	–
Dimensions	16.5 cm × 9.2 cm × 4.0 cm	43.0 cm x 30.5 cm x 4.4 cm
	(6.5 in × 3.62 in × 1.73 in)	(16.93 in x 12.01 in x 1.73 in)
Device	0.7 kg (1.55 lb)	5.3 kg (11.69 lb)
External power supply unit	0.3 kg (0.67 lb)	–