

funkwerk TR200aw | TR200bw

Fully Convergent Multifunctional Gateway

TR200aw|TR200bw

The Funkwerk TR200 is a multifunctional gateway designed for versatility and flexibility with a huge variety of professional features from routing, WLAN and telephony. It was specially developed for high-speed Internet access and can also be used for remote access in small to medium-sized enterprises or remote offices. Standardly equipped with a 4-port switch, the device also includes 2 IPSec tunnels (default).



For the connection to a trunk the basic version offers an analog and a ISDN exchange connection, which can be used alternatively. Two analog ports and an internal ISDN bus provide the direct connection of terminal devices. Furthermore SIP terminal devices (IP telephones, soft clients, etc.) can be registered at TR200. You are able to register at up to 10 SIP providers.

The control of the firewall and voice-data prioritization are assumed automatically by the TR200 to simplify configuration. A 4-channel DSP for voice-data processing has been integrated into the router to guarantee high voice quality.

As a wireless router, the Funkwerk TR200 supports the 802.11b/g standards with a gross throughput rate of 54 MBps. In addition to WEP encryption, the secure WPA or WPA2 mode for the use of preshared keys or inclusion of a Radius server is available to make sure that data transmission via the air interface remains secure. Access checks are already made at the port level via 802.1x. The multi-SSID function makes it possible to form several different user groups, each with their own privileges. With a push-button the WLAN modul can be switch off completely. A HTML user interface is available to employ the configuration of the routers.

Versions

Feature	Description
TR200aw	ANNEX-A
TR200bw	ANNEX-B

Highlights

Feature	Description
Integrated ADSL modem	ADSL2 / ADSL2+ with downloads up to 12 / 24 Mbps
2 ISDN ports	Also for backup of ADSL connection, remote administration
4 Port Ethernet Switch 10/100	Ability to separate Ethernet Port for configuring a DMZ network segment or Load Balancing scenarios
Multi-SSID	Virtual WLAN interfaces for individual access
IPSec	With AES, certificates, IPComp, NAT Traversal, RADIUS
DynDNS	Router can still be reached over the Internet in spite of dyn. IP address
RADIUS, TACACS+	Secure authentication
VLAN	Secure separation of network segments
Event Scheduler	Time-based execution of commands
Stateful Inspection Firewall	connection based firewall
Content filtering	30 days test license
SSH login	Encrypted configuration session
Configuration Wizard	Configuration assistant for HTTP for Intranet and WLAN

Wireless LAN

Feature	Description
Standards	IEEE802.11b resp. IEEE802.11g
802.11i	802.1x/EAP-MD5, 802.1x/EAP-TLS, 802.1x/EAP-TTLS, 802.1x/EAP-PEAP
Multi SSID	Several service sets per radio in AP mode.
WEP 64/128	WEP 64 (40 Bit), WEP 128 (104 Bit)
WPA / WPA2	WPA Enterprise Mode; WPA PSK Mode; WPA2 Enterprise Mode; WPA2 PSK Mode
Channels	13 channels (Europe) / 11 channels (USA)
Transmission Capacity	max. 100 mW (20 dBm) e.i.r.p
Receiver Sensitivity IEEE802.11b	11 Mbps:-82 dBm; 5,5 Mbps: -87 dBm; 2 Mbps: -91 dBm; 1 Mbps: -94 dBm
Receiver Sensitivity IEEE802.11g	54 Mbps:-65 dBm; 48 Mbps:-66 dBm; 36 Mbps:-70 dBm; 24 Mbps:-74 dBm; 18 Mbps:-77 dBm; 12 Mbps:-79 dBm; 9 Mbps:-81 dBm; 11 Mbps:-80 dBm; 5,5 Mbps: -83 dBm; 2 Mbps: -84 dBm; 1 Mbps: -87 dBm

DSL Interface

Feature	Description
ADSL	G.dmt over ISDN (ITU G.992.1 Annex B, ISDN - U-R2), G.Lite (ITU G.922.2)
ADSL2 / ADSL2+	with downloads up to 12 / 24 Mbps
High-speed Internet	PPPoA (RFC 2364) and PPPoE (RFC 2516)
ATM	AAL5 as Layer 1 protocol, PVCs, RFC 1483 encapsulation (LLC- or VC-multiplexed), support for at least two simultaneous services, 5 or more simultaneous VC connections
ATM	Support of several VPI/VCI, line monitoring facilities through OAM F4/F5 protocol elements
ATM - VBR3	available

ISDN Interface

Feature	Description
ISDN protocols	Euro-ISDN
B-channel protocols	Excellent interoperability with other manufacturers (Raw HDLC, CISCO HDLC, X.75)
PPP, ML-PPP	(See Software)
CAPI	CAPI 2.0
Bit rate adaptation	V.110 (1,200 up to 38,400 bps), V.120 up to 57,600 kbps (HSCSD) for connection to GSM subscribers
Automatic backup	Backup of the connection in case of failure of the ADSL line, including re-establishment of the VPN tunnels

Security

Feature	Description
RADIUS	Central check of access authorization at a RADIUS server (PPP and Login Authentication)
TACACS+	Support of TACACS a security application that provides centralized validation of users
Content filtering	30 day evaluation licence
VPN - IPSec	Inclusive, with a max. of 2 simultaneous tunnels
VPN - IPSec	Powerful encryption up to 256 bits (AES, 3DES, DES, CAST, Blowfish, Twofish)
VPN - IPSec	Callback: Transmission of dynamic IP address in D or B channel; free-of-charge licence necessary
VPN-IPSec DPD	Dead Peer Detection for IPSec tunnel
DynDNS / DynVPN	Router can still be reached over the Internet in spite of dyn. IP address
IKE for IPSec	Pre-Shared Keys and X.509 certificate support
X.509	X.509 v1/v3 certificates (PKCS#7/8/10, 12, CLRs, SCEP)
QoS for IPSec	Available
PKI Support for IPSec	Available
NAT Traversal for IPSec	Available
IPCOMP	IP Compression
IPSec / RADIUS	Available
IPSec Redesign	Policy manager and interface concept
L2TP	layer 2 tunneling protocol for ATM, Ethernet, PPP; user authenticatio
GRE	V.0 according RFC 2784 for common encapsulation

Maintenance and Service

Feature	Description
SSH login	Secure connections for terminal applications
Trace / debugging / monitoring	Ethernet traces
XADMIN	Roll out tool for larger router installations (IP+ISDN)
Documentation	Complete toolset and documentation on CD

Software Features

Feature	Description
TCP/IP routing	Routing information updating and distribution, static or dynamic (RIP v1/v2/triggered, RFC 2091), selectable for each interface, ProxyARP, BOOTP/DHCP forwarding
Extended IP routing	Dependent on source/destination port, source IP address, TOS ..., i.e. policy-based routing
IP load balancing	Bandwidth management
PPP	Authentication mechanisms (PAP, CHAP, MS-CHAP, MS-CHAP v2), standard PPP, dynamic IP address assignment (server and client mode)
PPPoE	Point-to-Point Protocol over Ethernet (Client and Server) for high-speed Internet access over ADSL (RFC 2516)
DynDNS	Router can still be reached over the Internet in spite of dyn. IP address
Funkwerk Access Point Discovery	detection of configured and unconfigured Funkwerk Access Points in the LAN
Connection time out	Short hold enables automatic call clearing

Hardware Features

Feature	Description
Processor / memory	TI Prozessor, 8 MB Flash, 32 MB RAM
ADSL	RJ11 port for connections to splitter
ADSL chipset	Texas Instruments chipset for ADSL modulation
LAN	Autosensing 10/100 Mbps Ethernet twisted pair
4-port switch	4-port autosensing 10/100 Mbps Ethernet switch
WLAN	Internal radio modul, 2,4 GHz Band, 1 external antenna (Antenna Diversity for 802.11b)
ISDN	2 x BRI (1 x external, 1 x internal)
Analogue	2 x FXS, 1 x FXO
Console	Serial console port
Power supply	External AC/DC converter 12 V DC, 1,25 A (approx. 2 W per internal ISDN-Bus)
Status LEDs	Power, Status, 4 x 10/100 BT, WAN, DSL, VoIP, ...
Housing	Metal housing
Fanless design	Long lifetime
Dimensions	205 x 29 x 172 mm (W x H x D)
Weight	Approx. 1000 g

TR200aw | TR200bw Telephony Features

- o Inquiry call, Broker's call, Three-party conference
- o Calling Line Identification Restriction (CLIP, CLIR)
- o Call forwarding (CFU, CFB, CFNR)
- o Call waiting
- o Busy on Busy
- o Station guarding (Do not disturb feature)
- o Automatic exchange line access
- o Pick-up (Call pick-up)
- o AOC transfer internal S0
- o CLIP, CLIP off Hook with FXS
- o Terminal device type for analog connections (6 variants)
- o Call Deflection - Deflecting calls before accepting
- o Call Through
- o CCBS, CCNR - Autom. completion of call to busy subscriber - of call on no answer
- o Direct dial-in (baby phone / emergency calls)
- o Point-to-multipoint access (P-MP), Point-to-point connection (P-P)
- o Remote configuration over ISDN
- o Follow me call forwarding service
- o Message Waiting Indication external/internal: (ISDN only)
- o MSN-specific line access
- o Name assignment extensions
- o High priority emergency call numbers
- o Partial Rerouting (with P-P access only)
- o Room monitoring internal
- o SMS in the fixed-line network
- o Exchange line access authorization for internal parties (6 stages)
- o Restricted and unrestricted numbers
- o Status display for internal call forwardings
- o Phone book, Speed dialing from the telephone directory
- o Door terminal adapter for analog ports
- o UUS1
- o VoIP/SIP-telephony with up to 4 SIP-terminal devices in a LAN
- o Recall per time
- o 14 internal subscribers max.
- o 3-digit telephone numbers
- o 10 Emergency calls, 10 Direct dial-in number
- o Day / night call mode
- o Two calendars/switching times
- o 300 telephone book entries
- o Two internal music on hold tunes
- o Fallback on busy or missing bandwidth
- o Ten SIP-providers
- o SIP-User Agent, -Client, -Registrar, -Proxy
- o Discrete DSP-channels for media transfer
- o DSP-codecs: G.711, G.723.1, G.726, G.729a/b
- o Intelligent bandwidth management
- o Support of ISDN system phones