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## LANCOM 1751 UMTS

Business VPN router for professional site connectivity with maximum flexibility and redundancy

- Integrated ADSL2+ and UMTS modem with HSxPA, EDGE and GPRS support
- 5 IPSec VPN channels integrated; optional: 25 simultaneous VPN channels and hardware VPN accelerator
- Stateful-inspection firewall with intrusion detection/denial-of-service protection
- 4 separate configurable switch ports
- Load balancing with up to 4 WAN connections
- ISDN interface for remote access, backup or LANCAPI

With its integrated UMTS/HSDPA modem, the ADSL2+ router LANCOM 1751 UMTS sets standards in flexibility and redundancy. Should a standard DSL connection fail at a site, branch office or subsidiary, automatic compensation is provided by a broadband UMTS/HSDPA or EDGE backup connection. Along with this unique level of high availability, the LANCOM 1751 UMTS is equipped as standard with 5 VPN channels (optionally 25), an integrated ADSL2+ modem and four separately configurable switch ports, so offering a huge variety of professional applications.

The SIM-card holder is easily accessible via the back cover and, by connecting an external UMTS antenna, indoor reception can be greatly improved. A real highlight: Anti-theft by ISDN self-callback and location determination by GPS!

#### **More Security.**

The integrated firewall with the latest security functions such as stateful inspection, Intrusion Detection and Denial-of-Service protection is supplemented by dynamic bandwidth management and comprehensive functions for backup, high-availability and redundancy. The integrated VPN gateway that fulfills the IPSec standard, and the optional hardware accelerator provide optimal security for connecting telecommuters and branch offices thanks to the high-security 3-DES or AES encryption and support of digital certificates.

#### **More Management.**

The management systems LANconfig and LANmonitor are included and offer not only cost-effective remote maintenance of entire installations and highly convenient setup wizards, but also full real-time monitoring and logging. What's more, service providers benefit from the broad range of scripting methods and professional access with individual access rights for administrators via SSH, HTTPS, TFTP and ISDN dial-in.

#### **More Benefits.**

The versatile functions for address translation and routing allow completely different networks to be connected over common infrastructure. Existing networks at partner companies, home-office workstations or subsidiaries can be integrated into the VPN without problem. With the option of port separation and a separate address range, your own web servers can be securely separated from the LAN. The integrated ISDN interface allows remote field installations, dial-up access and CAPI featured functions such as fax services for all connected PCs.

#### **More Reliability for the Future.**

From the very start, LANCOM products are designed for a product life of several years. They are equipped with hardware dimensioned for the future. Even reaching back to older product generations, updates to the LANCOM Operating System—LCOS—are available several times a year, free of charge and offering major features. LANCOM offers unbeatable protection of your investment!

<b>Firewall</b>	
Stateful inspection firewall	Incoming/Outgoing Traffic inspection based on connection information
Packet filter	Check based on the header information of an IP packet (IP or MAC source/destination addresses; source/destination ports, DiffServ attribute); remote-site dependant, direction dependant, bandwidth dependant
Extended port forwarding	Network Address Translation (NAT) based on protocol and WAN address, i.e. to make internal webservers accessible from WAN
N:N IP address mapping	N:N IP address mapping for translation of IP addresses or entire networks
Tagging	The firewall marks packets with routing tags, e.g. for policy-based routing
Actions	Forward, drop, reject, block sender address, close destination port, disconnect
Notification	Via e-mail, SYSLOG or SNMP trap
<b>Quality of Service</b>	
Traffic shaping	Dynamic bandwidth management with IP traffic shaping
Bandwidth reservation	Dynamic reservation of minimum and maximum bandwidths, totally or connection bases, separate settings for send and receive directions
DiffServ/TOS	Priority queuing of packets based on DiffServ/TOS fields
Packet-size control	Automatic packet-size control by fragmentation or Path Maximum Transmission Unit (PMTU) adjustment.
Layer 2/Layer 3 tagging	Automatic or fixed translation of layer-2 priority information (802.11p-marked Ethernet frames) to layer-3 DiffServ attributes in routing mode. Translation from layer 3 to layer 2 with automatic recognition of 802.11p-support in the destination device.
<b>Security</b>	
Intrusion Prevention	Monitoring and blocking of login attempts and port scans
IP spoofing	Source IP address check on all interfaces: only IP addresses belonging to the defined IP networks are allowed
Access control lists	Filtering of IP or MAC addresses and preset protocols for configuration access and LANCAPI
Denial of Service protection	Protection from fragmentation errors and SYN flooding
General	Detailed settings for handling reassembly, PING, stealth mode and AUTH port
URL blocker	Filtering of unwanted URLs based on DNS hitlists and wildcard filters
Password protection	Password-protected configuration access can be set for each interface
Alerts	Alerts via e-mail, SNMP-Traps and SYSLOG
Authentication mechanisms	PAP, CHAP and MS-CHAP as PPP authentication mechanism
Anti-theft	Anti-theft ISDN site verification over B or D channel (self-initiated call back and blocking) or by GPS positioning.
Adjustable reset button	Adjustable reset button for "ignore", "boot-only" and "reset-or-boot"
<b>High availability / redundancy</b>	
VRRP	VRRP (Virtual Router Redundancy Protocol) for backup in case of failure of a device or remote station. Enables passive standby groups or reciprocal backup between multiple active devices including load balancing and user definable backup priorities
FirmSafe	For completely safe software upgrades thanks to two stored firmware versions, incl. test mode for firmware updates
UMTS backup	In case of failure of the main connection, a backup connection is established over the internal UMTS modem; automatic return to the main connection
ISDN backup	In case of failure of the main connection, a backup connection is established over ISDN; automatic return to the main connection
Load balancing	Static and dynamic load balancing over up to 4 WAN connections; channel bundling with Multilink PPP (if supported by network operator)
VPN redundancy	Control of up to 16 redundant VPN gateways for high availability or load balancing
Line monitoring	Line monitoring with LCP echo monitoring, dead-peer detection and up to 4 addresses for end-to-end monitoring with ICMP polling.
<b>VPN</b>	
1-Click-VPN Client assistant	One click function in LANconfig to create VPN client connections, incl. automatic profile creation for the LANCOM Advanced VPN Client
1-Click-VPN Site-to-Site	Creation of VPN connections between LANCOM router via drag and drop in LANconfig
Number of VPN tunnels	5 IPSec connections active simultaneously (25 with VPN-25 Option), 25 connections configurable (50 with VPN-25 Option). Configuration of all remote sites via one configuration entry when using the RAS user template or Proadaptive VPN
Hardware accelerator (optional)	Activated 3DES/AES hardware encryption with the VPN-25 Option
IKE	IPSec key exchange with Preshared Key or certificate
Certificates	X.509 digital certificate support, compatible with Microsoft Server / Enterprise Server and OpenSSL, upload of PKCS#12 files via HTTPS interface
Certificate rollout	Automatic creation, rollout and renewal of certificates via SCEP (Simple Certificate Enrollment Protocol)

VPN	
Certificate revocation lists (CRL)	CRL retrieval via HTTP
RAS user template	Configuration of all VPN client connections in IKE ConfigMode via a single configuration entry
Proadaptive VPN	Automated configuration and dynamic creation of all necessary VPN and routing entries based on a default entry for site-to-site connections. Propagation of dynamically learned routes via RIPv2, if required.
Algorithms	3DES (168 bit), AES (128, 192 or 256 bit), Blowfish (128 bit), RSA (128 or -448 bit) and CAST (128 bit); MD-5 or SHA-1 hashes
NAT-Traversal	NAT-Traversal (NAT-T) support for VPN over routes without VPN passthrough
IPCOMP	VPN data compression based on LZS or Deflate compression for higher IPSec throughput
LANCOM Dynamic VPN:	Enables VPN connections from or to dynamic IP addresses. The IP address is communicated via ISDN B- or D-channel or with the ICMP or UDP protocol in encrypted form. Dynamic dial-in for remote sites via connection template
Dynamic DNS	Enables the registration of IP addresses with a Dynamic DNS provider in the case that fixed IP addresses are not used for the VPN connection
Specific DNS forwarding	DNS forwarding according to DNS domain, e.g. internal names are translated by proprietary DSN servers in the VPN; external names are translated by Internet DNS servers.
VPN throughput (max.)*	
1364-byte packet size	33 Mbps
265-byte packet size	6 Mbps
*) Notice	all VPN figures with AES encryption and active VPN hardware acceleration
Firewall throughput (max.)	
1470-byte packet size	61 Mbps
256-byte packet size	9 Mbps
Routing functions	
Router	IP and NetBIOS/IP multi-protocol router
VLAN	VLAN ID definable per interface and routing context (4094 IDs)
Q-in-Q tagging	Support of layered 802.1q VLANs
Advanced Routing and Forwarding	Separate processing of 8 contexts due to virtualization of the routers. Mapping to VLANs and complete independent management and configuration of IP networks in the device, i.e. individual settings for DHCP, DNS, Firewalling, QoS, Routing etc.
HTTP	HTTP and HTTPS server for configuration by web interface
DNS	DNS client, DNS server, DNS relay, DNS proxy and dynamic DNS client
DHCP	DHCP client, DHCP relay and DHCP server with autodetection
NetBIOS	NetBIOS/IP proxy
NTP	NTP client and SNTP server, automatic adjustment for daylight-saving time
Policy-based routing	Policy-based routing based on routing tags. Based on firewall rules, certain data types are marked for specific routing, e.g. to particular remote sites or lines.
Dynamic routing	Dynamic routing with RIPv2. Learning and propagating routes; separate settings for LAN and WAN
LAN protocols	
IP	ARP, proxy ARP, BOOTP, LANCAPI, DHCP, DNS, HTTP, HTTPS, IP, ICMP, NTP/SNTP, NetBIOS, PPPoE (server), RADIUS, RIP-1, RIP-2, RTP, SIP, SNMP, TCP, TFTP, UDP, VRRP
WAN protocols	
ADSL, Ethernet	PPPoE, PPPoA, IPoA, Multi-PPPoE, ML-PPP, PPTP (PAC or PNS) and plain Ethernet (with or without DHCP), RIP-1, RIP-2, VLAN
ISDN	1TR6, DSS1 (Euro-ISDN), PPP, X75, HDLC, ML-PPP, V.110/GSM/HSCSD, CAPI 2.0 via LANCAPI, Stac data compression
WAN operating mode	
xDSL	ADSL1, ADSL2 or ADSL2+ with internal ADSL2+ modem
UMTS/HSDPA	GPRS, Edge, UMTS or HSxPA with internal UMTS modem
ISDN	ISDN data or voice usage via internal ISDN interface
UMTS modem	
Supported standards	UMTS, HSxPA (HSDPA with up to 7.2 Mbps, HSUPA with up to 2.0 Mbps), Edge, and GPRS support
UMTS and HSxPA bands	850/1900/2100 MHz
EDGE/GPRS bands	850/900/1800/1900 Mhz

<b>Interfaces</b>	
WAN: ADSL	ADSL over ISDN compliant with ITU G.992.1 Annex B (compatible to Deutschen Telekom U-R2 connections) or ADSL over POTS compliant with ITU G.992.1 Annex A
WAN: ADSL2+	ADSL2+ over ISDN compliant with ITU G.992.3, ITU G.992.5 Annex B (ADSL2+) or ADSL2+ over POTS compliant with ITU G.992.3 and ITU G.992.5 Annex A (ADSL2+)
WAN: GSM/UMTS	UMTS, HSxPA, GPRS or Edge with integrated UMTS modem
Ethernet ports	4 individual 10/100-Mbps Fast Ethernet ports; up to 3 ports can be switched as additional WAN ports with load balancing
- freely configurable	Each Ethernet port can be freely configured (LAN, DMZ, WAN, monitor port, off). LAN ports can be operated as a switch or separately. Additionally, external DSL modems or termination routers can be operated as a WAN port with load balancing and policy-based routing. DMZ ports can be operated with their own IP address range without NAT
ISDN	ISDN S0 bus
Serial interface	Serial configuration interface / COM port (8 pin Mini-DIN): 9,600 - 115,000 baud
External antenna connectors	Two SMA antenna connectors for external UMTS antennas (rx diversity) or use of a gps antenna at the aux connector
<b>Management</b>	
LANconfig	Configuration program for Microsoft Windows, incl. convenient Setup Wizards. Optional group configuration, simultaneous remote configuration and management of multiple devices over ISDN dial-in or IP connection (HTTPS, HTTP, TFTP)
LANmonitor	Monitoring application for Microsoft Windows for (remote) surveillance and logging of the status of LANCOM devices and connections, incl. PING diagnosis
Webconfig	Integrated web server for the configuration of LANCOM devices via Internet browsers with HTTPS or HTTP
Access rights	Individual access and function rights for up to 16 administrators
User administration	RADIUS user administration for dial-in access (PPP/PPTP and ISDN CLIP)
Remote maintenance	Remote configuration with Telnet/SSL, SSH (with password or public key), browser (HTTP/HTTPS), TFTP or SNMP, firmware upload via HTTP/HTTPS or TFTP. A remote configuration for devices behind der LANCOM can be accomplished (after authentication) via tunneling of arbitrary TCP-based protocols, e.g. for HTTP(S) remote maintenance of VoIP phones or printers of the LAN
ISDN remote maintenance	Remote maintenance over ISDN dial-in with calling-number check
Security	Access rights (read/write) over WAN or (W)LAN can be set up separately (VPN only, Telnet/SSL, SSH, SNMP, HTTPS/HTTP), access control list
Scripting	Scripting function for batch-programming of all command-line parameters and for transferring (partial) configurations, irrespective of software versions and device types, incl. test mode for parameter changes
SNMP	SNMP management via SNMP V2, private MIB exportable by WEBconfig, MIB II
Timed control	Scheduled control of parameters and actions with CRON service
TFTP	TFTP client and server with variable file names (name, MAC/IP address, serial number)
Diagnosis	Extensive LOG and TRACE options, PING and TRACEROUTE for checking connections, LANmonitor status display, internal logging buffer for SYSLOG and firewall events, monitor mode for Ethernet ports
Firmware update*	Seperate firmware update of the internal UMTS modem possible
*) Note	for future release
<b>Statistics</b>	
Statistics	Extensive Ethernet, IP and DNS statistics; SYSLOG error counter
Accounting	Connection time, online time, transfer volumes per station. Snapshot function for regular read-out of values at the end of a billing period.
Export	Accounting information exportable via LANmonitor and SYSLOG
<b>Hardware</b>	
Power supply	12 V DC, external power adapter (230 V)
Environment	Temperature range 5–35°C during continuous operation; humidity 0–80%; non-condensing
Housing	Robust synthetic housing, rear connectors, ready for wall mounting, Kensington lock; 210 x 45 x 140 mm (W x H x D)
Power consumption (max)	ca. 10 Watts
<b>Declarations of conformity</b>	
CE	EN 60950
<b>Package content</b>	
Manual	Printed User Manual (DE, EN) and Quick Installation Guide (DE/EN/FR/ES/IT/PT/NL)
CD	CD with firmware, management software (LANconfig, LANmonitor, LANCAPI) and documentation
Cable	Serial configuration cable, 1.5m
Cable	1 Ethernet cable, 3m

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Scope of features: as of LCOS version 7.2

Package content	
Cable	ADSL cable, 3m
Cable	ISDN cable, 3m
Antennas	Two 2 dBi dipole UMTS/GPRS antennas (850-960 Mhz and 1700-2220 Mhz)
Power supply unit	12 V DC, external power adapter (230 V)
Support	
Warranty	3 years, support via Hotline and Internet KnowledgeBase
Software updates	Regular free updates (LCOS operating system and management tools) via Internet
Options	
VPN	LANCOM VPN-25 Option (25 channels, incl. activated VPN hardware accelerator), item no. 60083
Service	LANCOM Service Option (24h advance replacement within Germany, 4 year warranty, not for PoE Power Injector), item no. 61401
Accessories	
Documentation	LANCOM LCOS Reference Manual (DE), item no. 61700
19" Rack Mount	19" rackmount adapter, item no. 61501
VPN Client Software	LANCOM Advanced VPN Client for Windows® 2000, Windows® XP, Windows Vista™, single license, item no. 61600
VPN Client Software	LANCOM Advanced VPN Client for Windows® 2000, Windows® XP, Windows Vista™, 10 licenses, item no. 61601
VPN Client Software	LANCOM Advanced VPN Client for Windows® 2000, Windows® XP, Windows Vista™, 25 licenses, item no. 61602
Item numbers	
LANCOM 1751 UMTS Annex B	61621
LANCOM 1751 UMTS Annex A	61622
LANCOM 1751 UMTS Annex A UK	61623

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