

ALCATEL-LUCENT OMNIACCESS 5725R ENTERPRISE SERVICES ROUTERS

Rugged wireless 4G routers for industrial-grade environments



The Alcatel-Lucent OmniAccess™ 5725R comes with an integrated Ethernet switch and is capable of serving a large number of intelligent electronic devices at a remote site without additional equipment. Its embedded managed switch includes full support of VLANs and other advanced switching features.

The OmniAccess 5725R can guarantee optimal performance and maximum security in communications among multiple services in IP networks. The router multiplexes remote site communications using embedded cellular broadband or ADSL links, or flexible external modems. Maximum reliability communication is guaranteed thanks to a full range of management, supervision and backup functions.

The ruggedized router also comes with the intelligence required for efficient implementation of highly secured, scalable and permanently available communications services based on broadband links. Communications cyber-security is supported with state-of-the-art, low-latency hardware encryption and a complete stack of VPN protocols and firewalling techniques.

FEATURES

- Reliable LTE wireless WAN performance
- WAN connectivity
- Advanced security features
- Integrated VoIP solution
- High-performance wireless WAN

BENEFITS

- Ensures optimal availability and reliability
- Provides maximum security
- Lowers CAPEX because of integrated Ethernet switch and scalability

Table 1 shows the detailed features of the OmniAccess 5725R.

Table 1. OmniAccess 5725R detailed features

FUNCTIONS	FEATURES
Reliable LTE wireless-WAN (WWAN) performance	<ul style="list-style-type: none"> • Two 4G cellular interfaces provide uninterrupted vehicle connectivity and application continuity when travelling through poor coverage areas, for example from a private city wireless network onto a commercial carrier service • Automatic selection of the best available connection, based on network availability, signal reception level, quality of service (QoS), time of the day, cost, speed or position • Passive link supervision: Permanently controls signal coverage, technology availability, IP transmission service status and transmission activity • Poll-based link supervision: Detects and corrects failures and degradations on the 4G communications; the router controls error rate, link latency and jitter to guarantee utmost performance of the streaming transmission (real-time IP-CCTV image transmission or voice) • Tight integration of internal cellular modules for shock and vibration resilience, improved radio transmission and reception, protection against theft and advanced monitoring for troubleshooting (instead of the unprofessional USB-based solutions) • Up to two antennas per radio interface to maximize coverage at any location • WWAN+ proprietary optimization of network protocols for improved communication over cellular networks
WAN connectivity	<ul style="list-style-type: none"> • Independent Gigabit Ethernet (GigE)10/100/1000M port for connecting to WAN Ethernet lines (requires a license) • High processing capacity for maximum performance for Ethernet transmission • Full VLAN support in the GigE port and Fast Ethernet ports (trunking, filtering and QinQ) • Leased line support with E1/T1 and universal serial port (synchronous) (V.35, X.21 and V.24)
Advanced security features	<ul style="list-style-type: none"> • Incorporated encryption processor optimizes device performance in scenarios with IPSec tunnels • Fully parameterized IPSec client/server: Advanced IPSec features such as PKI encryption (digital certificates), extended authentication and Reverse-Route Injection (RRI) guarantee compatibility with other commercial VPN solutions • Latest-generation meshed topology VPN networks: Dynamic Multipoint VPN technology • IP filtering, MAC filtering and the SPI firewall protect the router from DoS attacks
Integrated VoIP solution	<ul style="list-style-type: none"> • Call rerouting over the main VoIP link or through the GSM telephony line enabled in the router's 4G interface • Universal B2B-UA SIP Server, compatible with Unified Communications and with survival functionality residing in the router itself (does not require IP terminals with survival) • IP switchboard features (IP-PABX): Ring groups, hunt groups, capture groups, double dialing, local message recording, and blind and attended transfers
High-performance WWAN	<ul style="list-style-type: none"> • 4G interface fully integrated in the router's internetworking protocol architecture (CIT features), thereby providing high quality and efficient 4G/VPN services • Three backup options for the main 4G service: Through the secondary SIM card, the external USB/4G modem and by connecting to an alternative APN (double PDP context; optional) • Improved 4G signal stability in areas with poor WWAN coverage: Up to three SMA ports for external 4G antennas (Rx diversity) • Passive WWAN monitoring mechanisms (making it unnecessary to transmit polling traffic): Through the constant monitoring of signal coverage, the connection to the mobile network, the IP connection and the branch traffic transmitted and received over the WWAN link, the router can accurately and dynamically detect problems with device performance and take the appropriate actions (WWAN backup, trap reports, etc.); this minimizes the time the communications service is unavailable • Simultaneous support of audio GSM calls and 4G data transmission for emergency telephony services

Alcatel-Lucent OmniAccess 5725R models

The OmniAccess 5725R comes standard with 6 Fast Ethernet switched ports and 1 WAN VDSL port. The WWAN options include 4G-specific services for Verizon, AT&T and global 4G and 3G.

Table 2. Product matrix

PRODUCT MATRIX	OA5725R
Integrated switched 10/100 Mb ports	6
WAN VDSL2/ADSL2+/ADSL port	1
Wi-Fi option	No
LTE option	Yes
Power consumption (max. under full traffic load)	12.6 W
Heat dissipation	43 BTU/h
Height	4.7 cm (1.8 in.)
Width	18.6 cm (7.3 in.)
Depth	20.3 cm (7.9 in.)
Approximate weight	680 g (1.4 lb)
Operating temperature	-10°C to +60°C (14°F to 140°F)
Humidity operating)	5% to 95% non-condensing

TECHNICAL SPECIFICATIONS

Interfaces and connectors

- Up to 6 x 10/100 Fast Ethernet, RJ-45F
- Up to 2 wireless broadband modules
- 2 x internal SIM trays (easy to access)
- 2 x SMA connectors for external antennas
- 1 x port for local console, RJ-45F
- 1 VDSL/ASDL2+ port, RJ-11 H

Hardware architecture

- 2 status/speed LEDs per Ethernet port
- 2 wireless status/coverage LEDs
- 1 system LED (configurable)
- 1 on/off switch

Local console

- RS-232 at 9600 bps (configurable max. 115,200 bps)
- IEEE 802.1X
- Managed switch
 - EtherLike-MIB (RFC 2665)
 - SNMP-REPEATER-MIB (RFC 2108)
 - MAU-MIB (RFC 2668)

Power

Input power

- 20 V DC to 75 V DC
- 85 V AC to 264 V AC (on selected models)
- Power consumption (max): 12.6 W

Mounting options

- DIN rail
- Wall mounted

Internal 3G interfaces

- Passive detection when interface drops (analyzing received traffic)
- Active detection when interface drops (poll)
- Management protocol through SMS
- Advanced monitoring in the RF interface
- Simultaneous context to double APN (dual PDP)
- Remote upgrading of module firmware over the air
- Automatic handover
- Internal SIM trays

ADSL2+ interface

- Selected through the configuration of the following standards:
 - ANSI T1.413 Issue 2
 - ITU G.992.1 (G.DMT) - Annex A
 - ITU G.992.2 (G.Lite) "LiteADSL over POTS"
 - ITU G.992.3 (ADSL2) - Annex A, L & M
 - ITU G.992.5 (ADSL2+) - Annex A & M
- Downstream speeds: Up to 27Mb/s (ADSL2+ Annex A)
- Upstream speeds: Up to 3 Mb/s (ADSL2+ Annex M)
- Single Ended Line Testing (SELT) diagnostics
- Dying Gasp
- Annex B on demand; contact your dealer

Serial ports

- Asynchronous
- Up to 115,200 bps
- RTS/CTS flow control
- PPP, M-PPP
- SCADA (Modbus, IEC-101/102, gateway IEC-104)

Protocols

- IP, ARP and Proxy ARP
- Static IP routing, RIP I, RIP II, OSPFv2, BGP-4 and policy routing
- BFD Protocol
- Compatible with HSRP
- RFC 2281 VRRP - Virtual Router Protocol
- VRF-Lite
- Quality of backup: Routing based on network quality measurements
- Multi-path per IP packet (with static and dynamic routing)
- Weighted balancing per TCP/IP session
- Multicast: IGMP, IGMP-proxy, MOSPF and PIM-SM
- DHCP client, server and relay
- DNS client and proxy, DNS cache, dynamic upgrades in DNS (RFC 2136)
- SNAT/DNAT/NAPT: Visible subnets, Port Mapping
- PAT fire-walling
- Multiple addresses per interface
- Loopback interfaces
- IEC101 encapsulation
- IP over asynchronous PPP on serial ports

Security and VPNs

- IPsec client/server: Fully parameterized; compatible with third-party IPsec
- IPsec services: ESP and AH
- IPsec operation modes: Tunnel and transport
- Encryption: RC4, DES, 3DES and AES
- Authentication: SHA-1 and MD5
- IKE Protocol
- ISAKMP configuration methods: Oakley Groups 1, 2, 5 and 15
- NAT traversal
- RRI
- Digital certificates: X.509v3, LDAP, PKIX, PEM and DER
- Simple Certificate Enrollment Protocol
- Tunnel End-point Discovery Protocol
- IPsec PMTU discovery
- GRE and multi-GRE: RC4 encryption in GRE tunnels
- Next Hop Resolution Protocol
- Dynamic Multipoint IPsec VPNs (DMVPN)
- Gateway Encryption Transport VPN (GET VPN - GDOI) RFC 3547
- Radius Access Control (RFC 2138)
- L2TP client (LAC) and L2TP server (LNS)
- L2TP/IPsec server; compatible with Microsoft clients
- Advanced IP filters
- Advanced Firewall System
- Stateful firewall
- Advanced packet classification and marking
- URL and content filtering
- MAC filtering per port and per VLAN

QoS

- Packet tagging (DiffServ) per interface, subinterface, protocol, port and MAC
- Congestion control
 - First In First Out (FIFO)
 - Queue priorities
 - BRS proprietary system
 - WFQ
- Low Latency Queuing
- Traffic shaping
 - Proprietary (over BRS)
 - ATM traffic shaping
 - Frame Relay traffic shaping
- QoS-Preclassify
- Fragmentation in FR (FRF.12), PPP and MPPP

PPP and PPPoE

- PPP (RFC 1661), PAP/CHAP, IPCP
- Multilink PPP
- Multi-class extension and multi-link PPP (RFC 2686)
- PPPoE, PPPoE bridge + routing (PPPoE pass-through)
- Multilink PPP over PPPoE
- Renegotiation based on PADT

WWAN-specific functions

- Automatic hand-over
- WWAN service passive fault detection
- Active detection of interface drops based on polls
- WWAN interface advanced real-time monitoring

- Connected dual SIM with multiple selection criteria
 - Signal level
 - GPRS availability in service area
 - IP-GPRS communication quality: Packet error rate, latency, jitter
- Dual PDP context for simultaneous connection to two APNs
- OTA firmware

Bridge

- Bridge over PPP (BCP)
- Spanning Tree Protocol (IEEE 802.1d)
- Rapid Convergence Spanning Tree Protocol (IEEE 802.1w)
- Multiple bridge domains
- Simultaneous bridging and routing
- Class of Service (IEEE 802.1p)
- Per VLAN Spanning Tree Protocol
- Source Routing, MAC filtering and NetBIOS
- Data compression
- X.25 and PPP compression
- IPHC compression
- Van Jacobson and STA LZS compression algorithm upgrading

Warranty

- Standard hardware warranty

Table 3. OmniAccess 5725R ordering information

OA5725R	OA5725R ESR Industrial Router has extended temperature range and high EMI protection; see part number suffix for power cord plug type
OA5725R-4A	OA5725R ESR Industrial Router has extended temperature range and high EMI protection with 4G/LTE for AT&T (LTE AWS and B17 MIMO, fallback to HSPA+/UMTS 850/AWS/1900/2100 MHz and GPRS); see part number suffix for power cord plug type
OA5725R-4V	OA5725R ESR Industrial Router has extended temperature range and high EMI protection with 4G/LTE for Verizon (LTE B13 MIMO, fallback to CDMA 850/1900 MHz and HSPA+/UMTS 850/900/1900/2100 MHz and GPRS); see part number suffix for power cord plug type
OA5725R-4G-xx	OA5725R ESR Industrial Router has extended temperature range and high EMI protection with 4G/LTE for Global (LTE at 800/900/1800/2100/2600 MHz, fallback to HSPA+/UMTS 900/2100 MHz and EDGE/GPRS 900/1800/1900 MHz); see part number suffix for power cord plug type
OA5725R-H+-xx	OA5725R ESR Industrial Router has extended temperature range and high EMI protection with worldwide 3.7G (HSPA+ at 850/900/1900/2100 MHz, fallback to EDGE/GPRS 850/900/1800/1900 MHz); see part number suffix for power cord plug type
SOFTWARE	
OA5725R-VDSL-SL	VDSL2 activation license for OmniAccess 5725R Cellular Router