

Telindus 1061 Router

Features and benefits

- High performance access router
- 1 unit high compact housing
- Modular interface for maximum flexibility to the backbone
- Combines IP routing, bridging and VLAN switching in one device
- Full IP QoS support
- Suitable for enterprises and service providers
- Complete management suite



The Telindus 1061 Router is a high-speed access router for access to a WAN backbone at rates of 10 up to 155 Mbit/s with a very competitive price / performance ratio.

Apart from two fixed 100Base-T LAN interfaces, the Telindus 1061 Router can accept various modular interfaces with support for PPP, Frame-Relay or ATM. These interfaces include

- 6x E1 with support for IMA (Inverse Multiplexing over ATM), multilink PPP or multilink Frame-Relay
- E3 with PPP, Frame-Relay or ATM
- STM1 with ATM
- 10/100 Ethernet interface with built-in 4 port switch

The Telindus 1061 supports IP-routing, bridging and VLAN switching. In addition it has an extended support for IP CoS (Class of Service). This includes traffic policies based on higher layer protocols and IP TOS bits, diffServ priorities and drop precedence, different priority policies and traffic shaping. The Telindus 1061 Router can initiate and terminate VPN (Virtual Private Network) circuits.

The unit comes with an extensive built-in management agent. The unit can be controlled locally by means of a craft terminal or the TMA windows application. Remote management over IP is available with a variety of protocols including TMA, telnet, HTTP and SNMP. With the complementary TMA management suite, a complete network can be managed from a single location.

The Telindus 1061 Router comes in a very compact size (1 unit high) and is rack mountable. It fits in 30 cm deep ETSI racks with all connectors and indicators on the front side. Combined with its low power consumption it is easily stackable.

For a maximum availability of the service, redundant power supplies are available. Each power input may send an alarm in case of failure so that preventive maintenance is possible prior to a system shutdown.

Internet service providers (ISPs) may use the Telindus 1061 Router in their Points of Presence (POP) to concentrate a large number of customers over a high-speed WAN link. For this purpose, the device supports features like Layer 2 Tunneling Protocol (L2TP), PPP over ATM (PPPoA) and PPP over Ethernet (PPPoE) termination, PPP PAP and CHAP authentication protocols and Remote Access Dial-in User Service (RADIUS).

The Telindus 1061 Router is ideal for managed services where each end customer is given their own router, and the service provider manages it for them. Often routers need to be stacked. In such environments space, airflow, and heat/power dissipation is an issue. The compact size and low power consumption make the device perfectly stackable.

With a dual Ethernet interface and an increasing feature set like VLAN switching with QoS, NAT/PAT address translation, policy based routing and traffic and priority policing, the Telindus 1061 Router suits also for enterprises requiring a large WAN bandwidth.

In conclusion, the Telindus 1061 Router is a compact, very cost-effective and performing router both for enterprises and service providers. It complements the Telindus 1030 Router Series of products.

Technical specifications

Fixed Ethernet interfaces

Number: 2

Connector: RJ45

Encapsulations: IEEE 802.3 (10Mbps Ethernet), IEEE 802.3u (100Mbps Ethernet)

Speed: 10/100Mbps auto-sense

Modular uplink interfaces

Multiple E1

Connector: 6x RJ45

Electrical: G.703, 120 Ohm

Supported layer-2 protocols: Frame-relay, PPP, ATM, multi-link Frame-Relay, multi-link PPP, ATM IMA status LED per port

E3/T3

Connector: BNC or 1.6/5.6

Electrical G.703, 75 Ohm

Speed: 34 Mbps or 45 Mbps

Supported layer-2 protocols: Frame-Relay, PPP, ATM status and test LED

STM1 fibre

UTP

Connector: RJ45

Speed: 155 Mbps

Supported layer-2 protocols: ATM

status and test LED

Optional SFP fibre interface

Versions:

dual fibre 1300 nm, multimode short haul, typ. 2 km

dual fibre 1300nm, single mode medium haul, typ. 50km

single fibre 1300-1500nm, single mode medium haul, typ. 15km

Speed: 155 Mbps

Supported layer-2 protocols: ATM
status and test LED

Ethernet

Connector: RJ45
Encapsulations: IEEE 802.3 (10Mbps Ethernet), IEEE 802.3u (100Mbps Ethernet)
Speed: 10/100Mbps auto-sense
Integrated 4 ports Ethernet switch
1 status LED per port

Local Maintenance interface

Local 9-pin sub-D connector

ATM encapsulation

Applicable for modular uplink
ATM implementation conform ITU-T I.311, I.321, I.361, I.432
ATM forum UNI 3.1/4.0 PVCs
ATM forum LMI 3.1/4.0
OAM F4/F5 loop-back support, Continuity Check (ITU-T I.610)
Supports ATM Forum Traffic Management 4.1 service types CBR, UBR, VBR-rt, VBR-nrt and UBR+
Supports up to 32 ATM PVCs for each DSL interface
DSL encapsulation schemes:

- Multiprotocol encapsulation in AAL5 LLC and VC multiplexed (RFCs 1483, 2684)
- PPPoA LLC and VC multiplexed (RFC 2364)
- PPPoE LLC multiplexed (RFC 2516)

Frame-Relay encapsulation

Applicable for modular uplink
Encapsulation compliant with RFCs 1490, 2427
Support of multiple DLCI's (PVC)
CIR (Committed Information Rate) configurable per DLCI
EIR (Excess Information Rate) configurable per DLCI
Support of Inverse ARP over Frame-Relay for automatic gateway configuration
Support of LMI (revision 1 LMI, ANSI T1.617 and ITU-T)
Multilink Frame Relay (FRF.15)
Frame Relay fragmentation (FRF.12)

PPP encapsulation

Applicable for modular uplink
Encapsulation compliant with RFCs 1661, 1662
IPCP (RFC 1332)
BCP (RFC 2878)
Support of PAP authentication and CHAP authentication with MD5 hashing (RFC 1994)
PPP multilink (RFC 1990) including PPP fragmentation
PPP multiclass (RFC 2686)

IP Routing

IP (RFC 791)
ARP (RFC 826)
Static routing, RIP1 (RFC 1058), RIP2 with MD5 hashing and authentication (RFC 2453), OSPF (RFC 2328)
Router requirements (RFC 1812)
Standard and extended access filtering on all router ports
NAT (Network Address Translation) with dynamic or static IP address conversion and PAT (Port Address Translation) (RFC 3022)
BOOTP/DHCP server, client, relay agent (RFC 2131, RFC 951, RFC 2132)
Numbered/unnumbered WAN Interface
Traffic policies based on access lists and TOS bits

DiffServ priority and drop precedence (RFC 2474, RFC 2475)
Priority policies FIFO, round robin, absolute priority, WFQ, low delay WFQ
Policy based routing
Traffic shaping*
L2TP tunneling (RFC 2661) on WAN and LAN interfaces
L2TP LAC including the use of RADIUS (RFC 2809)
L2TP LNS including PPPoA and PPPoE termination
Support for up to 256 L2TP tunnels
IPSEC security (RFCs 2401-2406, 2407-2409*, 2410, 2411, 2451 and 3193)

Bridging and VLAN switching

Bridging with spanning tree protocol (IEEE 802.1D)
Multiple bridge groups (up to 32)
VLAN interconnect (IEEE 802.1Q)
VLAN priority queuing (IEEE 802.1P)
VLAN switching

Front panel indications

PWR: Power indication for each power inlet
R: Reset condition
LAN: Lan status

Clocking

Slave on STM1, E3, T3 or E1 uplink
Internal

Maintenance and management support

Local console (VT100 command line interface or interactive interface)
TELNET (command line interface or interactive interface) (RFC 854)
TMA (Telindus Maintenance Application)
HTTP web interface (RFC 2616)
PING (RFC 792)
SNMP MIB2 (RFC 1213), private MIB
Syslog client (RFC 3164)
SNTP client (RFC 2030)
RADIUS client (RFC 2865)
DNS client*
FTP and TFTP configuration and firmware flash download (RFC 414, RFC 1350)
2 alarm contact outputs (normally open and closed contacts)
7 alarm input contacts with common return (normally closed contacts)
TMA CLI stand-alone command line console software**
TMA for HP OV management integration in HP Openview**
TMA Inventory Management**

Mechanical data

H x W x D: 44 x 440 x 240 mm (desktop)
Weight: 3.5 kg

Processor and memory

Processor: Motorola 8280
Processor speed: 450 MHz
DRAM: 128MByte
Flash: 16MByte

Power requirements

DC: -36 up to -72V
AC: 85 – 264V, 47 – 63 Hz
Power consumption: max. 15 W

Environmental conditions

Storage: ETS 300019-1-1 class 1.1
 Transportation: ETS 300019-1-2 class 2.3
 Stationary use: ETS 300019-1-3 class 3.2
 ETSI racks ETS 300019-2/-3/-4
 IEC 60529 protection IP30
 Temperature controlled fan

Available accessories

Rack mount kit

Sales codes

Code	Product	Description
	TELINDUS 1061 ROUTER BU AC/48VDC	Router with 2 100BASE-T interfaces and one modular interface slot, redundant 48VDC and 230VAC
181308	TIM 4P 100BASE TX	Telindus Interface Module 4 ports 10/100 Ethernet interface with built-in Ethernet switch
181309	TIM STM1 BU	Telindus Interface Module STM1 with UTP interface and 2 free slots for fibre interfaces. (possible redundancy). Basic unit, fibre modules not included.
188295	SFP13 DUAL FIBRE MM-SH	Small Form Pluggable dual fibre, Multi-Mode, 1310nm, Short-Haul. Suitable for TIM STM1 BU code 181309
188296	SFP13 DUAL FIBRE SM-MH	Small Form Pluggable dual fibre, Single-Mode, 1310nm, Medium-Haul. Suitable for TIM STM1 BU code 181309
188297	SFP13-15 SINGLE FIBRE SM-MH	Small Form Pluggable single fibre, Single-Mode, Tx 1310nm - Rx 1550nm, Medium-Haul. Suitable for TIM STM1 BU code 181309
188298	SFP15-13 SINGLE FIBRE SM-MH	Small Form Pluggable single fibre, Single-Mode, Tx 1550nm - Rx 1310nm, Medium-Haul. Suitable for TIM STM1 BU code 181309
181310	TIM E3/T3 BNC	Telindus Interface Module E3/T3 with BNC connectors
181312	TIM 6E1 IMA	Telindus Interface Module with 6 E1 interfaces RJ45 connectors supporting ATM IMA
183021	TELINDUS RACK MOUNT KIT	Rack mount kit for 19" and ETSI racks

Notes:

- Information in this document is subject to change without notice. Telindus assumes no responsibility for errors that appear in this document.
- The products and features listed in this document are available in Q2 2004. Some features are marked with a *. Those are possibly not yet supported in the software release in Q2 2004, but planned for 2004. Upgrades can be downloaded from the Telindus website.
- Features marked with a ** are optional items.