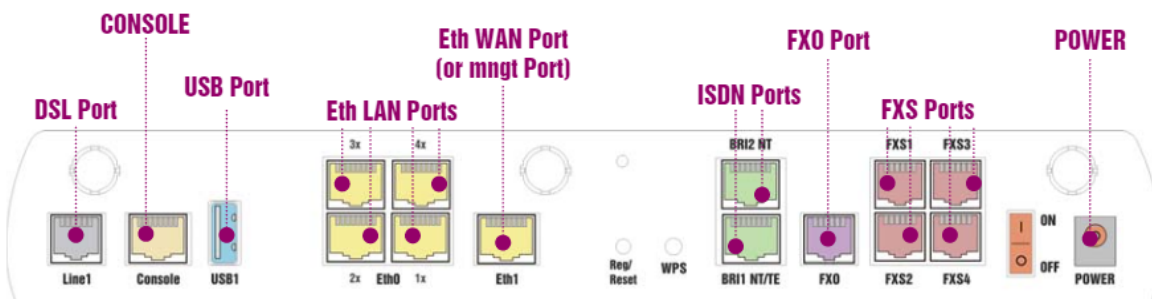# TT-AVDSL-4PW

Designed for Cloud Connectivity

Ultra fast access to network resources and applications with ADSL/VDSL and fiber internet connectivity, Gb Ethernet LAN ports and fully-fledged QoS

Next generation Voice and Data with IPv6

IPv6 support for high-quality voice and high-speed data services over the next generation IP networks

Flexible configuration and deployment

Total deployment flexibility, with A/VDSL and Fiber interfaces. FTTC/B/S with VDSL2 Vectoring support!

All-in-one Business Solution

The Teletechno CO... , TT-AVDSL-4PW Integrated Access Device (IAD) offers the richest entry level interface selection for SME voice and data services, with four analog, two ISDN and a four ports Gb Ethernet switch.

Up to four concurrent high quality voice calls, Fax/Modem support and secure WiFi make TT-AVDSL-4PW the perfect choice for A/VDSL connectivity over copper (with full vectoring support) and fiber. USB 2.0 port provides printer and storage server capabilities.

Fully featured SIP IAD

Entirely based on SIP, the Teletechno CO... ,TT-AVDSL-4PW offers a full set of IP telephony services inside the IAD. Teletechno CO... , TT-AVDSL-4PW supports four analog and standard SIP phones and clients.

Fast Configuration and Deployment

Teletechno CO ... , TT-AVDSL-4PW can be configured and managed locally and remotely, giving ITs, network administrators and service providers a fast and cost-effective way to deploy network services to branch offices and tele-workers.

LED Indicators
- Power
- Line/ Internet
- ISDN (1-2)
- FXS (1-4)
- ETH0 (1-4), ETH1
- Wi-Fi
- USB

Physical Interfaces
- 4-port FXS with RJ-11 connectors
- 1-port FXO with RJ-11 connector[3]
- 2-port ISDN-BRI with RJ-45 connectors
- 4-port 10/100/1000bT Ethernet switch with RJ-45 connectors (Eth0)
- 1-port 10/100/1000bT Ethernet with RJ-45 connectors (Eth1)
- 1-port console with RJ-45 connector
- 1-port A/VDSL with RJ-11 connectors
- 1-host USB
- WPS button
- RESET button
- SIM holder[3]

ADSL2/2+, VDSL2 Network Interface
- ADSL
  - ANSI T1.413 Issue 2,
  - ITU-T G.992.1 Annex A, B (G.dmt),
  - ITU-T G.992.2 Annex A, B (G.lite)
  - Broadband Forum TR 067i2 (conformity and interoperability)
  - Bonding support
- ADSL2 / ADSL2+
  - ITU-T G.992.3, ITU-T G.992.4 Annex A, B, L, M, (G.dmt.bis)
  - ITU-T G.992.5 Annex A, B, L, M
  - Broadband Forum TR-100 (interoperability)
  - Broadband Forum TR-105 (conformity)
  - Bonding support
- VDSL2
  - ITU-T G.993.2, profiles: 8a, 8b, 8c, 8d, 12a, 12b, 17a, 30a
  - Broadband Forum TR-114 (interoperability)ITU-T G.993.5 – Full Vectoring Support

3G/LTE Network Interface
- Bands
  - LTE (FDD) B1/B2/B3/B5/B7/B8/B20
  - DC-HSPA+/HSPA+/HSPA/UMTS dual-band B1/B2/B5/B8
  - EDGE/ GPRS/ GSM quad-band 850/900/1800/1900 MHz

- Data Transfer Rate
  - DC-HSPA+ :Downlink:42 Mbps, Uplink: 5.76 Mbps
  - LTE FDD: Downlink:100 Mbps, Uplink: 50 Mbps @Bandwidth 20M (CAT3)

WiFi Interface
- IEEE 802.11b/g/n
- 2X2 MIMO Radio Operation 2,4 GHz
- IEEE 802.11ac / 3X3 MIMO (factory option)
- Automatic Rate Selection
- Configurable Transmit Power
- WEP encryption (64/128-bit), WPA1 and WPA2
- WPS
- IEEE 802.1x authentication
- MAC filtering
- Multi SSID

IPv6 features
- ICMPv6
- DHCPv6
- IPv6CP (IPv6 over PPP)
- IPv6 over IPv4
  - 6to4 IPV6 tunneling
  - 6rd Rapid Deployment
- IPv4 over IPv6
  - DS-lite tunneling

Voice Interfaces
- FXS
  - Compliant to Q.552 requirements
  - Port impedance: real 600Ω or complex Euro values
  - Low distortion ringing voltages
  - Diagnostic features
- ISDN-BRI
  - 1-port NT + 1-port NT/TE
  - Fully compliant to L1 standards (ETSI ETS 300 012)
  - PP and PMP configuration

Voice Processing
- Voice Codes
  - ITU-T G.711 (A-law, μ-law)
  - ITU-T G.729a (Factory Setup Option)
  - ITU-T G.729b
  - Transparent pass-through
- ITU-T G.165/G.168 echo cancellation
- Voice Activity Detection and Comfort Noise Generation
- RTP/RTCP (RFC1889)

- Up to 4 G.729 voice calls (with transcoding capabilities)

Signalling
- Euro ISDN EDSS-1 / ETSI BRI/NET3
- ETS 300 125 (ITU-T Q.921)
- ETS 300 102-1 (ITU-T Q.931)
- Q-SIG (PSS-1)
- SIP 2.0 according to RFC 3261 (TCP or UDP transport)
- En-block and Overlap sending
- ISDN speech, audio and data (Fax Gr 4, UDI 64, RDI 64)
- DTMF detection and carrying (RFC2833), DTMF info
- Local Generation of
  - Dial tone
  - Ring back tone (180 Ringing reply)
  - Call Waiting tone- Busy tone
  - Fast Busy tone

Fax and Modem Support
- T.38 fax relay
- Automatic G.711 Fax and Modem Pass-Through

Supplementary Services[1]
- Locally managed[2] or Softswitch-based
  - Call hold
  - Consultation call
  - Call waiting
  - Call forwarding
  - Caller Identity Presentation (CLIP), DTMF and FSK based
  - Identity restriction
  - Call transfer
  - 3party conference (FXS only)
  - MSN

DDI Bundle
- GNR Management
- Multi-port to one number association and vice versa
- Multi-port to multi-number range association

IP Functions
- IP Routing
  - RIP v1/v1c/ v2, BGP, OSPF
  - Enhanced Network Address and Port
  - Translation (NAPT) engine, with

- multiple ALGs (including SIP, TFTP and H.323)
  - DHCP Server/Client/Relay, DHCP
  - Learning
  - Multicast IGMP v1/v2/v3, PIM-SM,
  - Static
- Routing Filtering Redistribution
- Firewalling
  - Extended Access Lists
  - Stateful Packet Inspection including
  - Denial of Service attacks
- IP Services
  - DNS proxy
  - DDNS client
  - VPN (GRE, IP, PPTP server/client)
  - IPSec with DES, 3DES and AES
  - ICMP, IGMP snooping, Telnet, TFTP
  - Layer 3 QoS according to DiffServ model (RFC2474, RFC2475)
  - Priority based queuing (Absolute Priority, WFQ, RED)
  - Extensive monitoring, tracing and troubleshooting facilities

Hybrid Access

- LTE&VDSL2 bonding ready:
  - Failover / Backup
  - Application Policy
  - Load-Balancing

Ethernet Services

- Self Learning Bridge with up to 1k MAC addresses and automatic ageing
- Full-Duplex IEEE 802.3x
- Half-Duplex back pressure flow control
- Automatic MDI/MDI-X crossover
- Broadcast/Multicast storm protection
- VLANs (802.1Q and 802.1p) port based management
  - Tag/Re-Tag/Untag
  - Trunking (VLAN multiplexing)
  - Priority based queuing

ATM

- Services
  - Up to 8 VCCs
  - Class of Services (CBR, VRB-rt, VBR-nrt, UBR+, UBR)
  - Voice and Data packets over different VCCs (VC bundling)
  - Selective CLP marking
  - F4/F5 OAM cells, AIS and RDI

- ATM: ITU T-I.361, ITU T-I363.5, ITU T-I432, ITU TI610, ITU T-I731
- Access protocols
  - IP over AAL-5, Ethernet over AAL-5 (RFC2684)
  - PPP over AAL-5 (RFC2364)
  - PPP over Ethernet (RFC2516)
  - LLC/SNAP and VC encapsulation
  - Multiprotocol Interconnect over Frame Relay (RFC1490 Bridged, RFC1490 Routed)

Authentication

- PAP/CHAP/MS-CHAPv1 and v2 authentication
- Basic and Digest schemes (RFC2617)

Service Resiliency

- ISDN backup
- VRRP (RFC2338)
- Dial on Demand Routing

Management & Configuration

- Password Protected Access
  - 2 login levels + configurable privilege access right
  - AAA and local authentication
  - TACACS+
- Local Management
  - Console port
  - Extensive CLI
- Remote Management
  - CLI (internal Telnet Server)
  - HTTP (embedded WEB Server)
  - HTTPS (embedded Secure HTTP WEB Server)
  - SNMP Agent (v1, v2c, v3)
  - SSH
  - Syslog
  - Network Performance Monitor
  - Ping MIB
  - TR-069*
- Firmware upgrades: Local and Remote (TFTP & FTP client embedded)

Ethernet OAM functionality

- Link Layer OAM (IEEE 802.3ah OAM)
- Service Layer OAM (IEEE 802.1ag
- Connectivity Fault Management)
- ITU-T Y.1731 Performance Monitoring

Environment

- Operating Temperature:
  -5° ÷ 45°C (23° ÷ 113°F)

- Non-Operating Temperature:
  -40° ÷ 70°C (-40° ÷ 158°F)
- Operating Humidity:
  10 ÷ 93% (noncondensing)

Compliance & Approvals

- Storage:
  ETSI EN 300 019-2-1 T 1.3
- Transportation:
  ETSI EN 300 019-2-2 T 2.3
- Operating Conditions:
  ETSI EN 300 019-2-3 T 3.2
- EMC:
  EN 55022, EN 55024,
  EN 61000-3-2, EN 61000-3-3
- Protection: ITU-T K.21
- Safety: EN 60950-1

Power

- External power supply
- AC input voltage: 100-240 Vac
- AC input frequency: 50/60 Hz
- AC input current: 0.50-0.25 A

Notes

1 Supplementary Services management is not yet fully standardised by international bodies and their implementation could be subject to revisions

2 Depending on the specific service, a common implementation between the IAD and the Softswitch needs to be agreed

3 Factory option (different p/n). Contact your sales representative