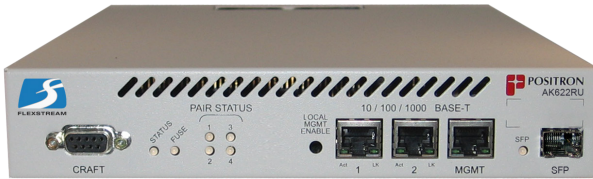


# FlexStream AK622RU/AK624RU Multi-Pair VDSL2/ADSL2+ and Fiber Ethernet Access Device Delivering 100 Mbps to Gigabit Ethernet



AK624RU 8-pair  
AK622RU 4 pair

The Positron Access FlexStream Solutions AK624RU and AK622RU Ethernet Access Devices (EAD) offer Service Providers a cost-effective multi-pair Bonded VDSL2 Ethernet over Copper (EoCU) and Gigabit Optical. This solution is ideal for the delivery of Managed Ethernet Services for business customers, small cell backhaul and other bandwidth demanding applications. As a CE 2.0 compliant demarcation device, the AK624RU and AK622RU facilitate the provisioning, monitoring and control of end-to-end Ethernet services with comprehensive support for SLA reporting.

## Applications

The FlexStream AK62xRU is specifically designed as a carrier grade solution to provide Ethernet services for small cell backhaul, business internet access, MTU/MDU, L2 VPN, streamed video and Gigabit connectivity. It is environmentally hardened to provide the flexibility to service providers to place the units inside a building or in an outside plant cabinet.

## Bonded VDSL2 and ADSL2+ Access

The AK624RU is a standard-based 8 pair (AK622RU is the 4 pair version) VDSL2 and ADSL2+ EAD which provides network operators the means to deliver advanced Ethernet over Bonded Copper services to business customers at minimal cost over their existing copper infrastructure. The AK62xRU is fully standards compliant and interoperates with leading 3rd party DSLAM from Alcatel-Lucent, Calix, Adtran, Huawei and others.

## Gigabit Fiber Ethernet WAN Access

The AK62xRU delivers WAN bandwidth from 100+ Mbps EoCU to Gigabit Ethernet over its optical SFP port. As such, it offers a seamless migration to Gigabit Ethernet while preserving the same advanced features and management capabilities. The optical port of the AK62xRU EAD is configurable in WAN or LAN mode.

## Gigabit Switch/Router Core

At the heart of this platform is an advanced multi-pair bonded network interface supporting VDSL2 and ADSL2+ with advanced high performance Ethernet switch/router core incorporating Layer 2 and Layer 3 Quality of Service and packet forwarding capabilities. All Ethernet ports connected to the Switch/Router core support Gigabit Ethernet speeds.

## Layer-3 Support

The Layer 3 IP features of the AK624RU and AK622RU are ideal to handle Public and Private IP address translation in a flattened L2 network infrastructure to deliver Carrier Ethernet, Internet and IP services with one device.

## CE 2.0 Metro Ethernet Services

The AK62xRU delivers Ethernet services such as Ethernet Private Lines (EPL and EVPL), Ethernet Private LAN services (EP-LAN and EVP-LAN) and Ethernet Access (ACCESS-EPL and ACCESS-EVPL) in compliance with the Metro Ethernet Forum CE 2.0 standard as well as CE 1.0 (MEF.9 and MEF.14) specifications.

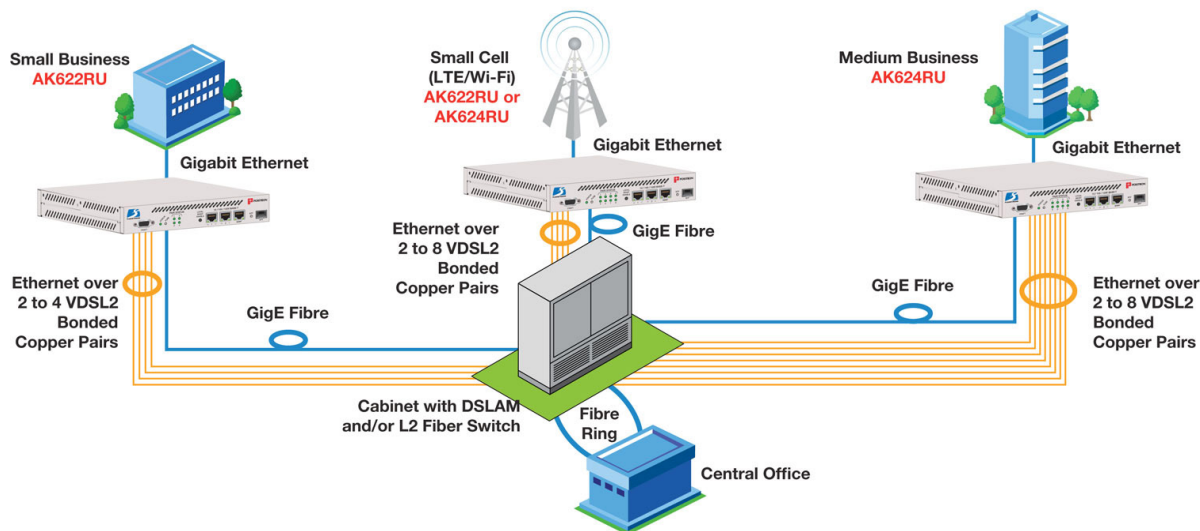
## TWAMP OAM Monitoring

Monitoring quality and availability of every dataflow as part of the carrier Ethernet service is achieved with TWAMP (RFC 6038).

## Accelerated Deployment and Service Provisioning

The AK624RU and AK622RU fit in any managed environment and supports all the common management interfaces such as XML, SNMP, Telnet, SSH, HTTP and HTTPS.





## TECHNICAL SPECIFICATIONS

### Basic Hardware

- 8 or 4x VDSL2, ADSL2+, ADSL2 and RE-ADSL2 pairs
- 1 console port V.24/V.28
- 1 x 100/1000 BaseX Ethernet uplink (SFP port)
- 2 port Gigabit Ethernet VLAN switch
- All Ethernet ports are Gigabit full duplex with auto-sense, automatic cross-over
- Link status and activity LEDs

### Support for ITU-T VDSL2 & ADSL2+ Standards

- ITU-T G.992.1, G.992.2, G.992.3 (ADSL2), G.992.5 (ADSL2+)
- ITU-T G.993.2 VDSL2, G.993.5 (G.vector)
- ITU-T G.996.1 (G.test), G.997.1 (G.ploam)
- ITU-T G.999.1
- ITU-T G.INP
- IEEE 802.3ah EFM bonding

### Outside Plan Pair

- Sealing Current: 50V / 100mA per pair
- T1.417 spectral compliant
- Resiliency: automatic pair failure protection
- Configurable impulse noise protection and latency
- BER:  $10^{-7}$

### Fault Monitoring

- Alarm generation
- Automatic re-introduction of fixed pairs
- SELT and DELT support under control of the DSLAM

### Layer-2 Functionality

- IEEE 802.1d transparent bridging
- IEEE 802.1p QoS on Ethernet level
- IEEE 802.1q VLAN tagging
- IEEE 802.1ad provider bridges or Q-in-Q
- VLAN switching
- Port-based VLANs
- Bandwidth profile

### IP Functionality

- IPv4 NAT/PAT
- DHCP client/server
- Basic and extended IP filtering
- Static routing
- Policy based routing

### Operations and Maintenance (OAM)

- TWAMP: RFC 6038
- CE 2.0, MEF-9 and MEF-14 compliance

### Quality of Service (QoS)

- Traffic classification and policing (inbound/outbound)
- Priority queuing Layer 2 (8 levels, programmable)
- Priority queuing Layer 3 (DiffServ)
- Traffic shaping
- Queuing mechanisms: SP, RR, WFQ

### Performance and Scalability

- Number of concurrent VLANs: 32
- Dynamic Bridging: 8K MAC addresses

### Maintenance and Management Support

- Console port, CLI, Telnet
- HTTP, HTTPS, GUI web interface
- SSH and password protection
- Radius AAA, TACACS+
- FTP/TFTP for configuration and firmware
- SNMPv1, v2, v3, MIB II, proprietary MIB
- Statistics 5min, 15min, 2h, 24h, 7 days
- IP traffic monitoring: roundtrip delay, jitter, loss
- PC-based maintenance tool
- Element management application

### Dimensions

- Metal housing, wall or rack mountable
- W x D x H: 8.5" (225mm) x 11.2" (285mm) x 1.75" (45mm)
- Weight: max 3 lbs (1.4 Kg)

### Power Supply

- Input: -48 Vdc
- Optional AKFSPS: 110-230 Vac – 50/60 Hz
- Power Consumption: 26 W
- Operating Temperature: -40 to +65 °C
- Storage Temperature: -40 to +70 °C
- Relative Humidity: up to 95% non-condensing

### Regulatory Approval

- NEBS Level 3
- UL 60950
- FCC Part 15 Class A
- Tested to GR-487



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