

FlexStream AK525CU Carrier Ethernet Central Office Unit



AK525CU

The AK525CU Compact Central Office Unit enables the point-to-point transport of high-quality, high bandwidth Carrier Ethernet services over bonded copper pairs. The AK525CU provides 50 Mbps of symmetrical bandwidth capable of delivering carrier-grade services to 12 Kft/3.7 Km and beyond. The hardened unit is capable of providing line powering to an AK525RU Compact Remote Unit over the same pairs of copper that carry the data.

AK525 Compact Central Office Unit

The AK525CU works in conjunction with the AK525RU Carrier Ethernet Compact Remote Unit. Environmentally hardened for both inside and outside plant deployment scenario, the compact CO unit facilitates deployment in Central Office locations where space is at a premium. Its compact size enables service providers to overcome the common challenges with respect to space availability, while its robustness make it possible to deploy in existing outside plant cabinets with minimal modifications.

Compliant with Industry Standards

The AK525CU is a standards-based multi-pair DMT product that provides superior performance and reliability in comparison to SHDSL multi-pair copper products on the market. Along with meeting copper loop standards such as ANSI T1.417, which enables the AK525CU Ethernet services to co-exist with other services in a binder, it is compliant with IEEE 802.1 and 802.3 LAN standards and Metro Ethernet Forum MEF9/MEF14.

Metro Ethernet Services

The AK525CU delivers Ethernet services such as Ethernet Private Lines (EPL and EVPL), Ethernet Private LAN services (EP-LAN and EVP-LAN) and Quality of Service including bandwidth profiling in compliance with the Metro Ethernet Forum CE 1.0 (MEF9 and MEF14) specifications.

MIMO on DMT

Utilizing Positron's breakthrough multi-channel signal processing DMT + MIMO techniques embodied in both the hardware and software, the AK525CU can transport more bandwidth over longer distances on fewer pairs than SHDSL or T1 IMA copper bonding technologies.

10X More Bandwidth and Expanded Reach

The AK525CU can transmit ten times more bandwidth than T1 IMA and up to four times more high-quality bandwidth than SHDSL. This huge improvement over other copper bonded technologies is achieved by overcoming traditional copper transmission interferences such as self and alien cross-talk as well as noise. In doing so, the AK525CU enables service providers to offer higher-bandwidth services to up to four times more customers over longer distances without requiring expensive repeaters.

Multi-Level of Reliability

The AK525CU is designed to dynamically compensate for individual copper pair failures. If a copper pair fails, the AK525CU proactively and automatically adjusts the other copper pair margins to compensate for the loss. This feature allows any pair to protect all the pairs in a bonded group. The result is reliability that matches fiber Service Level Agreements (SLAs).

Powering Options

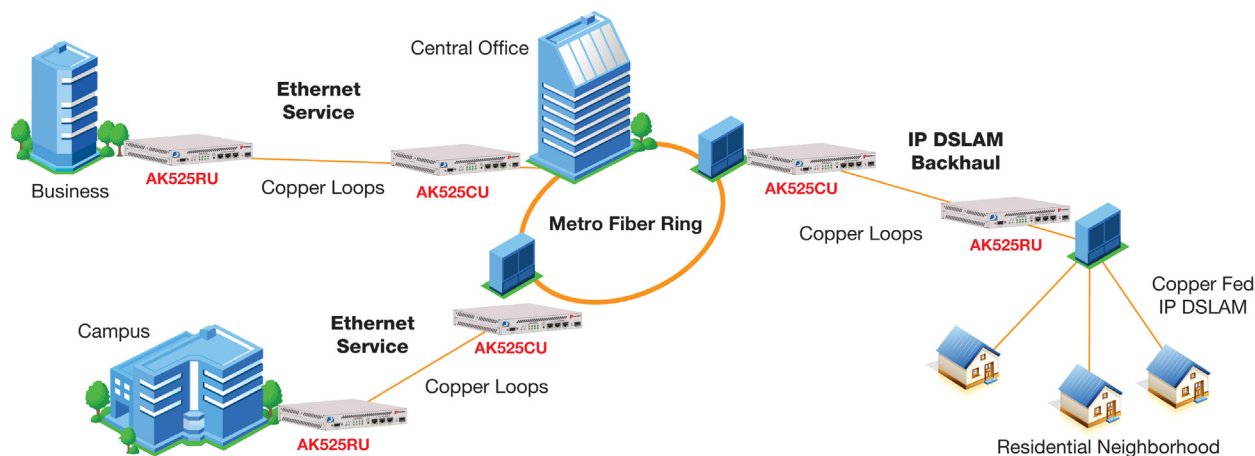
The AK525CU is designed to remotely line power an AK525RU Remote Unit. The power is injected on the same bonded copper pairs that are carrying data. There is no performance impact on the data when the AK525RU is line powered by the AK525CU.

Management Versatility

The AK525CU can be securely managed by Positron's Element Management System (AKEMS), AktinoView (GUI software), a Command Line Interface (CLI) and SNMP. The AK525CU interoperates with industry standard Network Management Systems providing comprehensive performance monitoring for both the transport physical layer and Ethernet.



FLEXSTREAM



TECHNICAL SPECIFICATIONS

System

- Bandwidth (24 AWG / 0.5mm):
 - 50 Mbps Symmetric up to 4 Kft/ 1.2 Km
 - 60 Mbps Asymmetric, 25 Mbps Symmetric at 12 Kft/ 3.7 Km with Full Disturbers
 - 100 Mbps Asymmetric at 7.5 Kft/ 2.25 Km
- System Latency: 3 ms
- Resiliency: Carrier grade automatic pair failure protection
- BER: 10⁻¹²

Ethernet Interfaces

- Number of Ports: 4 per Unit
- Interfaces: 10/100 BaseT (Auto-negotiating, Auto MDIX) RJ45, 100 BaseFX and 1000 BaseX SFP
- Compliance: IEEE 802.3

Outside Plant Pairs

- Technology: MIMO on DMT
- Number of Pairs: Up to 8 pairs
- Sealing Current: Meets G.991.2
- Compliance: T1.417 (Spectral)

Management Port

- 10/100 BaseT RJ45 (Auto-negotiating, Auto MDIX)
- Compliance: IEEE 802.3

Front Panel Indicators

- Status, Fuse
- Outside Plant Pair Status
- Ethernet 100 Base-FX, 1000 Base-X, Act, Link

Ordering Information

Part Number	Catalog Number	Description
AK525CU	CAT-1022-521-06	AK525CU Central Office Unit, Ethernet, 25 Mbps, Rel. 4.3.3
AK525CU	CAT-1022-521-07	AK525CU Central Office Unit, Ethernet, 25 Mbps, Rel. 4.3.4
AK525CU A	CAT-1022-521-26	AK525CU Central Office Unit, Ethernet, 25 Mbps, A, Rel. 4.3.3
AK525CU A	CAT-1022-521-27	AK525CU Central Office Unit, Ethernet, 25 Mbps, A, Rel. 4.3.4
AK525CU P	CAT-1022-523-06	AK525CU Central Office Unit, Ethernet, 25 Mbps, P, Rel. 4.3.3
AK525CU P	CAT-1022-523-07	AK525CU Central Office Unit, Ethernet, 25 Mbps, P, Rel. 4.3.4
AK525CU PA	CAT-1022-523-26	AK525CU Central Office Unit, Ethernet, 25 Mbps, PA, Rel. 4.3.3
AK525CU PA	CAT-1022-523-27	AK525CU Central Office Unit, Ethernet, 25 Mbps, PA, Rel. 4.3.4
AKCOPS	KIT-0006-001-00	Power Supply, Central Office, -48Vdc 320 Watt

Layer 2 Features

- VLAN Tagging: IEEE 802.1q Support
- Stacked VLAN Tagging IEEE 802.1ad (IEEE 802.1QinQ)
- Support up to 2036 byte Maximum Transmission Unit (MTUs)
- Priorities: IEEE 802.1p, Port, or DiffServ
- Dynamic Bridging: 8K MAC Addresses
- Metro Ethernet Forum Certified (MEF9, MEF14)

Electrical Specifications

- Power Input: -42 to -56.7 Vdc using AKCOPS
- Max Heat Dissipation: 40 Watts
- Provides 12 Vdc, 12 Watt output

Environmental Specifications

- Operating Temperature: -40 to +65°C
- Storage Temperature: -40 to +70°C
- Relative Humidity: Up to 95%, non-condensing

Mechanical Specifications

- Chassis Dimensions: 1.75" (4.5 cm) High (1RU) x 8.5" (21.6 cm) Wide x 11.2" (28.4 cm) Deep
- Weight: Approximately 3 lbs (1.4 kg)

Network Management

- Command Line Interface (CLI), SNMP
- Positron Element Management System (AKEMS) or AktinoView GUI
- Inband VLAN Management

Regulatory Approval

- NEBS Level 3
- UL60950
- FCC Part 15 Class A
- CE Mark



Doc#: AK525CU-1015