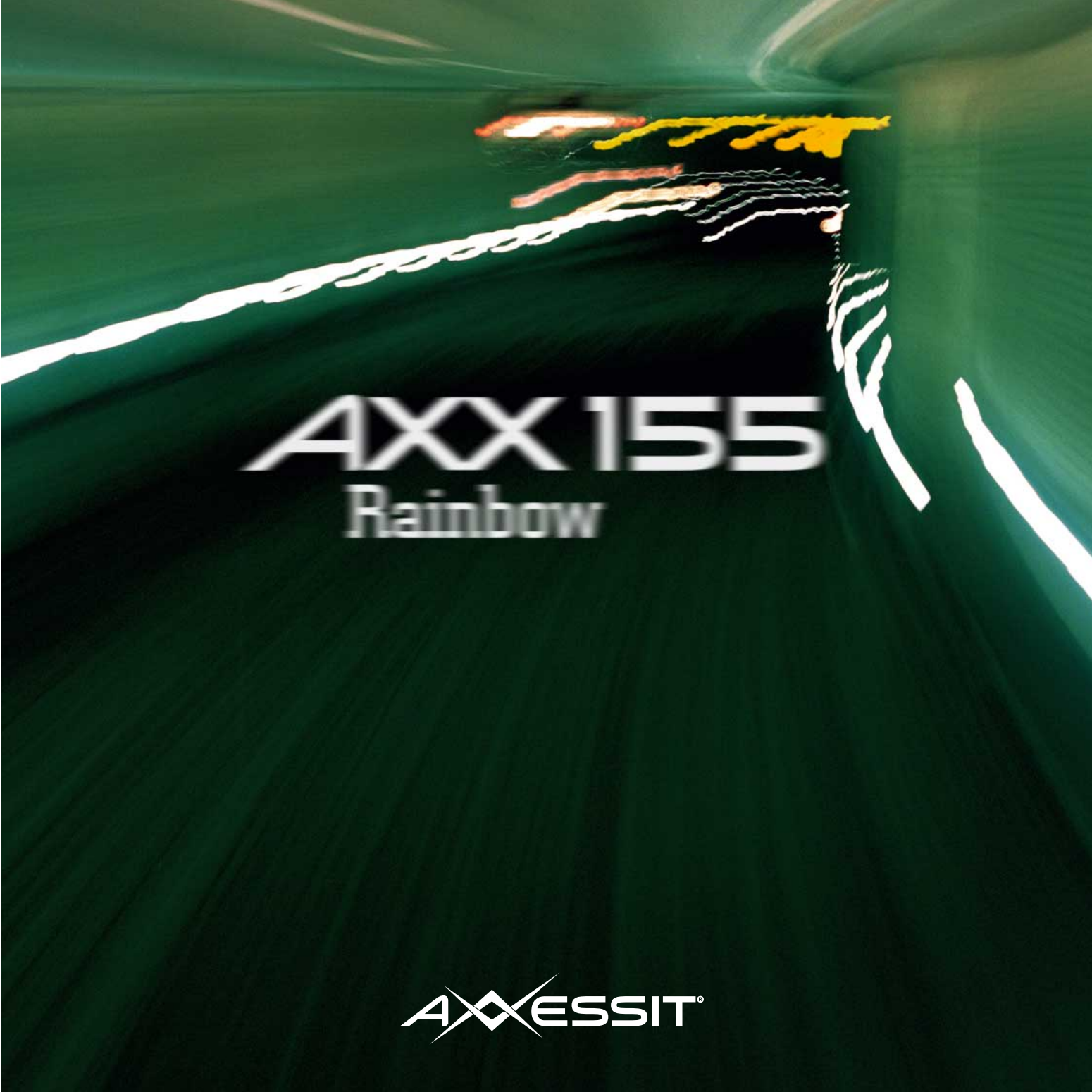

AXX155
Rainbow
AXXESSIT®

Integrated Access Device for Next Generation Access Network

AXXESSIT offers a family of products to build broadband service integrated access network infrastructure for operators serving enterprise customers. AXXESSIT products cover the same services via fiber, radio or copper.

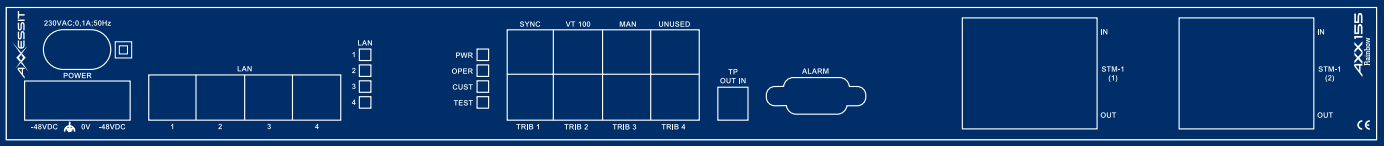
The AXX155 is an Integrated Access Device (IAD) in the AXXESSIT Rainbow family to provide real broadband solutions (2Mbit/s or higher). This product will aid the converging process from circuit-switched to packet-switched services. AXX155 combines IP- and TDM-traffic in a cost effective way, by running IP-along with TDM-channels inside an SDH-frame that can easily be carried across the network. The bandwidth of the IP-channel is configurable up to 100Mbit/s true "wire speed". The AXX155 is designed to facilitate interfacing with IP and TDM equipment from other vendors. All interfaces are based on open standards.

An element manager application called AXXTMN is provided for remote supervision of AXX155 devices. AXX155 also provides a simple VT100 command line interface (CLI) or a powerful craft tool, AXXCRAFT, for local management of the unit.

Software upgrades can be done remotely from a CLI terminal or AXXTMN.

Frontdesign

Frontpanel



Backpanel

Main product features

- Ethernet interfaces with support of Layer 2 bridge/ switch.
- Flexible support of TDM- and IP-traffic, both TDM- and IP-traffic is mapped into SDH VC-12 containers.
- Different IP bandwidth is obtained by using a number of VC-12 containers in an inverse multiplexer scheme.
- STM-1 standard aggregate interface compatible with OH- and VC-termination, performance monitoring and path trace termination.
- STM-1e electrical aggregate interface.
- Fractional STM-1 supported. Full VC-12 granularity.
- Synchronization of the unit can be taken either from the optical interface, 2Mbit/s interface, a dedicated synchronization input or the local oscillator.
- Link protection by duplication of optical- or electrical interface.

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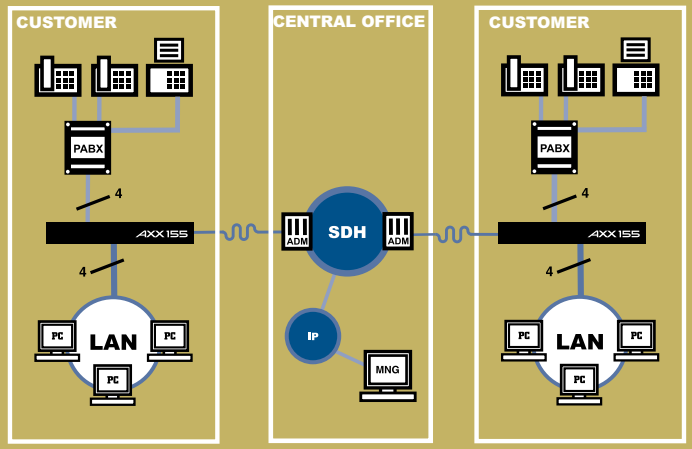
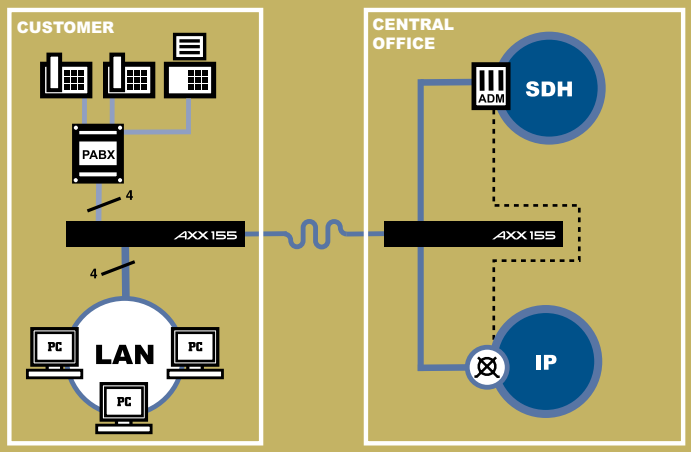
SYSTEM ARCHITECTURE

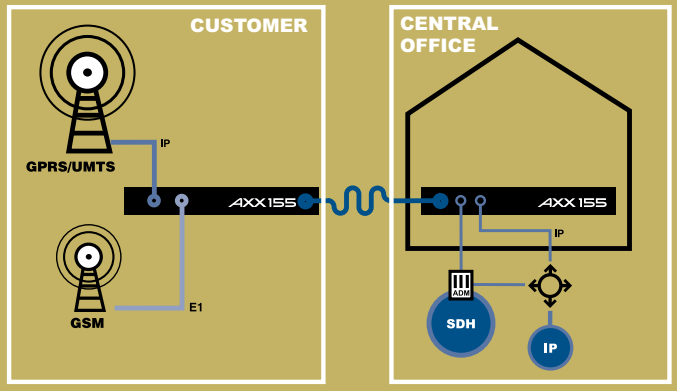
Single-ended configuration.



Double ended configuration.



Mobile network configuration.



Applications

Normally the AXX155 at the customer site is connected to an AXX155 at the operator Point of Presence (PoP). A number of these systems can be connected in a star network and an Ethernet switch grooms the IP-traffic before it is transmitted to the core network. However, the standard STM-1 interface can also be connected directly to an AXXEDGE (or any ADM), if the grooming of the IP-traffic is done elsewhere in the network. Typically applications of the AXX155 are LAN and PABX interconnections, fast Internet or connections of UMTS base stations. The figures above illustrate three typical applications

Interfaces

Aggregate

One or two standard STM-1 interfaces

Standard dual fibre S1.1 or proprietary single fibre interface

One or two STM-1e interfaces

TDM

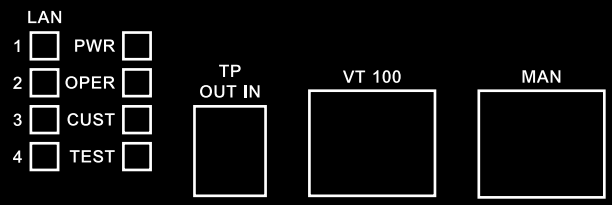
4x2Mbit/s interfaces

G.703 Transparent leased line
ISDN PRA

IP

4x10/100 BaseT Ethernet interfaces

L2 bridging



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Features

LAN interfaces

The Layer2 bridge (switch) is a transparent remote multi-port Ethernet bridge. The bridge consists of four LAN interfaces and one WAN interface. The LAN interfaces supports 10/100 BaseT for UTP cables. Both 10Mbit/s and 100Mbit/s are supported with auto-negotiation. The bridge supports automatic learning/aging and the Spanning Tree algorithm. Standard VLAN is also supported. The filtering rate of the bridge is able to operate at full wire speed, but the forwarding rate is limited by the selected WAN channel speed.

TDM interfaces

The AXX155 has four physical interfaces that support transparent data (G.703) and ISDN PRA. All four interfaces can be configured individually. The interfaces support 120 Ω operation. 75 Ω operation is supported by use of an external balun.

WAN interface

The WAN interface is SDH based and the IP-traffic is mapped into SDH containers together with TDM-traffic for transport to the other end of the system. Different WAN speed can be achieved by a proprietary flexible mapping scheme. The IP-traffic is mapped into one VC-12 container or a number of VC-12 containers. The AXX155 supports several different optical interfaces, a standard dual fiber interface (S-1.1) for single mode fiber and multi mode fiber, a long haul fiber interface and a proprietary single-fiber interface. The reach of the S-1.1 interfaces can be up to 25km depending on fiber quality (12dB optical budget). Two aggregate interfaces can be used for protection. Protection scheme is MSP 1+1.

Management

The AXX155 is equipped with an SNMP agent that supervises both the LAN- and TDM-ports. The SNMP agent supports a number of standard MIBs and an AXX155 specific MIB. An element manager application called AXXTMN is provided for remote supervision of AXX155 devices. AXX155 also provides a simple VT100 command line interface (CLI) and a powerful craft tool, AXXCRAFT, for local management of the unit. In addition, the AXXEMEDIATOR can be launched to provide northbound integration to other OSS applications.

TECHNICAL SPECIFICATIONS

Electrical interfaces	
2 Mbit/s	G.703 and ISDN PRA
-Bitrate	2048kbit/s ± 50ppm
-Line code	HDB3
-Impedance	120Ω balanced, 75Ω by external balun
-Input jitter	Acc. to ITU-T G.823
-Output jitter	Acc. to ITU-T G.783
-Connector	RJ45
Ethernet/LAN	10/100 BaseT acc. to IEEE 802.3
-Connector	RJ45
Optical interface	
Source type	Laser diode
Wavelength	1270-1335nm
Modulation	155 520kbit/s
Launched power (min.)	-16dBm (single fiber)
	-12dBm (short haul)
	0dBm (long haul)
Min. overload	0dBm (all variants)
Sensitivity	-26dBm (single fiber)
	-30dBm (short haul)
	-30dBm (long haul)
Attenuation range	0 - 10dB (single fiber)
	0 - 17dB (short haul)
	0 - 29dB (long haul)
Dispersion	280ps/nm
Connector	FC/PC, SC, LC or E2000
Power	
DC	-36VDC to -72VDC
AC	230VAC - 50Hz
Dissipation	< 20W
EMC/safety/Temperature	
EMC	EN 55022 ClassB and EN 50082-2
Safety	EN 60950 and EN 60825
Operating temp.	-5oC to + 45oC acc. to
	ETS 300 019-1-3, class 3.2
Mechanics	
Dimensions (HxWxD)	43x430x240mm
Weight	< 4kg
MTBF	
MTBF	> 30 years

Lowe & Partners Norway Foto: Pål Laukli

AXXESSIT has created a unique culture that enables us to be the fastest and most innovative vendor of broadband access network solutions. Our leading position is made possible by mutual respect and a common awareness of where we are heading and how to get there. Total involvement in the chain of production also makes us different from other vendors. With more than 25 years of experience within data- and telecommunications, we provide our customers with high quality and cost effective products.

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Vno 69001-0205