



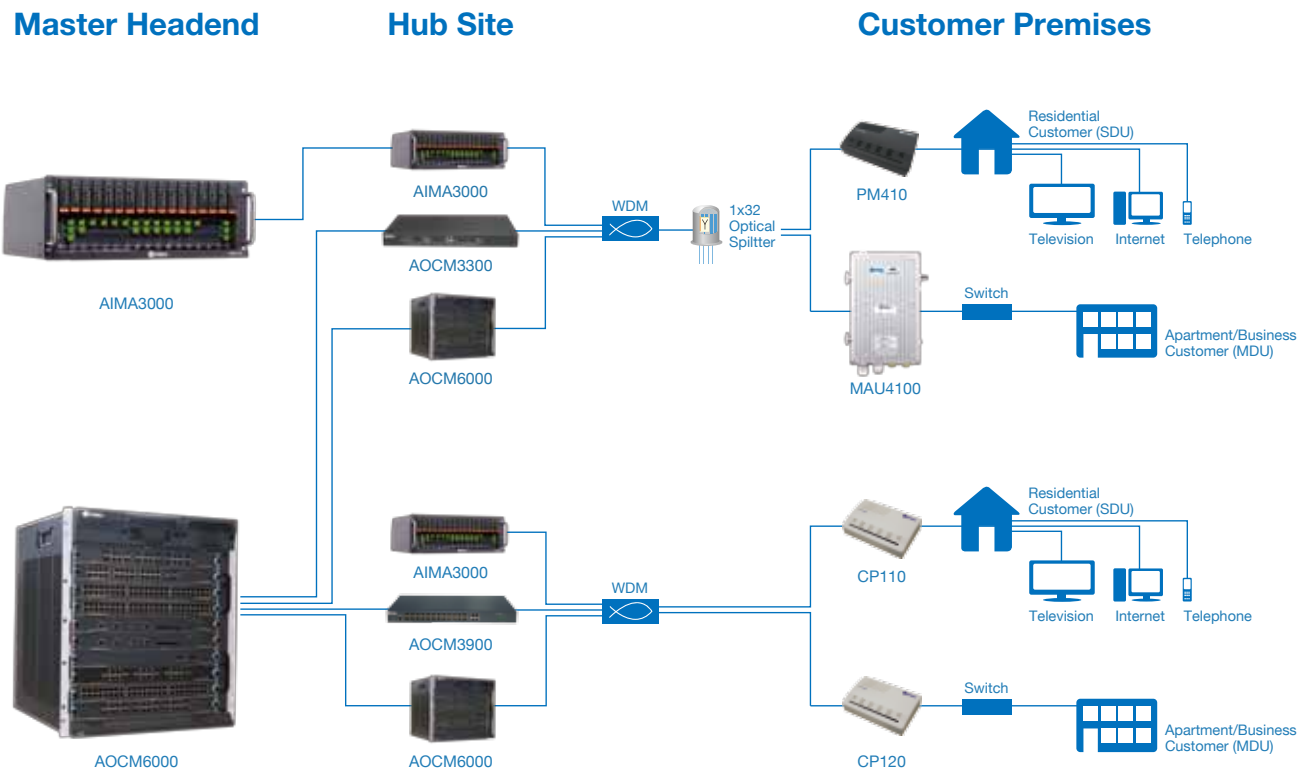
WE LIGHT UP YOUR FIBER

**End-to-End Solutions for
Triple-Play FTTx Networks**



PBN offers Solutions to match your current and future Needs

PBN FTTx products and services offer scalable solutions for startup providers as well as tier-1 operators. Operators are challenged with ever growing bandwidth demand and increasing price pressures. PBN's PON based Point-to-Multipoint architecture and dedicated Point-to-Point (P2P) optical networks allow operators to be prepared for the future. PBN even offers the ability to combine these two approaches, in a cost effective way, into one headend and software system. Utilizing passive network architectures, both solutions eliminate active components in the distribution network. The passive architecture not only increases operation efficiency, but also makes many powered hubs redundant saving significant infrastructure and operational cost.





Triple-Play out of the Box

No matter if you deploy in a green-field or if you migrate an existing HFC/copper network to all-fiber, PBN provides solutions for voice, video and data services in your environment. All solutions are offered with optional CATV overlay, a distinctive functionality of PBN. These systems feature pre-integration of PBN headend equipment, PON/P2P transmission equipment and the entire range of CPE's. All aspects of the network are controlled by PBN's NMS3 provisioning and management software suite. Especially for operators with existing HFC infrastructure, CATV overlay is an attractive and cost-efficient way to offer a full-blown SDTV/HDTV spectrum to its fiber-connected customers.

Comprehensive, Scalable Product Portfolio

PBN's AOCM switch series enables operators to scale with customer demand while keeping the initial investment under control. With a large variety of different options in the portfolio, the operator can start with low up-front investment and later grow to a carrier-grade fully redundant system. This results in improved ROI on the investment as well as future-proof spending into CAPEX-intensive hardware.

Product Portfolio Overview

Category	P2P Active Ethernet	P2MP EPON
Central Switching / OLT	<p>AOCM6000</p> <ul style="list-style-type: none"> • 3 Chassis sizes • Choice of 3 processor and switch-control cards • Full redundancy (power, control cards, backplane) • ActiveEthernet P2P (100/1000Mb/s) & P2MP (GEAPON & 10GEAPON) linecards • Complete set of routing features allows use as backbone termination device 	
Aggregation Switch / OLT (1-RU)	<p>AOCM3400&3900</p>  <ul style="list-style-type: none"> • 24/48-port 100/1000Mbit SFP based 1RU switch series • Stackable with redundant 1/10Gbps uplink options • Strong L2-L7 filter capabilities to protect network from access side attacks • Multicast, IPv6 supported 	<p>AOCM3300</p>  <ul style="list-style-type: none"> • 4-port GEAPON OLT (802.3ah) • 6GigE ports • Supports up to 256 ONUs in 1:64 split deployment • Multicast, IPv6 supported
CPE / ONU	<p>CP100</p>  <ul style="list-style-type: none"> • 100/1000Mbps Triple-Play ActiveEthernet CPE • Home Router & Wireless Option available (NAT, WiFi 802.3b/g/n) • Remotely controlled, AGC-equipped CATV-receiver • Fiber tray for desktop or wall-mount installation included 	<p>PM410</p>  <ul style="list-style-type: none"> • Triple-Play Fiber Access Gateway for 802.3ah EPON Networks • Remotely controlled, AGC-equipped CATV-receiver • 2x ATA VoIP option available • Fiber tray for desktop or wall-mount installation included
CATV Overlay	<p>AIMA3000</p> <ul style="list-style-type: none"> • 1GHz High-density optical headend platform • 16+1 Slot, 4RU HFC-platform • Up to 64 return receivers in one chassis with optional link redundancy • Up to 32 transmitters in one chassis with optional link redundancy • Integrated management server for easy installation, configuration and management • Low power-consumption • Hot-Swappable modules 	
Passive Optical Distribution	<p>Full range of PBN-certified passives for use in the headend or field</p> <ul style="list-style-type: none"> • 1RU or AIMA3000 based • Full range of balanced splitters from 1:2 till 1:64 • Combination of splitters into single 1RU (e.g. 12x 1:2) • ActiveEthernet CWDM-Modules for CATV-Overlay insertion • PON CWDM-Modules for CATV-Overlay insertion • Special versions available for combined use of RFoG and xPON 	



ActiveEthernet (P2P) vs. PON (P2MP)

PBN is a strong believer that technology must support an operators' business case and strategy, and not the other way around. Therefore, PBN offers technologies which not just fit your technical infrastructure, but most importantly, your business case.

Criteria	P2P Architecture	P2MP Architecture
Investment (Capital)	Pay as you grow (subscribers)	Higher up-front investment (homes-passed)
Initial fiber investment	Dedicated fiber(s) per customer	PON-network with 16/32 or 64 split
Bandwidth Cost (3-play)	US\$ 3-5 per Mbit	US\$ 0,50 – 2 per Mbit
Headend space required	32 subscribers per 1RU	683 subscribers per 1RU
Management	Simple management due to dedicated infrastructure per subscriber	Shared infrastructure with complex QoS algorithms and provisioning
Reliability	Dedicated Lines, few single point of failures	Shared Network
Compatibility / Standards	Easy mix of CPE/switch technology	Even though standards-based, strong dependency between OLT & ONU chipset
OpenAccess	Yes, simple & clean	Yes, more complicated
Services Support	Triple-Play	Triple-Play
Security Features	Comprehensive set of features available to protect, secure and isolate traffic	Comprehensive set of features available to protect, secure and isolate traffic

About PBN

PBN is an experienced global supplier of optical broadband products and technology solutions for HFC, RFoG, FTTx and EMS/OSS applications. We enable profitable and scalable transitions to IP Networks, nowadays required by a consumer-empowered world. PBN is well known globally for its innovation and expertise, offering advanced fiber optic products and solutions for applications demanding high bandwidth for transporting video, VoIP and high-speed data. Today our products are being installed to deliver comprehensive broadband access solutions to over 30 million subscribers, served by hundreds of headend facilities worldwide.

The PBN Benefit

- End-to-End FTTx Solutions for centralized and decentralized deployments
- Supports infrastructure serving residential and commercial customers
- Operational experience delivered (planning, deployment, support)
- Pre-integrated hardware and software packages are designed for rapid turn-up
- High-quality products with competitive pricing to fit every business case
- Easy management due to sophisticated NMS3-software solutions which ensures stability and low OPEX

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