Highest Density in the Industry
AIMA HD

With the ever increasing demand for higher bandwidth in today's networks, traditionally deployed optical nodes are needing to undergo node segmentation, or physical splits to provide less subscribers per segment, delivering higher bandwidth per subscriber. This places an upward pressure on rack design density within the headend. Today, PBN announces its next generation transport platform - AIMA HD, with the Highest Density modules specifically designed to address these challenges.

Existing HFC Network Architecture Needs Room to Grow

Traditional HFC network architecture calls for the use of separate platforms to perform separate functions - consuming excessive rack space in the headend. This design does not lend itself to scaling towards a segmented node deployment, or physically splitting nodes. Operators who have narrowcast combine requirements, broadcast signal insertion, and/or who use DWDM optics to re-use existing fiber infrastructure, have a need to keep the racks as tightly constrained as possible.

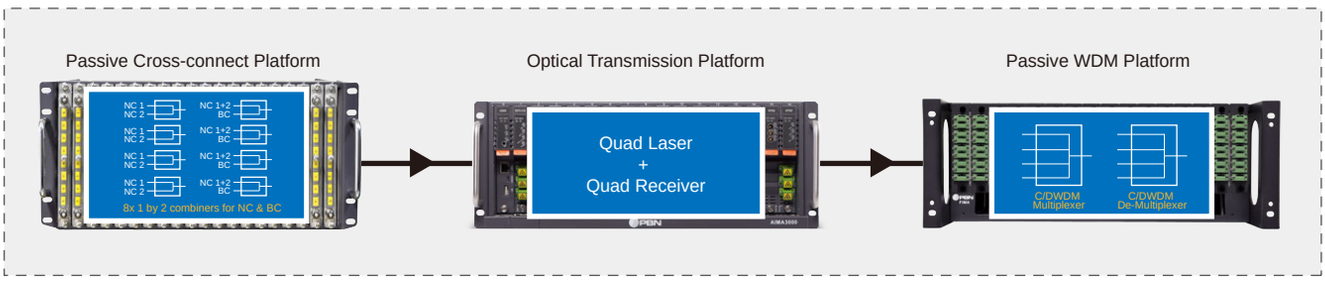

Figure 1 - Traditional HFC Network Architecture

This additional rack space is being consumed by what is effectively passive modules, and an inordinate amount of coaxial and optical cabling. Cabling which adds network rack complexity, build and maintenance cost, and additional points of failure.

Upgraded to MCX Connectors for Improved Density

PBN has developed the High Density application suite of modules to address these key challenges, drastically increasing the density of the headend rackspace, reducing the OPEX of the network by minimizing cabling – in turn reducing points of failure, and simplifying the overall rack design.

Networks that are not ready to make the jump to DWDM still see significant benefits in a newly designed AIMA HD platform - with our O-Band lasers also incorporating MCX connectors, internal narrowcast combining and broadcast insertion.

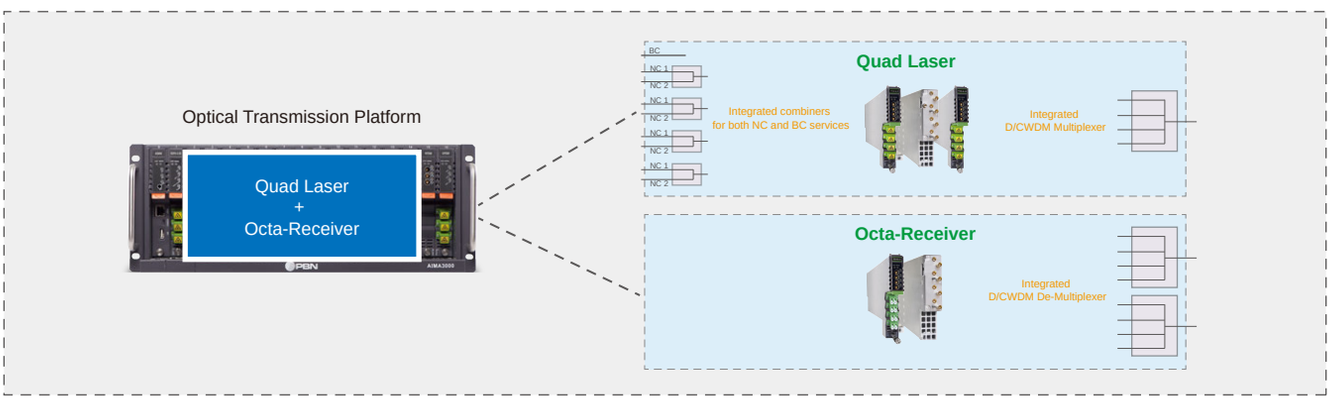

Figure 2 - PBN AIMA HD Architecture

PBN
Pacific Broadband Networks

Enabling Smart Networks

Product Portfolio Overview

Category		Product
Headend	HFC Headend Platform	AIMA HD Chassis • Allows for configurations of up to 64 forward-path laser transmitters or 128 return path receivers • Compatible with all AIMA3000 modules • Lowest power consumption per transmitter/receiver link in the industry • Hot-swappable application modules via management selectable auto-config features • Integrated front and rear fiber access panel for easy fiber management 
		Forward Transmitters • Integrated narrowcast combiners - 2 NC inputs per laser • A single broadcast port for all lasers. One BC per module • An integrated DWDM Multiplexer for all ITU-T DWDM grid/s • 4 CWDM/DWDM transmitters in a single slot application module 
		Return Receivers • An integrated DWDM De-multiplexer for all ITU-T DWDM grid/s • 8 receivers in a single slot application module • Full Band Capture offers automated and 24/7 return path/upstream RF and data performance monitoring and analysis 

Comparison for Deployment Cases - 50% and 33% Rack Space Reduction

With our high density, low power consumption modules, PBN's next generation HFC solution can help MSOs to save more rack space and greatly reduce the cost of deployment, ongoing maintenance, and complexity of the network infrastructure.

MSO A - Traditional reference design consumes a single 45RU rack to deliver:
- 48 service groups (US and DS segments 1:1)
- Narrowcast service splitting and combining
- Broadcast service splitting and insertion
- Sweep and pilot signal injection
- Passive DWDM Multiplexing

PBN's Next Generation HFC solution can **double** the service groups in this reference design to 96 service groups per rack.

MSO B – Traditional reference design consumes 132RU's (3x44RU racks) to deliver:
- 224 service groups
- Narrowcast service splitting and combining
- Broadcast service splitting and insertion
- Sweep and pilot signal injection
- Passive DWDM Multiplexing
- VoD Edge-QAM presence
- Return monitoring presence

PBN's Next Generation HFC solution can **consolidate** this 3 x 44RU design into **2 x 44RU racks.**

About PBN

PBN is an experienced global supplier of optical broadband products and technology solutions for HFC, RFoG, FTTx and EMS/NMS 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 installed to deliver comprehensive broadband access solutions to over 35 million subscribers, served by hundreds of headend facilities worldwide.

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