

## Smart DSL - The NeXa BBA Connect Solution

### Actelis Broadband Amplifier and Network Automation NeXa Smart Cross Connect Upgrading DSL Networks To Minimize Cost And Maximize Operational Efficiency

**Bandwidth demand is straining the ability of DSL networks to meet customer expectations, but there is simply no business case for building fiber to every customer. Extending numerous DSLAMs farther out into the network to enable higher speeds is a potential alternative, but the total cost of site acquisition, installation, and backhauling traffic from all those locations is simply too high. OpEx costs must be minimized if competitive service pricing is to be achieved and profitability targets realized.**

Leveraging DSL assets for high speed broadband requires higher performance DSL, greater automation, and superior operational efficiency. Network Automation and Actelis Networks have partnered to make these objectives a reality with the NeXa BBA Connect utilizing existing copper plant.

The Actelis' VDSL2 and ADSL Broadband Amplifier (BBA) line cards are integrated into Network Automation's NeXa Automatic cross-connect providing a faster and more efficient way to build high speed broadband over DSL by expanding reach and rate for any vendor's DSLAM, while being compatible with vectoring. The result is a more efficient roll out that reduces the number of new DSLAM's required, and the cost of site acquisition, installation, and backhauling from them.

Network Automation's NeXa simplifies and reduces the TCO of BBA's by enabling remote provisioning, testing, and swap-out of BBA and DSLAM ports, plus maintaining customized, accurate inventory.

The VDSL BBAs (VBAs) VDSL BBAs (VBAs) by themselves increase VDSL2 performance by a minimum of 50% and up to 150% depending on the loop. If used in conjunction with vectoring, VBAs very significantly enhance performance for

longer loops and typically ensure performance gains of at least 100% out to 11 kft.

Operators also have the option to enhance ADSL2/2+ services with the ADSL Broadband Amplifier (ABA) cards. This performance improvement is crucial for operators aiming to satisfy FCC 4 x 1 broadband needs for CAF funding.

With the NeXa BBA Connect, operators can dynamically add a BBA to any loop when needed, while maintaining use of established DSLAM ports and line testing procedures for fault isolation. In addition operators will have the ability to remotely test and assign, or change out, DSLAM and BBA ports as needed. The enclosed inventory reporting enables cross-connects and BBA line-to-port assignments to be accurate and up-to-date, all the time.

The NeXa BBA Connect solution is supplied pre-packaged in an approved channel enclosures which is remotely powered and fit into existing right-of-way. This makes the solution easy to install and deploy. This new solution enhances bandwidth and provides more efficient work procedures at a fraction of the cost of adding fiber and new DSLAMs.



**NeXa Broadband Connect  
Large Enclosure.**  
Up to 300 pair distribution  
cable and 100 ABA/VBA ports  
in one integrated enclosure

#### Highlights

- Preserves the installed base of DSL networks
- Increase DSL performance by offering higher speed VDSL2/ADSL services to more customers
- Achieves roll out of network upgrades more quickly and cost effectively
- Simplifies installation and virtual eliminates the need for subsequent truck rolls
- Reduces need for DSLAMs, backhaul requirements to saves CapEx, OpEx
- Enables comprehensive remote monitoring, testing and provisioning to enhance profitability

## The NeXa BBA Connect Solution - Specifications

### NeXa Connect Specifications

NeXa Broadband Connect is available in two Telcordia approved standard enclosure sizes that both fit into Right-of-way.

#### Small Integrated Solution

- Size: 12" x 12" x 47"
- Distribution Pairs: Up to 150
- Actelis' VBA/ABA ports: Up to 50 ports (25 line cards), integrated shelf
- Test Access function: Full line test access to any port including dry lines, utilizing the MTA functionality of the ABA/VBA equipment or through external test equipment.



#### Large Integrated Solution

- Size: 16" x 24" x 48"
- Distribution Pairs: Up to 300
- Actelis' VBA/ABA ports: Up to 100 ports (50 line cards), integrated shelf
- Test Access function: Full line test access to any port including dry lines, utilizing the MTA functionality of the ABA/VBA equipment or through external test equipment.



#### Cross-Connect Management

- WEB based GUI (management system)
- XML over SOAP or CLI for operational activities.
- SNMP v3 for Alarms and Inventory

#### NeXa Physical

20 pair (and multiples thereof) twisted pair open end cabling, spliced into standard 25 pair 3M MS2 or 710 splice modules for easy bridging and fast installation. The NeXa end is a Molex Connector type DIN 41612. RJ-45 standard Ethernet for management control

#### Power

-48VDC power consumption over line feed

- Standby: 5 W
- Typical Operation: 10 W

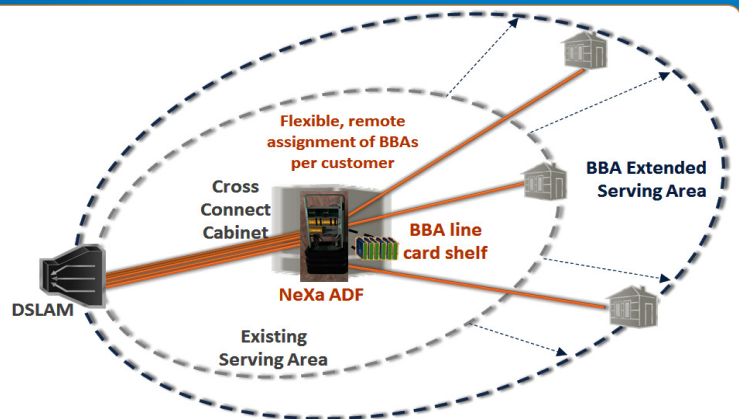
#### Cross-Connect Lifetime and Reliability

- Lifetime: >20 years.
- Switching operations: >1000 per line.
- MTBF (cross-connect module): 340 years

#### Supported Standards

Operational conditions:

- Telcordia and NEBS level 2 compliant
- Tollgrade Interoperability Certification



### BBA Line Card Specification

The Actelis BBA product line includes the VBA - VDSL2 and the ABA - ADSL/2+ Broadband Amplifiers line card. Both fit into Nexa enclosures. Each line card supports 2 subscriber ports.

#### DSLAM & CPE Interoperability

- BBAs are transparent and fully interoperable with standards-based DSLAMs and CPE

#### Bandwidth Plan Supported

- VBA - Band Plan 998, Annex A
- ABA - G.992.1 ADSL Annex A, G.992.3 ADSL2 Annex A and G.992.5 ADSL2+ Annex A.

#### Robust, Reliable Solution

- Does not impact POTS or other analog services
- Environmentally hardened, IP68 for extreme environments
- Very high MTBF
- Hardware metallic bypass- POTS testing with traditional MLT
- Lightning Protection: overvoltage primary & secondary protection

#### Power, Voltage

- POTS Voltage: -48 V nominal
- Power: 100 mW
- Preserves the required off-hook loop current at CPE
- Less than 2 mA POTS leakage current (on hook mode)

#### Temperature & Operating Conditions

- Temperature: -40° C to +65° C or -40° F to +150° F
- Relative Humidity: Up to 95% non-condensing

#### Management

- No active management required
- Remote test access through the NeXa

#### Regulatory Compliance/Certifications/Patents

- CE-EMC
- UL-60950
- FCC part 15 class B and FCC part 68
- GR-1089 and ITU-T K.45 enhanced level - Compliant
- WEEE, ROHS



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