Power Management

Highlights

- Advance green initiatives and reduce the carbon footprint of broadband access equipment, while reducing operational expenses

- Reduce DSLAM power consumption while optimizing DSL performance to improve line stability, increase usable rates, and lower customer churn

- Help ensure regulatory compliance with both legacy equipment and new deployments

- Gain a competitive edge with the latest innovations in green power management

Put the Power of Green in Your Network

Increased energy consumption associated with carrier equipment is fast becoming an important issue for network operators. Many are under pressure both from regulatory bodies and public opinion to lower energy usage and advance green initiatives. The good news is that lowering energy consumption not only reduces the corporate carbon footprint and helps ensure regulatory compliance, but it also can help lower operational expenses, too.

Broadband access equipment is a substantial contributor to network operators' electricity consumption. The European Commission estimates in their latest Code of Conduct on Energy Consumption of Broadband Equipment that the overall power consumption for broadband access equipment in Europe alone will be in the range of 50TWh per year by 2015[1].

Customer premises equipment (CPE), the central office, and remote terminal/street equipment all contribute to increased power consumption (see Figure 1).

Reduce Energy Consumption

The ASSIA® Expresse® Power Management module helps substantially reduce the energy consumption of central office DSL equipment and remote terminals while maintaining or even increasing DSL rate/reach and service stability. Based on industry standards, this optional module helps reduce power usage for both legacy DSL equipment, such as ADSL1, and new deployments.

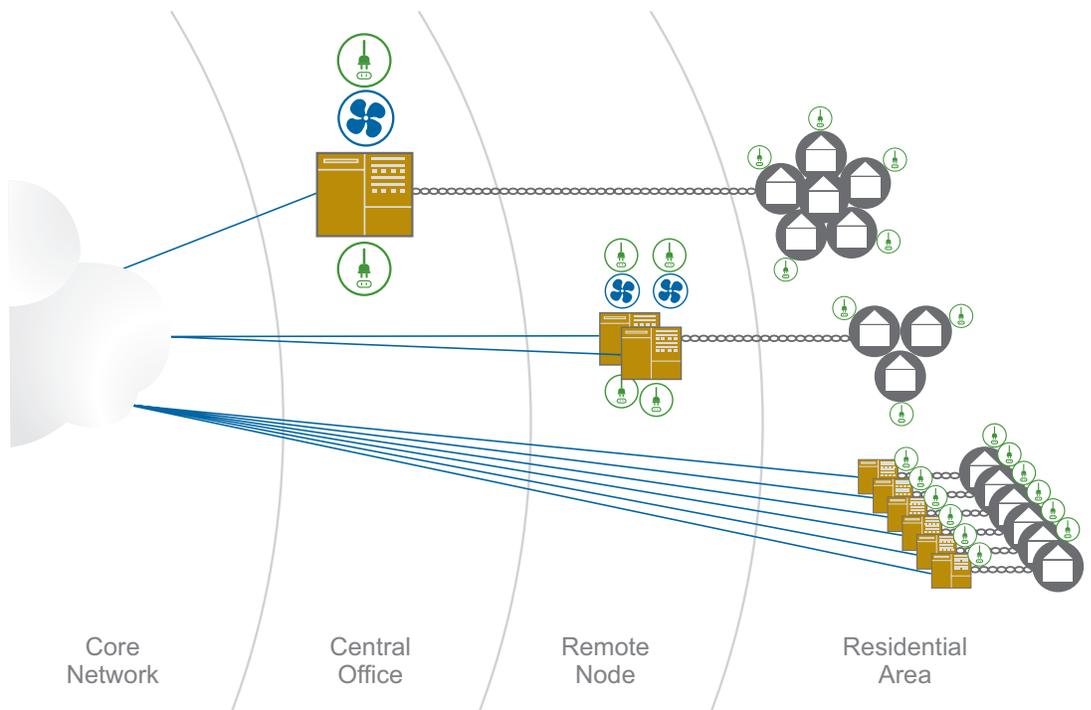ASSIA Power Management software can be configured for the latest DSL equipment designs

FIGURE 1. The Power Hungry DSL Transmission Chain

Core Network   Central Office   Remote Node   Residential Area

and chipsets to help reduce power and carbon footprint while achieving the maximum rate and reach for your customers. Plus, operators can increase the value of equipment that is compliant with emerging ITU and ETSI DSL energy conservation recommendations, while reducing the power consumption in their large base of older DSLAMs and RTs.

DSLAM power consumption is determined by a number of factors, including the transmit power of the DSLs and other configurable parameters selected in the deployment of the network. ASSIA DSL Expresse optimizes DSL performance and rate/reach of DSL service based on the analysis of current and historical performance data for that line.

The ASSIA DSL Expresse Power Management module enhances this functionality by controlling power-related parameters that are defined in DSL standards. The Power Management module reduces DSLAM power consumption while simultaneously enabling DSL Expresse's performance optimization capability to stabilize a line and increase its usable rate.

Take the Lead in the Telecom Green Initiative

ASSIA field test results demonstrate that using ASSIA DSL Expresse and Power Management features can significantly reduce power consumption while maintaining or enhancing line rate and stability. During latest field tests, the power reduction averaged 425mW per ADSL line, with potential savings of 3.5kWh per line per year. Reduction in DSL power consumption also lowers the required electrical energy for ventilation and air conditioning, further adding to the savings.

Electrical energy rates continue to fluctuate dramatically across countries, ranging from US$0.07 to US$0.30 per KWh, at time of print. Assuming an average of US$0.15 per KWh for a 1-million line network, network operators can realize potential savings of up to US$0.5 million per year in their electricity bill.

Not only can efficient power management help generate immediate savings in the network – savings which can be reinvested in updating or replacing older power-hungry DSL equipment – but it also helps improve customer retention and gives a competitive edge over less innovative service providers.

Power Management Module Prerequisites

The ASSIA Power Management module incorporates transmit power management into its re-profiling process to help reduce power consumption and lower power costs. The module requires that the ASSIA DSL Expresse Profile Optimizer and Performance Evaluator are deployed and running. Figure 2 illustrates how the Power Management module is configured as part of the ASSIA DSL Expresse architecture.
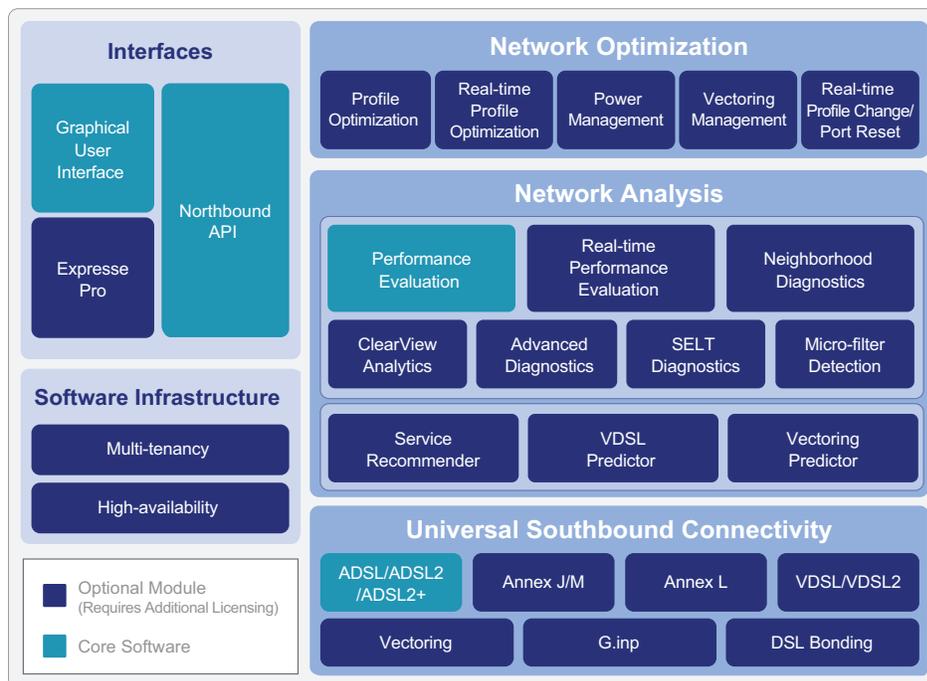
FIGURE 2. ASSIA Expresse Software Architecture with prerequisites for ASSIA Power Management module – PE license + PO license + at least one type of access

[1] Code of Conduct on Energy Consumption of Broadband Equipment, Version 3, 18 November 2008