

What's new & different...

It's often stated that UPS "standby" power supplies are the weakest equipment link in the Cable TV network reliability equation. This is directly related to the fact that UPS power supplies have batteries, and you can't predict how long the power supply will run during a mains power failure unless you know the condition of the batteries. Moreover, once a power outage does occur, it's important to know when the batteries have discharged to a threshold where it's necessary to dispatch personnel with emergency generators to keep the network alive. For this reason, many operators have adopted remote status monitoring systems to help them keep tabs on the condition of their standby supplies.

Status monitoring is not new, and various systems have been available for over 25 years. However, a paradigm shift in status monitoring is now taking place, a shift that makes it much simpler and much less costly to monitor standby supplies. The old monitoring paradigm conjured up images of expensive headend polling controllers, bloated and high-maintenance proprietary monitoring software, and a general perception that the status monitoring system needed more care and attention than the network it was monitoring. The new status monitoring paradigm leverages the ubiquitous DOCSIS infrastructure that virtually every modern cable system has implemented, as well as a series of standards that eliminate most of the complexity and cost of non-standards solutions.

A new breed of status monitoring transponders has recently emerged, based on DOCSIS data communications and network management standards such as SNMP and HMS. These standards make the installation, provisioning, and support of a status monitoring system almost "plug & play".

Phoenix Broadband Technologies engineers have years of direct experience developing status monitoring transponders, using the older proprietary methods as well as the newer DOCSIS methods. We have leveraged that experience to bring Cable operators a new breed of power supply monitoring transponder that allows a low-cost DOCSIS modem to serve as the core of a very robust standby power supply monitoring solution. Our **PowerAgent** and **PowerAgent LC** family of status monitoring transponders are very simple and affordable devices that connect to virtually any type of network power supply and allow it to be comprehensively monitored from a Network Operations Center (NOC) virtually anywhere in the world. This is all made possible by standards such as TCP/IP, DOCSIS, SNMP, and HMS.



PowerAgent and PowerAgent LC...

Unlike competitive solutions that attempt to "re-invent the wheel" by making a DOCSIS-based transponder from the chipset up, Phoenix Broadband's **PowerAgent** family of transponders leverage the availability and low cost of DOCSIS cable modems to deliver the most cost-effective solution possible.

With **PowerAgent**, you purchase only what you need to make a comprehensive power supply monitoring solution...the measuring and monitoring unit itself. All of the data communications with the monitoring center is taken care of by a garden-variety DOCSIS modem installed inside the power supply cabinet with the PowerAgent. The PowerAgent converts the 60/90 VAC output from the supply into a 12VDC source that powers the modem, thus eliminating one of the biggest failure points in a cable modem system...the wall-mounted power unit.

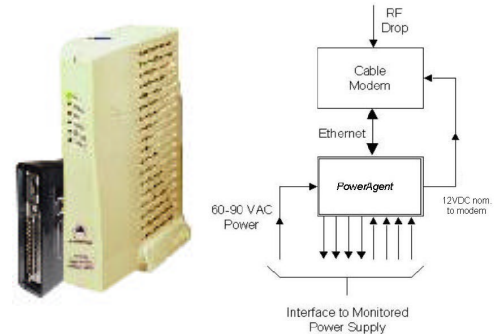
PowerAgent eliminates the high front-end costs traditionally associated with status monitoring because each PowerAgent unit has a built-in web server that allows any browser-equipped PC to view monitoring data directly from the transponder. In addition, each unit contains an e-mail client that can be programmed to alert individuals at their office or via cell-phone text messaging when an alarm occurs. On top of all this, every PowerAgent device contains a complete SNMP agent that supports the SCTE's HMS power supply monitoring MIBS.

Via SNMP, PowerAgent gives NOC personnel the standards interfaces and power that they need, while providing local personnel with direct access to "craft" information via a browser.



Comparisons

The following comparison matrix illustrates the major differences between legacy status monitoring solutions, the newer integrated-DOCSIS transponders that are hitting the market, and Phoenix Broadband's **PowerAgent** family of transponders.



Solution	Front-End Cost	Transponder Cost	Installation Accesories	On-Going Costs	Spectrum Utilization	Web Server	E-mail Sender	SNMP
Legacy RF Transponders	\$25K - \$100K for software. \$10K per headend controller	\$275 to \$400	Wire harness, typically \$40-\$60; Power supply monitoring interface card, typically \$75-\$100	Software maintenance agreements. Typically 15%-20% of purchase price per year	Requires additional forward and return frequencies to be provisioned & groomed	No	No	No
"Integrated DOCSIS" Transponders	None	\$220 to \$375	Wire harness, typically \$40-\$60; Power supply monitoring interface card, typically \$75-\$100	None	Uses existing DOCSIS infrastructure	Yes	???	Yes
PowerAgent by Phoenix Broadband Technologies	None	\$140 to \$160	Wire harness, typically \$25-\$35; Power supply monitoring interface card, typically \$75-\$100	None	Uses existing DOCSIS infrastructure	Yes	Yes	Yes
PowerAgent LC by Phoenix Broadband Technologies	None	\$140 to \$160	Wire harness, typically \$25-\$35; No other accessories required	None	Uses existing DOCSIS infrastructure	Yes	Yes	Yes

A Word About CableLabs DOCSIS Certification...

Many operators' data services management organizations will not allow any device that is not DOCSIS certified to be installed in the network. This is a particular problem for transponder manufacturers, as the certification process is very expensive, and must be repeated every time a product variant is developed. To date, only one of the "Integrated-DOCSIS" transponder manufacturers has secured DOCSIS certification, and only on their first product version.

Phoenix Broadband's PowerAgent approach eliminates the DOCSIS certification issue by using any of the many DOCSIS certified modems that are available. PowerAgent also makes it easy to upgrade as the state of the DOCSIS art evolves.

