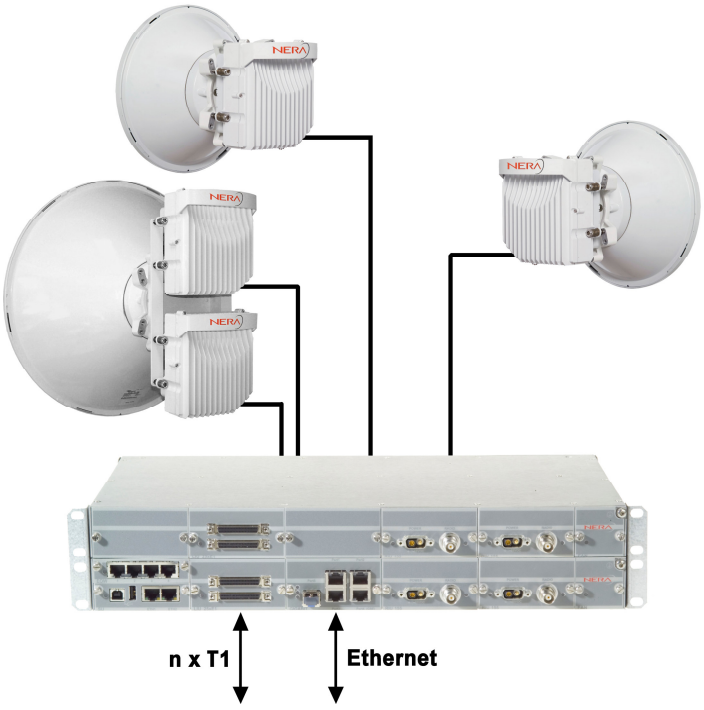
WHITE PAPER

GO GREEN WITH THE EVOLUTION SERIES AND FLATPACK2 HE



Split Mount Configuration

All Indoor Configuration

LOW POWER CONSUMPTION IS A WIN-WIN.

SAVING THE ENVIRONMENT AND
REDUCING NETWORK BACKHAUL OPEX

Introduction

The global telecom industry is a significant and rapidly growing consumer of energy. About 1% of total global energy is used by this industry. This is more than 160 billion kWh and over 118 million tons of CO_2 and equivalent to about 16 million homes or 22 million cars. With the ongoing new deployment rate and capacity expansions needed for broadband, it is expected that the global energy need for this industry will increase by 50% within 5 years.

Poor energy conservation and heavy pollution emissions have led to poor air quality in many countries and a real threat of global warming.

The challenge

Power consumption is now one of the top three network OPerating EXpenses (OPEX) for carriers. Further increased OPEX is foreseen as energy cost goes up both due to CO_2 emission "penalties" and increased capacity demand and country-wide broadband penetration.

Example: (2006 Verizon, Company Data)
Power consumption: 8.9 billion kWh consumed. 7.1 million tons of associated CO_2. ~$900 million associated OPEX (assumes $0.10/kWh)

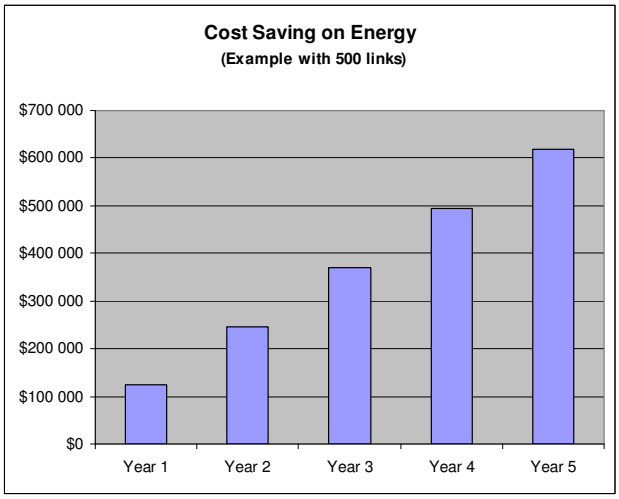
The Solution

There are many power consuming elements in a carrier-company, and all elements need to be optimized to achieve the maximum benefit of new technologies. In this section we will visualize the savings of optimizing the wireless backhaul using state-of-the-art Power- and PtP licensed Microwave- solutions.

Nera's Evolution Series with the patented dynamic biasing of the transmit chain has driven power consumption on the Evolution Series DOWN by 25% compared to competition.

By coupling the Nera Evolution series with an Eltek Valere FlatPack 2 HE product you can further increase the OPEX savings associated with your network. While traditional DC Power Systems can have efficiencies of 75% to 80%, the Eltek Valere HE systems provide efficiencies over 96%, reducing waste electricity and heat substantially.

Typical power consumption for an 11GHz High Power Protected Link carrying a few T1s and 100Mbps Ethernet is about 400W. If the DC Power system is 80% efficient this results in waste of over 100W, which quickly adds up. For a network of 500 links this is equivalent to 440,000 kWh wasted each year. Using Evolution and Flatpack2 HE Power System would save over 800,000 kWh annually, quickly adding up and directly improving your bottom line. In addition, the dramatic reduction in wasted heat simplifies cooling, reduces the size of air conditioning systems, and improves the reliability of your electronics and battery backup. Finally this will also reduce the amount of batteries required on each site and saves the environment with less CO_2 emission.



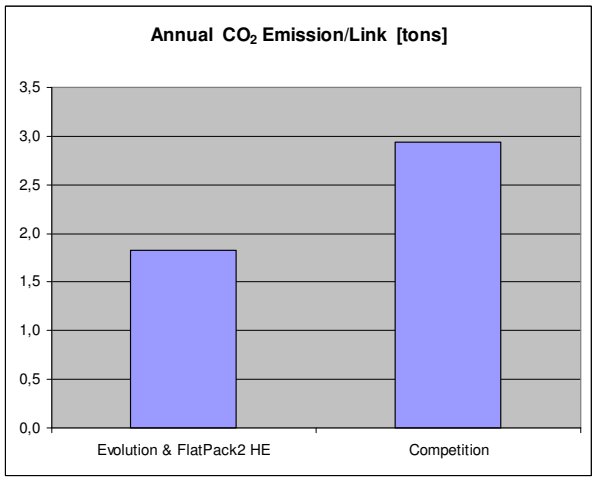
Cost savings - OPEX:

- ✓ Energy saving: 188W*8760h = 1650kWh * $0.15/kWh = $240/Year/Link.
- ✓ Additional energy savings due to a less frequent need for air cooling.
- ✓ Additional savings due to less A/C-systems to maintain.
- ✓ Additional savings due to fewer batteries to maintain.

Cost savings - CAPEX:

Less power and therefore less heat dissipation lead to:

1. Smaller and less costly cabinets for outdoor installations
2. Smaller Air Condition systems
3. Fewer/smaller batteries required



Less CO_2 Emission:

- ✓ 1.5 lb CO_2 / kWh
- ✓ Reduced CO_2 emission / Link / Year: 188W*8760h*1.5lb = 2470 lb = 1.12 ton
- ✓ CO_2-emission fee is expected to increase cost of energy
- ✓ **GO GREEN** with Evolution & Flatpack2 HE!

EVOLUTION SERIES

Software Defined Radio: 5 - 40 GHz
Data-rate: 6 - 622 Mb/s

One wireless pipe for Ethernet and T1 traffic. Flexible and scalable with built in X-connect. GigaBit Ethernet or SONET OC3/OC12 interfaces. A variety of configuration options from single ended terminals to traffic nodes with four wireless directions. Managed by a standard web-browser - Nera's NetMaster or a general SNMP manager. One platform for all needs simplifies logistics and dramatically reduces life cycle cost.

www.neraworld.com

FLATPACK2 HE – 96% efficiency

The Flatpack2 HE power system embodies Eltek Valere's vision to be the product leader within the DC Power industry. The combination of cost-effective design, power density and reliability makes it a product that truly stands out in the global market. The versatility of the Flatpack2 HE rectifier means that it can be used in a wide variety of 48VDC and 24VDC applications across the globe. Stand out in your market by providing network availability beyond your customers' expectations with a superior Flatpack2 HE power system.

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