

PowerOasis Manager



Use remote monitoring, control and measurement to manage and optimise site power, diesel usage and to maximise site availability

It is predicted that 90% of the next 2 billion mobile phone subscribers will come from emerging markets. This huge growth will require more than 1.5 million new base stations, with at least half of those being located in remote areas with no access to a reliable electricity grid. More than 500,000 base stations around the World use diesel generators for power; the dramatic growth in remote base stations is likely to increase this to number over 1,000,000.

With the proliferation of generator powered base stations in remote areas, how does a communications service provider manage all sites in a network to minimize diesel related outages, assure site availability and reduce expensive truck rolls?

PowerOasis Manager is a centralised remote monitoring, control and configuration solution for multiple PowerOasis Controllers deployed within a communications service provider's radio access network. Using either a SMS/GPRS modem or a TCP/IP connection over the backhaul, monitoring data and control messaging is communicated between the PowerOasis Controllers and the PowerOasis Manager. Site availability is maximised through preventive and corrective equipment maintenance combined with metering of diesel usage to avoid fuel related outages. Operations and maintenance costs are minimised due to reduced site visits for maintenance and diesel refuelling.



The PowerOasis Manager Dashboard

Features at a glance

- Fuel level metering to measure diesel consumption and detect theft or leakage
- Monitoring of network power performance against Key Performance Indicators
- Measured power generation and consumption figures
- Equipment health status indications with acknowledgeable alarms
- Remote control and re-configuration of system parameters
- Remote software upgrades
- SMS, GPRS or IP backhaul remote communications
- Status page providing key power values
- Scalable multi-site and multi-user system
- Web-based user interface for ubiquitous access
- Streamlined controller installation, commissioning and operations



Alarm Notifications

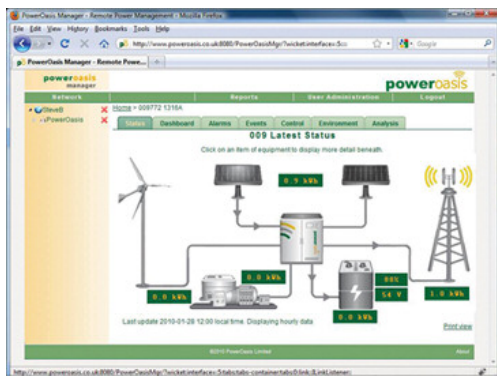
Streamlined operations and maintenance of remote base stations is greatly enhanced through timely notification of equipment failures and when the system operates outside expected ranges. Equipment health status and system operation alarms are presented in the PowerOasis Manager as a set of colour coded indicators with acknowledge and reset functions. Alarms include component failure, door opening, impending low and high battery voltage disconnects. Alarms can also be delivered directly to designated users by SMS or email.

Parameter Monitoring

Parameter visualisation aids preventive maintenance and reduces refuelling visits by tracking power generation and consumption trends, including:

- Power generation by each power source
- Battery state of charge and charging phases
- Power consumption by load
- Diesel consumption
- Battery temperature

Historical information aids power optimisation and can be used in planning power requirements for new site additions.



The PowerOasis Manager Status Screen

Configuration

During installation the PowerOasis Controller is loaded with a database of configuration parameters that governs the operational behaviour of the system. A selection of these parameters can be remotely overridden or reconfigured by authorised personnel. For example, a battery's Low Voltage Disconnect (LVD) protects a battery from repeated deep discharge damage but may need altering during extreme circumstances, such as following tropical storms when sites may become inaccessible. An operator can then choose to sacrifice battery lifetime to preserve network availability.

Key Performance Indicators

The Key Performance Indicators (KPIs) that a mobile network operator uses to establish benchmarks against which it measures radio access network performance can now be extended to network power management. Multiple KPIs are defined as standard, including:

- System energy inputs
- Battery status
- System loads
- Site power availability
- Generator runtime

PowerOasis Manager can be configured on request to incorporate operator specific KPIs.

Browser Interface

To provide 24/7 access to the PowerOasis Manager features and to reduce installation costs, the PowerOasis Manager uses web server technology to deliver the user interface using a web browser. No software installation is required on a user's computer and all software updates are applied in a central location. The server software is installed in a customer's data centre and used by staff in a Network Operations Centre or Operations and Maintenance Centre to provide centralised wireless network power management.

Communications

A number of mechanisms are supported to enable remote communications between the power controllers and the PowerOasis Manager, including SMS, GPRS and backhaul. If the base station equipment supports TCP/IP connections over the backhaul, the PowerOasis Manager can connect directly to the power controller from the Network Operations Centre.

Unified Solution

PowerOasis Manager is an integral component in our wireless network power management solutions, which provide a platform to deliver power related services that eliminate wasted energy, optimise power costs and maximise site availability.



PowerOasis Manager Analysis Screen

