

# Colombian Tower Operator Deploys Kentrox for Tower Management

Tower owners and operators are continually faced with the challenges of managing operating expenses while ensuring the network quality their customers (i.e. service providers) expect and demand. The Colombian wireless communications market is growing rapidly and is expected to exceed 54 million mobile subscriber connections by 2015<sup>1</sup>. Combining this with the continued expansion of LTE services creates interesting challenges for tower operators, especially when more than one service provider (customer) is co-located at a site.

A Tier 1 Colombian tower operator has chosen Kentrox for 2,100 of its cell sites to help meet their customers' Service Level Agreements (SLAs) and avoid costly fines. Additionally, the intelligent site management solution from Kentrox is helping minimize operating costs by reducing truck rolls and enhancing site security – both for personnel and equipment.

The Kentrox applications being utilized by the Tier 1 operator include:

- AC power monitoring
- Battery monitoring
- Cabinet monitoring
- DC power monitoring
- Environmental monitoring
- Fuel monitoring
- Generator management
- HVAC monitoring
- HVAC energy monitoring
- HVAC control
- Rectifier monitoring
- Surveillance management
- Tenant power metering

## The network

The Optima management system, Remote RMM-1400s, and Remote RMB-1s were deployed at nearly 1,500 Colombian sites in less than one year. Optima, which supports multiple languages, is installed at a data center and supports Graphical User Interface (GUI) connections in both English and Spanish. Optima centralizes and monitors all measurement and alarm data from the RMM-1400s installed at each remote site, trends the site data, and provides detailed reports on site performance. The RMM-1400 enables site alarm monitoring, protocol conversion, and equipment connectivity, and acts as an intelligent extension of the operator's Operations Support System (OSS). The data obtained from the Remote suite of products is transferred to the centralized Optima management system over a secure, private cellular network.

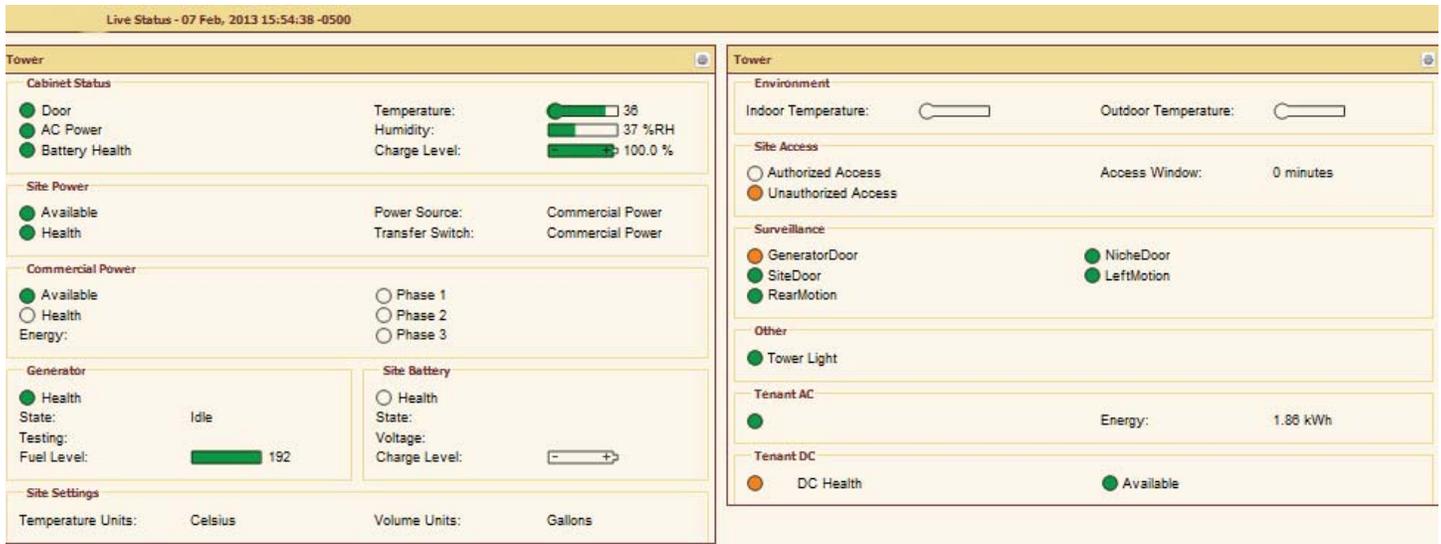
The RMM-1400s and RMB-1s are enclosed in a Kentrox cabinet which also contains all associated power meters and site-specific sensors. This operator is monitoring the environmental conditions of both the shelter and the equipment cabinet including the indoor and outdoor temperature and humidity, door status, and smoke detection. If a measurement exceeds a predefined threshold, the operator is immediately notified. This helps provide the information required to ensure the proper operating conditions for the sites and notifies operations' staff to react to a situation before it turns into an SLA event, potentially resulting in financial penalties.



Optima regional map enables real-time network views with point-and-click site and location visibility

Multiple sources of power (commercial, batteries, and generators) exist at most sites. The Kentrox solution provides a real-time view of the power sources, incoming power consumption, and total power distribution throughout the site. It identifies AC power quality and highlights problem conditions that could lead to equipment damage or malfunctions.

A generator (either legacy or a newer model with a smart controller) is deployed at most sites. Some are used for primary power, but most are the back-up power source. The generator management application from Kentrox monitors their operating conditions and readiness. Fuel levels are monitored to schedule timely refills " as



Live View report from Optima showing status of site conditions and applications for a Colombian site

needed” instead of at designated times each month. Maintenance and control is also conducted by remotely starting the generator and automatically testing them for maintenance and regulatory compliance.

Monitoring the security of tower sites and the equipment in Colombia is critical to the network success and meeting the SLAs. The Kentrox solution is providing video surveillance and motion detection throughout these sites which is monitored remotely. The operator is alerted if motion is detected and can access the camera’s web browser to see if someone is illegally entering the site or tampering with equipment.

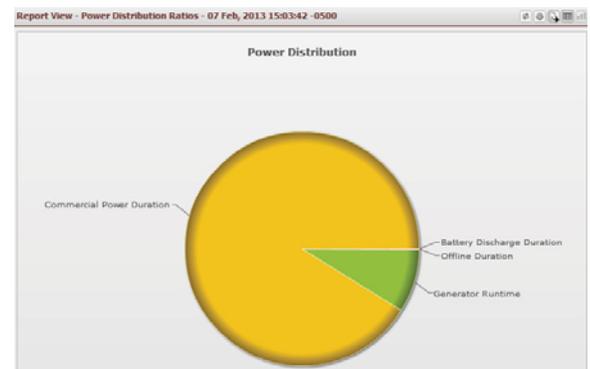
Heating, Ventilation, and Air Conditioning (HVAC) systems are also being monitored and controlled remotely. The data provided to the NOC helps to optimize energy consumption and ensures systems are running efficiently and properly maintained. The HVAC is also being controlled remotely by adjusting set points, swapping which unit is the lead unit, and clearing locks to the system when they are present.

**The benefits**

The Kentrox intelligent site management solution deployed for this Colombian Tier 1 tower operator has produced many benefits. The most important benefit is the ability to measure and meet their customers’ SLAs. There are large financial penalties associated with not meeting the requirements of the SLAs, and the Kentrox solution has improved the effectiveness and efficiency of these sites and continues to meet the critical SLAs.

The ability to remotely monitor, manage, and control many aspects of the site have significantly reduced the number of truck rolls required, which is important since many locations are in difficult to reach or dangerous locations. When a site visit is required, remote monitoring has helped improve the safety of the personnel.

Because power is available from multiple sources, the Kentrox solution provides the data to enable the operator to properly bill each tenant based on the actual consumption. For example, the commercial power usage charged to the tenant is at a different rate than the generator and battery power supplied,



Power distribution report displaying the ratio of how power has been distributed over a designated period of time.

and the power management application provides accurate details for billing. The data also provides insight into the failover process from commercial to generator power, tenant load balancing, and individual phase issues. Additionally, load balancing is managed to reduce failures and ensure a single phase failure does not result in major downtime.

Implementing the intelligent site management solution from Kentrox is providing the Tier 1 operator with a quality network, minimizing downtime and providing significant operational cost savings.

**For more information, visit [www.kentrox.com](http://www.kentrox.com), email [info@kentrox.com](mailto:info@kentrox.com) or call 800-733-5511 or +1 614 798 2000.**