

Saving Time & Money with Remote Power Management

white paper

How Organizations Can Benefit from Implementing
Remote Power Management Procedures

MINUTE[®] MAN
POWER TECHNOLOGIES
by Para Systems, Inc.

Background

Thirty years ago, people would gaze at you with a quizzical look when using the term UPS. Now, due to market penetration and rapid adoption rates, the term has become commonplace in the power protection field.

Additional features and functionality emerged that provided substantial benefits for the end-user as UPS technology evolved. Twenty years ago, power management software was one of the first technological advancements in UPS technology. This was a great milestone in power protection, but IT managers and other sophisticated users were seeking additional functions - they wanted more. Their attitude was, "if we can monitor the UPS, why can't we do more?"

One of the first new applications that IT, telecom, or security managers wanted was the ability to control devices that were located remotely. "Remote" can be outside on a light pole, hidden in the rafters above ceiling tiles, inside an equipment closet, or in an office located across the country.

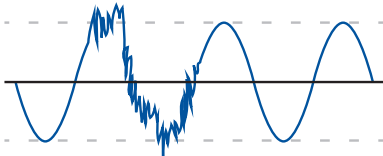
Businesses and service providers depend on LAN/WAN internetworking equipment and there is a long list of problems that may arise from a failed network device. Some of these problems include loss of revenue, customer dissatisfaction and decreased productivity.

Whenever a device fails, the most proven method is to cycle power or reboot. This can be challenging if the device is not easily accessed or the device is located in another state. It's simple to cycle power off and on when you can easily get to a device that's locked up. However, when it's in an inconvenient location, the problem is magnified. Remote power management systems are designed to solve the problem of equipment lock-ups and reduce downtime. With an RPM and a static IP address, IT, security and telecom managers can reboot devices utilizing a standard web browser and a password. Locked-up devices can be re-set from a desktop pc, laptop, smart phone or tablet.

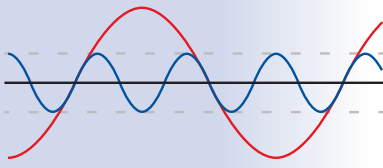
Power Problems Leading to Lockups

Power Disturbances

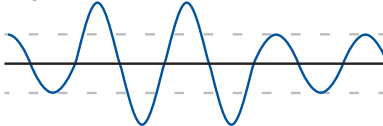
Electrical Noise



Harmonics



Surges



The Causes of System Lock-ups

A lock-up is when a device refrains from functioning properly due to an issue in on-board firmware, software or hardware. Lock-ups cause downtime which affects productivity and the reliability of hardware in a negative way.

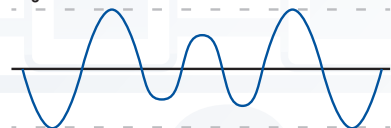
Power Problems that affect the functionality of your equipment:

- **Electrical noise** is when unwanted EMI/RFI electrical signals travel on electrical wires. Extreme cases of electrical noise can lock-up sensitive electronic equipment.
- **Harmonics** are a deviation from the normal voltage or current waveforms. This can cause overloading and overheating in transformers, motors and electrical wiring.
- **Surges** are when there are waves of voltage above the normal range that usually lasts for several seconds. This can result in lock-ups, resets and hardware damage.
- **Sags** are when the voltage level drops below the nominal range for a short amount of time. Sags can cause a shutdown of equipment or reset.
- A **spike** is a severe increase in voltage above the normal level that may result in equipment drop-off or damage.
- A **transient** is a temporary change in voltage or current over a short period of time. Transients are grouped into two categories: impulsive and

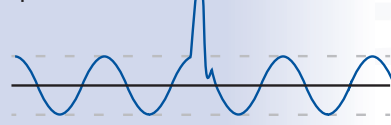
Power Problems Leading to Lockups Cont'd.

Power Disturbances

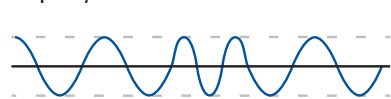
Sags



Spike/Transient



Frequency Variation



oscillatory. Transients can be the most damaging type of power quality disturbance.

- When there is a change in frequency from the normal stable frequency of 50 or 60 HZ, this is called **Frequency Variation**. Frequency variation can cause data loss, program failure, equipment lock-up, or a shut-down.
- When equipment is not properly ventilated or cooled this is called **Heat Build-up**. Heat Build-ups frequently cause lock-ups.

Regardless of what causes downtime and/or lock-ups, it is essential to keep vital applications and equipment up and running. Things happen unexpectedly and preparedness for these events is vital. It pays to invest in solutions such as Remote Power Management products to aid in the support of mission critical devices. When equipment fails, it costs businesses money.

The Cost of Downtime

Achieving the maximum amount of uptime is critical to the health of any company who relies on mission critical devices such as data centers for business critical services. Data centers have become a business asset and a core of business performance and customer satisfaction. As these data center operations increase, so do the financial and intangible costs of downtime.

When equipment fails, it costs businesses not only monetarily, but it affects their reputation. Ponemon Institute's "National Survey on Data Center Outages" says that 95% of companies experience an unplanned downtime event. 60% of these companies rely on their data center to generate revenue or support e-commerce activity, and out of these, less than 35% believe they have the system in place to maximize the availability of uptime. An article in Information Week said it best:

"A lot of times companies don't fully understand the cost of not preparing, so as a result, they are not willing to spend dollars to ensure disaster doesn't occur or they can recover quickly from a disaster. Some smaller companies traditionally don't fully understand the breadth of technology and how to implement it to the spectrum of data loss issues that may come across their organization, because of cost and complexity."

Estimated total annual cost of downtime according to CA Technologies survey:

Total lost revenue:

\$ \$26.5 billion
\$150,000 per business surveyed

Time:

🕒 14 hours of IT downtime annually

Lost Revenue by Business Size:

👥 Small: \$55,000
Midsize: \$91,000+
Large: \$1,000,000+

The cost of downtime can be devastating to a business. According to a survey performed by CA Technologies, more than \$26.5 billion in revenue is lost each year from downtime which means each business is losing \$150,000 annually. The survey also revealed that outages can damage a company's reputation, staff morale, and customer loyalty.

According to the same survey, businesses suffer from 14 hours of IT downtime per year and an average of 18% of these companies described the impact of the outages "very damaging." Out of 200 companies surveyed, small enterprises lost an average of \$55,000 in revenue, midsize companies lost more than \$91,000 and large companies lost more than \$1,000,000 due to IT failures.

Why Does Your Organization Need Remote Power Management?

Take a look at this scenario: An IT Manager named John is out to dinner with his wife celebrating their anniversary. A text message from his boss informs him one of their critical servers has locked up at a remote location two hours away. Someone has to go out and physically reboot the server, and since his boss is out of town, there's no one left but John. He informs his wife that their dinner has to be cut short so he can drive to the remote location and reboot the server.

Wouldn't it be great if there was a device that would allow John to easily reboot the server from the restaurant? The good news is that there is such a device – a Remote Power Manager (RPM).

Situations like these prove why organizations need RPMs. Let's face it, locked-up systems are a fact of life and any enterprise or service provider that relies on the use of networking equipment, such as routers, ATM switches, and DSLAMs, for mission-critical networks or e-commerce services need a remote power management system.

When a network goes down, problems arise when critical systems are in remote locations that need to be considered:

Remote location service call costs:

Monetary:

 \$500 per call average

Time:

 1.5 hours

Business Size:

 Costs increase exponentially

- A third party service call averages about \$500
- The average downtime from locked up equipment averages 1.5 hours
- Service level penalties and lost revenue go up exponentially by the size of the enterprise
- Loss of revenue due to decrease in productivity
- Unproductive staff due to the inability to use critical devices
- Travel expenses of IT Managers and Administrators
- Customer frustration

A majority of enterprises use uninterruptible power supplies (UPS) to keep their equipment operational. Multiple networking devices are connected via a single UPS to power outlets, which poses its own dilemma. If an individual router fails, for example, the UPS does not have the ability to power cycle on an individual power outlet.

The Remote Power Manager provides the ability to immediately cycle power or reboot a device without interrupting all of the equipment attached to the UPS. Some Remote Power Managers can also initiate a graceful shut down for a wide variety of servers, and provide remote equipment monitoring to ensure devices are running correctly.

Another important function that Remote Power Managers can provide is power sequencing. During a power-up, each of the power outlets can power on sequentially, which distributes the load and eliminates the risk of a blown fuse or tripping a circuit breaker.

In recent years, industry attention has been focused on monitoring the IT infrastructure. However, when it comes to actually fixing and validating repairs, IT professionals typically resort to a number of solutions that have proven to be inefficient. As operational efficiencies in repairing critical devices have become more and more important, the need for accelerated Mean- Time- To-Repair (MTTR) has become important in most IT organizations. The more advanced the infrastructure, the greater the demand on fast and efficient device remediation. An RPM helps ensure long term quality and reliability of critical devices, which is one of the main priorities of any business that relies on the operation of their data center.

Understanding the RPM: How does it work?

Remote power management solutions allow administrators to remotely power cycle servers and devices and troubleshoot problems, both locally and remotely, from any location in the world. This eliminates unnecessary service trips to the remote locations. The RPM allows the administrator to securely control the power to every piece of equipment in the data center.

This provides administrators with the ability to manage servers more efficiently and reduce equipment downtime by giving them direct access to power control. Remote power management solutions are also used by many businesses and organizations to manage servers at offices and branch locations where there are no IT staff members.

Two-port, eight-port or sixteen-port Remote power managers are available, using a single static IP address to manage multiple devices. The newest Minuteman RPMs give the administrator the ability to individually control up to 16 connected devices. Just as these solutions have adapted to today's technology needs, they will continue to adapt to future needs and requirements.

Is an RPM worth the Investment?

Many organizations find remote power management solutions are cost effective and provide a significant return on investment (ROI). An example was provided by a DirectNet company where an enterprise worked with a multi-national business solutions provider and implemented a complete remote power management solution. Their investment of \$30,000 provided a savings of more than \$65,000 within one year, by allowing them to terminate a costly support agreement with a 3rd party service provider.

The solution allowed the company to more quickly mitigate and resolve issues as events occurred, increase worker productivity due to fewer distractions, and reduce equipment downtime. The benefits of utilizing an RPM include:

- Reliable, cost effective solution
- Easily integrates with existing infrastructure
- Reboot via pc, laptop, smartphone or tablet
- Cost-effective and often provides strong ROI
- Energy Efficiency with Scheduled Downtime

According to Enterprise Management Associates, remote management capabilities have demonstrated as much as a 92% decrease in labor costs for managing devices in distributed environments and 66% decrease in the actual time for fixing a problem once it occurs. In addition to this, remote management solutions have demonstrated better than a 90% decrease in labor costs. Remote management solutions have also shown a 66% decrease in MTTR through the elimination of travel days and optimizing in-depth device diagnostics.

The Solution

Today's Information technology systems are far more complex and far more widely distributed than in the past. Because of this, the challenge of managing these systems has become a more arduous task, demanding that IT managers, security managers, and telecom managers be constantly informed about the status of all devices in their systems.

Devices that help facilitate more effective management of mission critical systems can become the best friend of these managers. Making life easier for them is the ultimate goal of companies that produce solutions for these markets. Remote power managers do exactly that by providing visibility of equipment status and the ability to remotely re-start locked up devices with the click of a mouse or a touch on their smart phone.

John, the IT manager mentioned earlier, would have been able to continue his important dinner without interruption had they installed RPM devices. In less than thirty seconds, the problem could have been solved. At that point, the RPM would have become John's best friend.

Enterprise Management Assoc. Survey on Remote Power Management

Remote Management Capabilities

92% Labor Costs

66% Time to Resolve Problems

Remote Management Solutions

90% Labor Costs

66% MTTR (Mean time to repair)

Minuteman's RPM products are the ideal solutions for network administrators who manage one or more remote locations. Once connected to the network, the user can easily control power to attached devices from virtually anywhere utilizing a standard web browser and a password. With a simple click, users can perform a power up, power down or reboot for devices connected to the RPM.

Administrators can program the RPM to notify personnel when a device locks up via an automatic ping function, and even allow the RPM to reboot the locked device without any human intervention. This eliminates downtime while letting technicians focus on more important tasks.

Popular Applications for Remote Power Management solutions:

IT:

Servers
Network Switches & Routers
Wireless Access Points

Security:

DVRs
Cameras
Access Points

Communications:

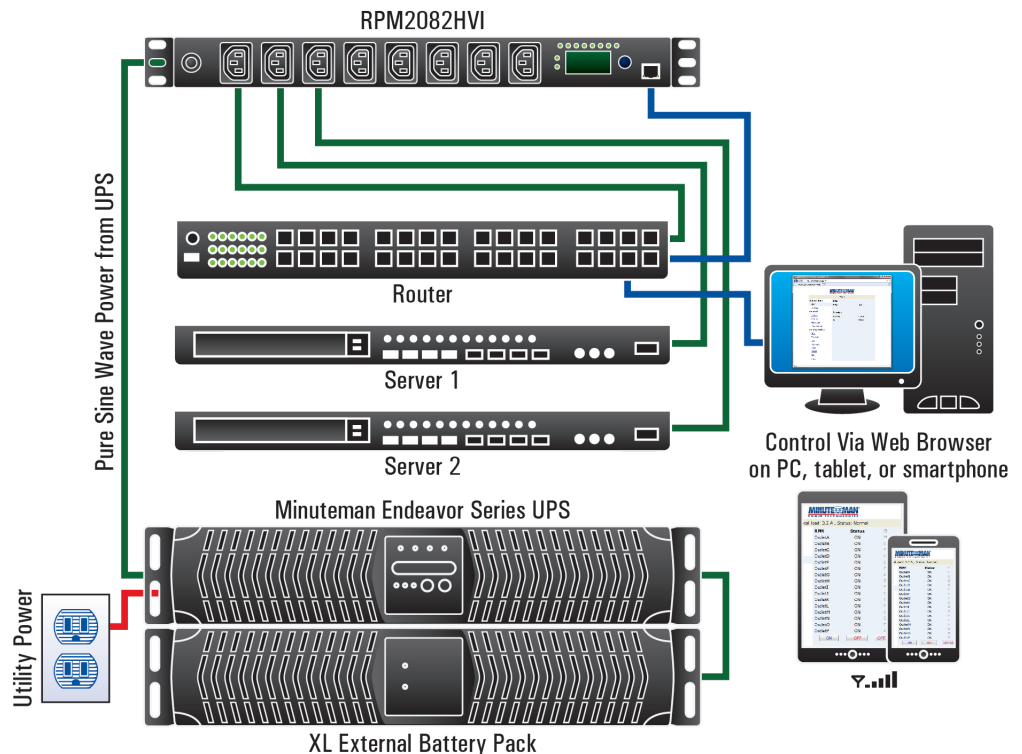
Phone Systems

Minuteman's Advanced Feature Set:

- IP-based PDU
- Direct web browser-based user interface
- Individual outlet control
- Event alerts via SNMP or Email
- Scheduled management actions
- True RMS load meter
- LCD Display
- Grouped outlet control
- HTTPs / SSL Support
- Vertical-mount models
- 8 & 16-outlet models
- Enterprise management utility
- RoHS compliancy
- UL60950-1 certification
- 120VAC and 208VAC models

For more information, visit www.minutemanups.com/rpm

RPM Sample Installation





About Minuteman Power Technologies

Minuteman Power Technologies products are manufactured by Para Systems, Inc. Founded in 1982, Para Systems, Inc. is a privately held corporation headquartered in Carrollton, Texas. Our power technology products are sold in more than 100 countries throughout the world.

Minuteman single-phase UPS products are available in sizes ranging 400VA to 24KVA, and we also offer three-phase UPSs from 10kVA to 300kVA. Additional products include surge suppressors, remote power management (RPM) tools, power distribution units (PDU), and power management and monitoring software.

The Minuteman brand has been synonymous with quality and reliability since 1982, and our products represent better value in terms of price vs. performance and reliability. In addition, we pride ourselves on providing superior product warranties, and the industry's most responsive customer service both before and after the sale.

About the Authors

Bill Allen
Minuteman Power Technologies
Director of Marketing
800.238.7272 x240
ballen@minutemanups.com

Karren Hodge
Minuteman Power Technologies
Marketing Database Specialist
800.238.7272 x232
khodge@minutemanups.com

Learn more at our website: www.minutemanups.com

Size the perfect UPS solution: www.sizemyups.com

Learn more on our News & Resources section: www.minutemanups.com/news

white paper

Para Systems, Inc. | Minuteman Power Technologies
1455 LeMay Dr. | Carrollton, TX 75007
972.446.7363 | 800.238.7272
www.minutemanups.com | www.sizemyups.com

