

WHITE PAPER: SPIREON - PRIORITIZING MANAGEMENT OF POWER

Making Power Management A Priority: Extending the Performance of Your Trailer Tracking System

If You Want Rich Data, You've Got To Recharge

Smart mobile devices connect us to a wealth of content we've come to take for granted. We use them to buy and sell stocks, read the news headlines, send emails and text messages, schedule appointments, find the nearest gas station, check restaurant reviews, surf the Internet, and so much more. In exchange for having easy access to all this rich data and functionality, we occasionally have to plug in our smart devices so that they can recharge.

We don't think twice about doing this. It's just a given, understood and performed by everyone who has an iPhone, Android, iPad or any other smart device. Sure, we could all go back to using pagers. That would mean less recharging, but it would also mean limited data and functionality. And who wants that? Now apply the same principle to trailer tracking. Like all smart devices, the most effective trailer tracking systems capture and deliver a wealth of rich data. Which means, like the iPhone in your pocket, these systems periodically need to be recharged to avoid power failure. For the purposes of this paper, we're shifting the focus from trailer management to power management, and why power management should be an important part of your decision-making process when selecting a trailer tracking system.

Choosing a solution with a smart power management strategy is key to accessing and leveraging the real-time rich data you need to drive your fleet performance. So what does this smart power management strategy look like? Here we present some key power management components your trailer tracking system should have.



Do You Really Need Rich Data?

In a word: Yes. Although many trailer tracking system providers will try to tell you otherwise. Truth is, the vast majority of trailer tracking systems provide a once-a-day snapshot of your trailer locations, frequently charging customers more for additional views. Other systems alert you to the trailer's location only after the trailer has been stationary for one hour — preventing you from seeing any short stops the trailer may have made along the way.

With these types of systems, the tracking device goes to sleep while moving for two to four hours between wakeups, preventing you from pinging trailer locations regularly while the trailer is in motion. What's more, it's not uncommon for users to receive updates on their trailer locations a few hours after pinging the system. So in addition to limited visibility (especially when trailers are moving), the data you're seeing is often outdated and inaccurate by the time it finally gets to you. Which means you're basing fleet decisions on old, incomplete data. We call these systems low data, and they all but

DEVICE FAILURE VERSUS DRAINED

Battery: Understanding The Difference

It is not unusual for users of trailer tracking systems to mistake a battery that just needs to be charged for device failure. A drained battery occurs when the source of power is no longer available; for example, when the battery loses its charge. Device failure occurs when there is an operational issue with the device itself, unrelated to power source. When evaluating trailer tracking systems, be sure to ask the solution providers for the failure rate of their devices. But also be sure to ask them what strategies they have in place to extend battery life. Spireon's FleetLocate Trailer Tracking Solution essentially offers a failure rate of less than 1%. In other words, our devices don't fail. To help customers ensure a fully charged battery as well, we have invested significant resources and time to develop a robust and industry-unique power management strategy. This includes partnering with industry-leading battery technology innovators to deliver state-of-the-art technology.

SPIREON'S POWER MANAGEMENT

Strategy: Longer Life, More Intelligence

Spireon's FleetLocate Asset & Trailer Intelligence Tracking Solution encompasses a host of innovative new upgrades to our power management approach and technology, all designed to extend battery life, connect you to more critical information, and maximize the return on your FleetLocate investment. Here's a closer look at the key power enhancements built into our system.

SOLAR POWER MANAGEMENT

The best, most reliable way to ensure uninterrupted device reporting is through harnessing the power of the sun as its ultimate backup. FleetLocate technology such as the FL22+ and FL Flex product families offer solar options so that long battery life is no longer a concern.

MOBILE ACCESS

The FleetLocate system allows customers to check on the status of battery at installation and battery throughout its life using their mobile phones, tablets or laptop.

guarantee a low return on your investment.

How Do You Know You Have An Intelligent Solution?

For a truly intelligent solution, look for a trailer tracking system that delivers a rich level of data in real time. Your system should automatically capture and transmit GPS positioning at least every 10 minutes including while the trailer is in motion, with on-demand views available anytime — not just once-a-day pings. You should be alerted every time a trailer comes to a stop. And you should be certain that the data you're looking at is current — not two hours old.

Beyond trailer location, look for a system that delivers a wealth of valuable data. This includes whether or not a trailer is moving; actual miles that trailer has traveled; heading and speed; when a trailer leaves or arrives at a landmark; the actual number of trailers needed at each location; historical data; and more.

This type of rich data, when translated into actionable business intelligence, is what drives faster, smarter, more profitable operational and business decisions. But in order to have continual access to this rich data, you'll also need a solution with an intelligent power management strategy in place.



ALERTS AND REPORTS

FleetLocate captures and delivers rich data about battery operation as well as trailer location and status. Customers receive automated reports and alerts that let them know when a device is in motion but not receiving tractor power indicating that the trailer also is moving without external power; when a tractor may have a blown ABS fuse; when there is a faulty install, and more.

ENVIRONMENTAL PROTECTION

FleetLocate devices are designed to meet rigorous IP67 standards for environmental protection of enclosures around electronic equipment. Our devices undergo thorough testing to ensure superior protection against dust and water. This means our batteries are also shielded from environmental elements that could impact their performance.

SHIPPING METHODS

We ship our batteries fully charged and in hibernation mode to make sure they're powered up and ready to use, right out of the box. All FleetLocate battery products are shipped with an installation guide that provides important information for the best connection for recharging our battery.

HEALTH CHECKS

FleetLocate's account management team works with customers to proactively assess, identify and address power management challenges. Our Account Managers help users perform periodic battery health checks, identify and red flag troubled tractors, and access other power management tools.

Fleet Audits Identify

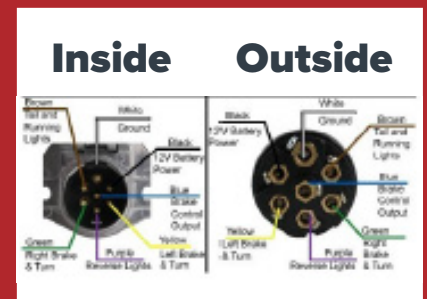
Faulty Fuses

According to the Federal Motor Carrier Safety Administration, trailers manufactured after 1998 must be equipped with an ABS malfunction indicator lamp. That requires having a live 7-pin at all times. To help comply with this law — and avoid fees — Spireon strongly recommends that our customers conduct a thorough audit of their tractors before installing the FleetLocate Trailer Tracking Solution.

Have your maintenance crew check the fuse located behind the 7-pin connected to the ABS, to ensure it hasn't blown and is still operating. This ensures that the FleetLocate devices installed on the trailers and tied into the 7-pin will continue to have a power source. What's more, inspecting the 7-pin fuses of your tractors will ensure that their ABS is also powered — potentially saving you a hefty fine for faulty ABS function.

Once installed, the FleetLocate device will send you an alert in the event it detects movements without connection to an external power — possibly indicating a dead 7-pin. This type of rich data can end up saving you the cost of a fine, failed safety inspections and CSA violations.

Increasing numbers of trucking companies are making their 7-pin fuse and ABS functionality a priority. In fact, some of our customers are exploring a resettable fuse that enables them to re-activate a blown 7-pin fuse when necessary.



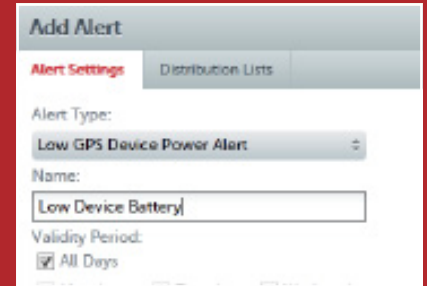
YOUR POWER MANAGEMENT PRIORITY LIST

When considering adopting a GPS-based trailer tracking system to help you better manage your trailers, be sure to consider how that system is powered as well. To make sure the solution you select has a robust power management strategy in place, ask the solutions providers the following key questions.

- Does the system connect me to rich data in real time?
- What is the rate of device failure?
- Are the batteries re-chargeable?
- Does the system come with a battery back-up? If so, how many days of back-up does it provide?
- Will I be able to check the status of the battery install and life using my smart phone?
- Will the system alert me when a trailer is moving without power, when a trailer completes a prolonged stop, when power is low?
- Is the device IP67 compliant? Is the battery protected from dust and water?
- How are the batteries shipped?
- Do they provide installation guides?
- Do they have people on their team who can help me trouble shoot power and tractor issues?
- Can they help me comply with J560 regulations regarding ABS function?

Spireon's FleetLocate Asset & Trailer Intelligence team is ready to answer your questions and discuss our industry-leading power management approach with you.

Visit us at [Spireon.com/trailer-management](https://www.spireon.com/trailer-management) or call 1-888-624-1350 to speak with a power management specialist and schedule a demonstration.



Can Your Battery Communicate With You?

A trailer tracking solution should include an intelligent battery system as well — one that communicates critical information about battery, trailer and tractor performance directly to you. Spireon's FleetLocate Asset & Trailer Intelligence solution captures battery data that can protect your costs as well as your company. It also sends you important alerts that let you know what's going on with your battery, trailer and tractor, so that you can take immediate corrective action.

The Power Of Innovation

Spireon continues to innovate around our battery technologies to bring our customers extended battery life and added power. This includes developing a proprietary, industry-unique method for securing a secondary source of back-up power. We are also investigating next-generation battery chemistry and power options that deliver an even longer life.