

Wireless Fueling System

Automatic Fuel Tracking

TRACK • MONITOR • CONTROL

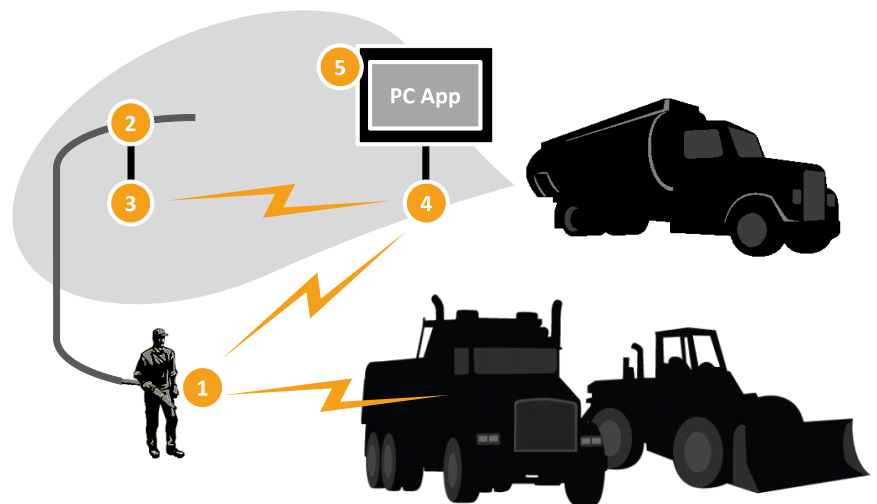
TeraHop's Wireless Fueling System accurately tracks the amount of fuel transferred from fueling trucks and on-site stations to vehicles, heavy equipment, and facilities. Use the system to:

- Record fuel dispensed to assets like trucks, backhoes, and storage tanks
- Automatically identify fueled assets with RFID tags
- Accurately allocate fuel costs to specific jobs, assets, and tax credits
- Reduce error from incorrect meter reads, logging, and transcriptions
- Verify fuel pumped to company assets to reduce fuel theft and misuse
- Capture engine run/idle time, GPS location, speed, and other monitoring data from Portable Data Collectors on equipment, vehicles, people, and inventory in the field

System Overview

Key components of the Wireless Fueling System are:

1. An RFID Handheld Reader to automatically identify asset receiving fuel
2. A fuel flow meter installed in-line with the fuel dispensing hose
3. A fueling Portable Data Collector (PDC) connected to the fuel meter
4. A Mini Gateway Router (MiniGR) connected to a PC
5. A Windows PC running the TeraHop Server



The RFID Handheld Reader (1) allows the fuel operator to automatically identify the asset receiving fuel, saving operator data entry time, and eliminating error. When fuel is pumped through the meter (2), the PDC (3) wirelessly transmits fuel quantity data to the MiniGR (4) and into a PC running the TeraHop Server (5), which can be integrated with your fueling, maintenance, and accounting software.

Components in the Wireless Fueling System are rugged, small, and simple to install. The MiniGR receives power from the PC, and the fuel meter and PDC have long-life batteries, so you're up and running without extra wiring.

FEATURES

- Track fuel dispensed to vehicles, heavy equipment, and facilities
- Automatic vehicle identification with RFID tags
- Works with popular fuel tracking software
- Install on fuel trucks or fueling stations
- Meter options for non-petroleum chemicals
- 2 year battery with 30-day low battery alert on fuel meter communication
- Collect additional maintenance and monitoring data from TeraHop PDCs on equipment, vehicles, people, and inventory in the field
- No switches or buttons to set
- Operates 24/7 without user intervention
- Fully rugged and harsh environment certified
- Ready to use out of the box, fast to install
- No cell or satellite subscription



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COMPLETE ASSET TRACKING

Installed on a fuel truck, your Wireless Fueling System is not only a way to track fuel, but the mobile hub of a complete asset monitoring and tracking system you can extend to other vehicles, equipment, workers, inventory, and tools.

For example, your fuel truck can capture data from:

- PDC400 devices capturing engine run and idle time, asset location and speed, runtime of auxiliary equipment, and sensor I/O from heavy equipment and vehicles
- PDC 700-series RFID devices tracking worker time & attendance or inventory
- PDC300 presence detectors worn by workers



As your fueler makes the rounds, the TeraHop Mini Gateway Router installed on the fuel truck collects asset monitoring data from any TeraHop PDC within hopping range, storing this information in the TeraHop Server on the PC.

On return to base, all collected data is uploaded to your enterprise applications for preventative maintenance, job costing, workforce tracking, or material management.

For more information about turning your Wireless Fueling System into a complete asset tracking solution, contact your TeraHop sales representative.

TeraHop Network Overview

TeraHop's Portable Data Collectors (PDCs) are self-contained wireless communications devices that store and transmit vital asset management data. PDCs are compact and fully ruggedized for the harsh environments of construction sites, industrial yards, road-going vehicles, and remote facilities.

PDCs use TeraHop's unique message hopping technology to expand site coverage while maintaining low power consumption. This enables PDCs to penetrate into buildings, tunnels, and other environments that are typically challenging for radio reception.

TeraHop Network Systems use a portable Gateway Router (GR) to collect data from PDCs. A GR is small and rugged, and can be taken onsite in any vehicle, or permanently affixed to a site structure. It collects and stores all data accumulated from PDCs, then transmits the data to a secure central database via a wireless or wired connection. The TeraHop Server can share site-wide data to popular software applications, providing visibility to any connected computer or smart phone, on or off site.

About TeraHop Networks

TeraHop Networks is a leading manufacturer of asset monitoring and portable networking devices. Companies in the construction, transportation, manufacturing, emergency response, and mining industries can use TeraHop's patented, subscription-free technology to cut costs and reduce waste by monitoring the location and condition of their mobile assets and personnel. TeraHop products are ready to run right out of the box, without satellite, cellular, Wi-Fi, or cabled network communication infrastructure. Power options for TeraHop products include battery, vehicle, and line power.

TeraHop provides hassle-free, reliable, and affordable asset management hardware that integrates with popular maintenance, monitoring, and tracking software platforms. Privately held, TeraHop has offices in Seattle, Washington and Alpharetta, Georgia.

Wireless Fueling System

Technical Specifications Summary



Fuel Flow Meter



Fueling PDC



Mini Gateway Router



RFID Handheld Reader

For complete specifications, see individual product data sheets.

Fueling PDC – PDC302A

Description: Rugged plastic data collector and transmitter with cable connection to fuel meter

Dimensions: 4.3" length, 2.5" width, 1.4" height

Weight: 6.4 ounces

Digital I/O: One 4-pin serial connection to fuel meter, one 16-pin serial configuration port

Battery: Internal, 2 year battery life with normal use, sends low-battery warning event when estimated 30 days of life remain

Mini Gateway Router – GR1101A

Description: Rugged plastic Mini Gateway Router wirelessly collects fuel data from PDC302A and transports to server database on PC

Dimensions: 4.3" length, 2.5" width, 1.4" height

Weight: 5.5 ounces

Power: Via USB communications connection to PC running TeraHop Server Software

TeraHop RF Network Characteristics

Transceiver: Patented data transfer radio, wake on demand

Frequency/Range: 2.4 GHz, license-free globally

Antennas: Internal

Hopping: Wireless routing up to 16 hops

Regulatory Compliance: FCC Part 15C, Class B

Firmware: Wireless over-the-air setup, customization, and updates

Security: Available shared key encryption

Fuel Flow Meter

Description: High pressure, durable, compact turbine flow meter

Housing: Aluminum, stainless steel, or other materials available

Fitting: NPT or ISO (Female)

Sizes and Flow Range: 1/2" (1-10 GPM), 3/4" (2-20 GPM), 1" (5-50 GPM), 1.5" (10-100 GPM), 2" (20-200 GPM)

Battery: 5 year life with normal use

RFID Handheld Reader – PDC700B

Description: Rugged RFID handheld reader, high-impact plastic case with finger grips, internal RFID antenna and data transmitter

Dimensions: 6.75" length, 2.75" width, 1.5" depth

Weight: 12 ounces

Trigger: Single press to read RFID tag

Indicator Lights: TeraHop network status, tag read, charging, low battery

Speaker: Audible read indicator

Attachments: Recessed pin holder for wrist strap, lanyard, or retractable cable

Power: Rechargeable battery pack with wall charger, protective rubber plug for power inlet

Read Distance: Up to 18" (tag dependent)

Battery Life: Approximately 500+ reads at maximum range

Companion Products

To complete your Wireless Fueling System:

- RFID tags for automatic vehicle and equipment identification
- 300 or 400 Series PDCs for monitoring



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