



ReeferTrak® Scout

2-WAY WIRELESS (RF) MONITORING & CONTROL OF REFRIGERATED TRUCKS & TRAILERS

The Ultimate Spread Spectrum Radio Frequency Reefer Solution



- Remote Control of Yard Operations
- Multi-Site Web Operation
- 2-way Command & Control
- Validate Set Points Automatically
- Automatic Reefer Downloads via Web
- Trip Performance Instantly via Web
- Temperature Recording 5 – 15 minutes
- Reefer Micro Events & Alarms
- HACCP Compliant
- GPS Integrated
- Trip Storage & Retrieval via Web
- Scheduled Pre-cooling via Web
- Multi-Temp Operation
- Dual Mode (w/satellite or cellular)
- Easy Installation
- Reliable

Imagine the application...

A reliable wireless service providing information about local and regional refrigerated shipments:

Records reefer status (operating conditions, temperatures, set points), alarm conditions and GPS and downloads it to multi-site base stations for immediate retrieval via the Internet.

Provides 100% assurance of refrigerated transport temperature compliance immediately at destination. Assures temperatures are set properly at shipment origination.

Gives remote control of reefers in specific locations within seconds (on/off, change set point, run pre-trip).

Permits scheduled pre-cooling of trailers prior to driver arrival. Provides customer access to fleets through an unlimited number of base stations all accessible via the Internet.

Stores HACCP downloads via the web.

ReeferTrak® Scout is a complete solution for reefer monitoring, control and download retrieval.

From the Equipment...

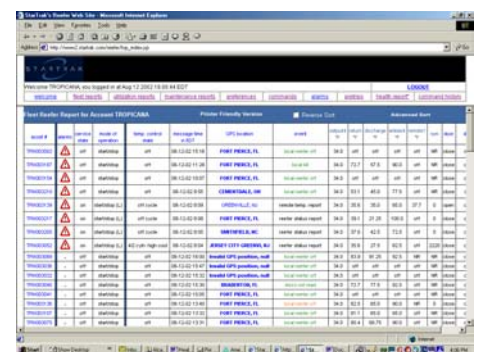
ReeferTrak® Scout is installed on the reefer trailer or truck and includes a radio frequency two-way radio, internal intelligence, and memory. Scout interfaces to the reefer microprocessor and other sensors (load, door, fuel, vibration, remote temperature, brakes, etc.). Scout monitors and records reefer, sensor, and GPS information at regular intervals for download or delivers commands to the reefer via remote control. Scout is configurable for all reefer microprocessor types.

The customer base station, comprised of a web-enabled computer and RF radio, communicates to assets within range (1 mile nominally), receives downloads and provides point-to-point communications in seconds using the Internet. Base Station login of reefers provides assured knowledge that units are in range and are controlled remotely. The system is completely scalable – an unlimited number of base stations assures coverage in all areas.

Reefer alarms are sent in seconds, via the Internet, email, pager or fax. Trigger levels, operational parameters (GeoFence locations) and reporting times are settable remotely.

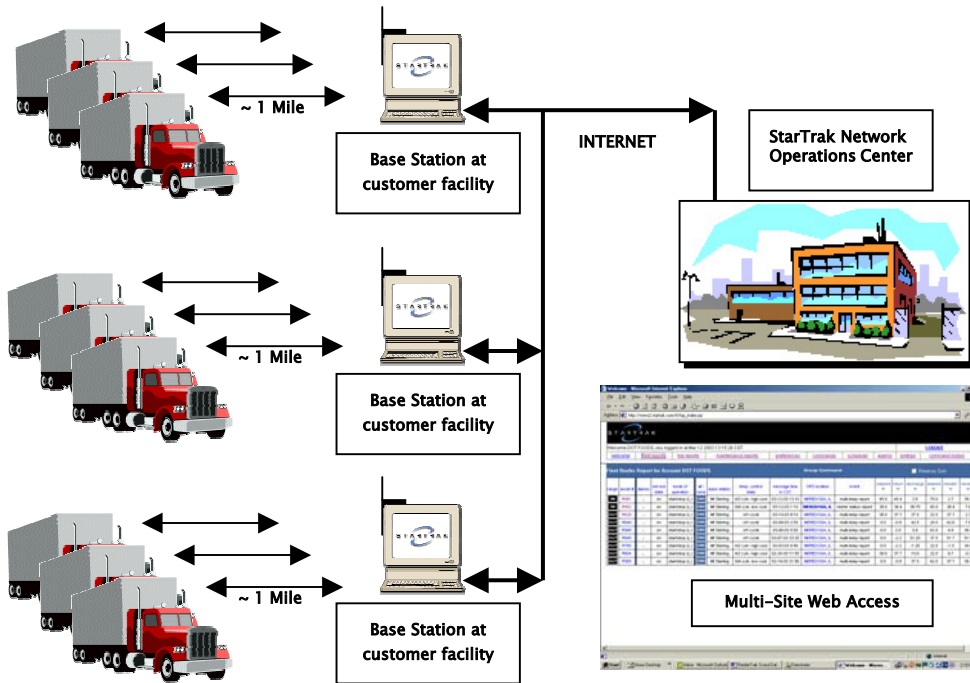
Via the Internet...

The solutions are fully web-enabled and all reefer download & status information is available instantly from any PC or wireless device. Scout instantly crosschecks set points with (weigh bills, bills of lading?) purchase orders? To ensure shipments are set to the proper temperature at origin. At destination, trip downloads can be instantly reviewed at any PC connected to StarTrak's website to assure customers that loads were transported at temperature for the entire trip.



...To the Desktop

Customers may access StarTrak's network directly to manage their reefer fleet or receive direct data feeds of information to their internal information systems.



Specifications

Communicator: 900 Mhz or 2.4 GHz radio frequency system.
 Micro response time: 10 sec.
 Event response time

To base station: 10 sec. typical
 To Network: 30 sec. Typical
 Poll Response time (100 assets):
 Web-Asset-Web: 30 sec. typical
 GPS: 2 minutes typical

RF spread spectrum radius
 900 MHz: exceeds 1 mile
 2.4 GHz: exceeds 200 feet

Dual Mode Operation:

Satellite
 Control Channel Cellular
 GSM/GPRS

Monitoring & Control Information:
 Set Point, On/Off/Shutdown/
 Sleep, Return/Supply Air Temp,
 Discharge Air Temp, Remote
 Temp (multiple), Ambient Temp,
 Remote temperature probes,
 Supply/Discharge control, Fresh
 Air Exchange, IntelliSets, Multi-
 Temp Operation, Engine Hours,
 PM Engine Hours, SnapShot,
 Active Alarms, Clear Alarms, Pre-
 Trip, Inactive Alarms, Alarm List,
 Latitude, Longitude, GeoFence
 reporting,
 Set Electronic Odometer.
 Automatic cab integration,
 Tethered/Untethered.
 Movement/vibration: 3 Axis, -6
 to +6 g. Trigger levels remotely
 settable via communicator link.

Additional I/O usable for optional
 Sensors: Engine hours, fuel,
 actuator/relay switches, specialized
 inputs, level, flow, door security.
 Mechanical: 8 X 4 X 3 inches (other
 form factors available)

Optional Features: Ride quality
 histogram, waveform transmission,
 engine vibration, hydraulics,
 suspension, engine on/off/idle
 detection, brake monitoring.

StarTrak Service to the Transportation Industry

StarTrak has been providing wireless solutions since 1993 to the rail, specialty trailer and container industries. Since 2000, StarTrak has delivered wireless service to the contemporary micro controlled reefer applications

Radio Frequency Solution

ReeferTrak® Scout is a Web-enabled multi-site reefer management tool using contemporary spread spectrum radio frequency technology in the 900 MHz and 2.4 GHz range. Login and download processes to each base station provides point-to-point communications from reefer to Operator instantly. In other words, reefer communications is automatically established to and from the asset whenever it is in range of a customer's base station (nominally 1 mile).

Alarm Routing

Alarms are generated on an exception basis and are delivered real time, 24 x 7, when a unit is within range of a base station. Otherwise, alarms are stored and delivered upon entry into a base station. The customer specifies the important events and alarms, such as low fuel, critical shutdown alarms, maintenance required, dwell time, distance traveled or activities in unauthorized areas. Scout notifies customers of problems prior to having a shipment leave for destination.

ReeferTrak® Scout is a part of StarTrak's comprehensive line of reefer monitoring and control products using satellite, cellular and radio frequency communications.

ReeferTrak® Commander provides real-time, full-authority monitoring and control of reefers (rail, truck, or trailer) with complete coverage throughout North America, Europe and Australia.

ReeferTrak® Sentry provides reefer monitoring and control capabilities in areas of high population density at an exceptional value.



All ReeferTrak® products are configurable with all reefer types. Call StarTrak today to receive the most contemporary solution to your refrigerated transport needs.



**Refrigerated Trailers, Trucks,
 Railcars & Containers**

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