



# EMTRAC

## Central Monitoring System for Transit

The EMTRAC Central Monitoring system enables central-operations personnel to remotely monitor transit vehicle activity and progress in real time, while also enabling vehicles to request signal priority for quick passage through intersections.

With EMTRAC AVL (automatic vehicle location), equipped trains automatically transmit location and activity data to network-connected EMTRAC detectors in wayside cabinets. This data is displayed on central workstation monitors, showing vehicle movement on a map in real-time. Activity is also recorded in detailed logs for later review.



The components used for this system are the same as those used for basic EMTRAC TSP functionality.

### EMTRAC System Components



**Vehicle Computer Unit**

*Onboard unit determines train position, transmits location and activity data, and triggers alerts to operators and central personnel when specified conditions occur.*



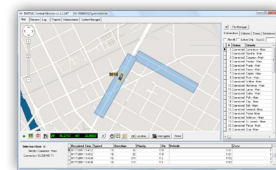
**Onboard Control Head**

*Cab-mounted unit displays activity data in real time and alerts train operators of potentially unsafe conditions, such as excessive speed or insufficient block spacing.*



**Stationary Detector Unit**

*Network-connected unit receives signal-priority requests and transfers train-activity data for display on Central Monitor software. This unit is typically installed in wayside cabinets.*

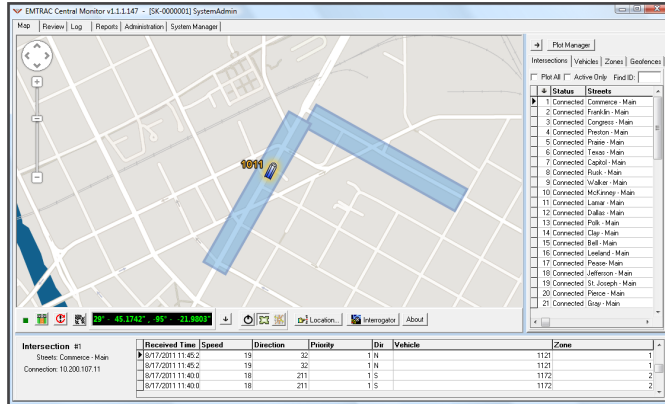


**Central Monitor Software**

*Displays real-time train positions and activity, while also displaying (and recording) detailed activity logs. Alerts may be set to notify central personnel about specific events.*

## Central Monitor Benefits

- **Low-Maintenance:** Wireless-based system requires no in-ground loops or costly switches.
- **Reporting:** Generate detailed status and activity reports, as well as connectivity reports.
- **Safety:** Alert central personnel about potentially unsafe train activity in real time.
- **Timeliness:** Improve schedule adherence and emergency response times by requesting signal priority when agency-specified conditions are met.
- **Security:** Frequency-Hopping Spread Spectrum radio signal has superior range and utilizes AES encryption.
- **Accuracy:** Monitor vehicle activity with precise location data.



## Central Monitor Features

In addition to running the basic EMTRAC system, EMTRAC Central Monitor software offers the ability for central workstations to do the following things:

- Map display of city streets, showing location and activity for multiple equipped vehicles.
- Ability to monitor vehicle “events” by user-definable types. For example, when used for monitoring light rail activity, the system can be set to log stop-bar overruns.
- Audible and pop-up alarms notify control center personnel of critical events (such as a light rail vehicle using an incorrect crossover).
- Automatically generate user-definable reports, which can be automatically saved and emailed daily, weekly, or monthly.



- Verify proper system functionality by monitoring signal controller responses to priority requests.
- Remotely check EMTRAC system diagnostics to verify proper functionality.
- Detect and confirm proper rail crossing-gate closures. If a gate fails to close, an alarm is sent to the control center and train operator, and automatic slowing can occur if desired.