

A black, rectangular Siemens Trainguard PTC unit with a large heat sink on the right side. The front panel features a digital display and several labeled connectors: X1, X2, X3, X4, X5, X6, X7, X8, X9, X10, X11, X12, X13, X14, and X15. The Siemens logo is visible in the top left corner of the image.

SIEMENS

# Trainguard PTC

The Interoperable, Vital PTC Solution for North America

Rail Automation

Siemens Trainguard PTC System is designed on a scalable, vital platform to meet the highest safety standards of the rail industry.

The Trainguard PTC system includes Trainguard PTC On Board Unit (OBU), Locomotive Messaging Server (LMS), Human Machine Interface (HMI), Wheel Speed Sensor (WIG 16P), and Dual GPS Receivers.

Trainguard OBU dynamically calculates the precise braking distance to the next signal or speed restriction with the aid of speed sensor and GPS location determination systems thereby preventing train-to-train collisions, over speed derailments, unauthorized entry into work zones, and train movement through a switch in improper position.

## Features / Benefits

- Compliance with ITC PTC Standards
- Superior braking algorithm
- Vital location determination with a combination of speed sensor and dual GPS receivers
- SIL 4 hardware platform
- Interoperable with ITC PTC compliant sub systems
- Built-in scalability for upgrades and expansions

[usa.siemens.com/rail-automation](http://usa.siemens.com/rail-automation)

# Technical Data

## Trainguard PTC OBU



- Contains vital and non-vital computers
- Runs PTC application that enforces movement authority and speed restrictions
- Supervises train speed and location

|                      |   |
|----------------------|---|
| Temperature Range    | -40 – +158 °F   |
| Size                 | 11.4 x 11.4 x 9.3 inches<br>(Width x Length x Height)   |
| Weight               | Approximately 40 lbs without cables   |
| Power Supply         | Built-in wide-range power supply for<br>24 – 110 VDC<br>Cranking-proof<br>About 80 W power consumption  |
| Connectors           | All connectors on the front side for<br>easy access<br>MIL-style connectors for discrete I/O<br>and serial ports<br>M12 connectors for Ethernet |
| Housing              | Completely sealed, conduction<br>cooled housing, no fans  |
| Degree of Protection | IP 65 / NEMA-4  |
| Mounting             | Compatible with Locomotive System<br>Integration (LSI) racks<br>Alternative mounting possible using brackets                                    |

## Trainguard HMI



- 10.4" locomotive display; 1024 x 768 pixels; -600 / + 350 viewing angle; ambient light sensor
- 8 plus 6 (optional) function keys; dimmer key
- Front panel LED status indicators;
- Configurable audible alarm up to 85 dB

|                      |   |
|----------------------|---|
| Processor Platform   | 1 CPU (ARM Cortex-A8)<br>1 GB Memory                                    |
| Power Supply         | 14.4 – 154 VDC input Voltage  |
| I/O                  | 1 Ethernet  |
| Temperature Range    | -40 to +158 °F (-40 to +70 °C)<br>Cab Interior" according to AAR S-9401 |
| Size                 | W 5" x L 9" x H 5"<br>(W 12.7 x L 22.9 x H 12.7 cm)                     |
| Weight               | 13 lbs (6 kg)   |
| Housing              | Completely sealed, conduction<br>cooled housing, no fans                |
| Degree of Protection | IP 65 / NEMA-4 compliant (front panel)                                  |
| Mounting             | Flush panel mountable<br>Mounting brackets available                    |

## Trainguard LMS



- Runs the Meteorcomm ITCM protocol stack
- Connects the OBU to the locomotive data radio

|                      |  |
|----------------------|--|
| Processor Platform   | Intel Atom, 1.6 GHz<br>RedHat certified hardware for running<br>RedHat Enterprise Linux                |
| Power Supply         | Built-in wide-range power supply for<br>24 – 110 VDC<br>Cranking-proof<br>About 10 W power consumption |
| Temperature Range    | -40 – +185 °F  |
| Housing              | Completely sealed, conduction<br>cooled housing, no fans   |
| Degree of Protection | IP 65 / NEMA-4   |
| Mounting             | Flexible mounting bracket<br>Adapter for LSI-compatibility   |

## Dual GPS Receiver



- Hosts two different GPS receivers for diverse GPS processing
- Improved safety compared to single-channel GPS receivers
- One or two antennas

|                      |   |
|----------------------|---|
| Configuration        | Active or passive antennas<br>Pre-amplified GPS-signal output available<br>for feeding other, non-PTC GPS receivers |
| Temperature Range    | -40 – +158 °F   |
| Weight               | 4 lbs without cables and coupling   |
| Power Supply         | Built-in wide-range power supply for<br>24 – 110 VDC<br>Cranking-proof  |
| Degree of Protection | IP 65   |
| Isolation Voltage    | 1 kVAC  |

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