ELIMINATOR™

BY COLLISION CONTROL COMMUNICATIONS

THE ONLY PATENTED COLLISION AVOIDANCE SYSTEM ON THE MARKET*

OB TRAFFIC

GPS VEHICLE SYSTEM EQUIPMENT

Getting emergency responders to the scene quickly and safely

Description
The Eliminator GPS Traffic Signal Preemption and Collision Avoidance System enables authorized vehicles to preempt equipped intersections, thereby providing them temporary right-of-way via common traffic controller functions. It simultaneously gives collision avoidance warnings of impending collisions with other similarly equipped authorized vehicles.

How it works
The Eliminator GPS Vehicle System equipment is installed in the authorized vehicle. Its GPS receiver obtains information from the constellation of global positioning satellites. In event GPS triangulation is unreliable, the Eliminator Inertial Measurement Unit (IMU) takes over. This information is used to compute the location, speed and heading of the vehicle. This information, along with a priority request, vehicle class, vehicle ID and the status of various vehicle systems (turn signal, light bar, parking brake, etc.) are securely transmitted to nearby intersections (V2I) and similarly equipped vehicles (V2V). This information is transmitted using the Industrial, Science and Medical (900 MHz FHSS) band and is updated and rebroadcast multiple times per second. The Eliminator intersection equipment receives this information and determines at what point the preemption sequence will commence according to parameters that are set in the controller such as minimum pedestrian clearance time, intersection flush time, minimum green time in opposing directions, etc. The intersection equipment can make this determination based on the Estimated Time of Arrival (ETA) of the vehicle or upon whether or not the authorized vehicle has entered the appropriate geo-window corresponding to its approach.

Intersections can be configured separately or globally, if desired. When all parameters are satisfied the corresponding phase selector output is activated. This output is connected to the traffic controller which cycles to grant the green light to the appropriate direction, or holds the green allowing the vehicle(s) to pass through the intersection. Other equipped vehicles also receive information regarding the vehicle's location, speed, heading, priority request, vehicle class, vehicle ID and vehicle system status and, if the vehicles are calculated to cross paths within a narrow collision "window" (5 seconds for example), then each vehicle (equipped with a GUI) receives a collision avoidance alert, a red circle is drawn around the offending vehicle(s) and the time to collision with each is displayed on a countdown clock. The collision avoidance "window" can be individually configured for each vehicle, or done globally if desired.
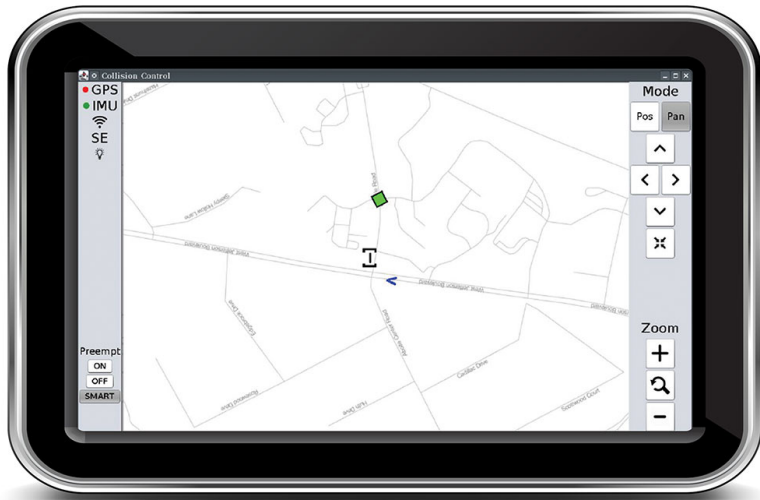
Vehicle Equipment

1. Eliminator™ Model 3300 GPS/Radio Control Unit (Can be programmed for High or Low priority)
   -Dimensions: Length: 8.75 in; 222.25 mm, Width: 5.00 in; 127 mm, Height: 2.25 in; 57.15 mm
   -Weight: 0.83 lb; 376 g

2. Eliminator™ Model 370 7" Touch Screen Graphic User Interface (GUI) (Optional)
   -Dimensions: Length: 7.28 in; 185 mm, Width: 4.80 in; 122 mm, Height: 1.30 in; 33 mm
   -Weight: 0.82 lb; 371 g
   -OR-
3. Eliminator™ Model 371 7" Touch Screen GUI with Ambient Light Sensor (Optional)
   -Dimensions: Length: 7.28 in; 185 mm, Width: 4.80 in; 122 mm, Height: 1.30 in; 33 mm
   -Weight: 0.82 lb; 371 g
   -OR-
4. Eliminator™ Model 340 4.3" Touch Screen GUI (Optional)
   -Dimensions: Length: 5.94 in; 151 mm, Width: 4.57 in; 116 mm, Height: 1.56 in; 39.5 mm
   -Weight: 1.71 lb; 776 g
   -OR-
5. Eliminator™ Model 310 Toggle Switch (If no GUI is used)
   -Length: 1.1 in; 27.94 mm
   -Diameter of mounting base: 0.75 in; 19.05 mm
   -Weight: 0.07 lb; 31.8 g

6. Eliminator™ GPS Model 1350 Puck Style GPS/900 MHz Radio Antenna
   -Height: 4.5 in; 114.3 mm
   -Diameter: 1.25 in; 31.7 mm
   -Coax cable length: 15 ft; 457 mm
   -Weight: 2.20 lb; 998 g

7. Eliminator™ Model 3170 Vehicle Wiring Harness
   -Length: 25 ft; 7.62 m
   -Diameter: 1 in; 25.4 mm (Including corrugated protector)
   -Weight: 1.70 lb; 771 g

8. Eliminator™ Model 320 HDMI cable (Optional, only needed if GUI is used)
   -Length: 16.5 ft; 502.92 cm (or 26.7 ft; 792 mm, if needed)
   -Diameter: 0.25 in; 6.35 mm
   -Weight: 2.1 lb; 953 g

9. Eliminator™ Model 315 Touch Screen GUI Power Cable (Optional, only needed if GUI is used)
   -Length: 16.5 ft; 502.92 cm
   -Wire gauge: 18 gauge; 0.04 in; 1.02 millimeters
   -Weight: 0.40 lb; 181 g

Vehicle System Features

- Color blind friendly Graphic User Interface touchscreen (Optional)
- Ambient Light Sensor automatically dims display when cab is dark (with 7" optional GUI only)
- Operates on 12 VDC
- Less than 2 amps peak current draw
- Inputs for:
  - Left and Right Turn Signals
  - Light Bar/Siren Status
  - Two (2) Configurable "Defeat" Inputs which can be wired to Door Open/Close, Parking Brake, Transmission Status, Seat Belt Status, etc.
- Status Indicators on touch screen GUI for:
  - Reboot
  - GPS
  - IMU
  - 900 MHz FHSS Radio
  - WiFi
  - Compass Heading
  - Left and Right Turn Signals
  - Door Open/Close
  - Transmission Status
  - Siren/Light Bar Status
- All radios are fully FCC licensed and meet FCC Part 15 requirements
- Nearby jurisdictions may be included (for multi-jurisdictional interoperability) or excluded, if desired
- System has 3 modes of operation: ON, OFF, and SMART (hands free)
- Alerts do not require a traffic signal to resolve conflicts, works even in rural areas where no traffic signals are present
- Configurable to detect pulsing lights/siren
- Can use a laptop as a display (Model 3300 GPS/Radio Control Unit still required)
- All functions can be controlled easily through touch screen GUI
- Visual confirmation in vehicle (if optional GUI is used) of traffic signal and collision status
- Dual antenna (GPS and 900 MHz FHSS radio)
- Works reliably under adverse weather conditions (heavy fog, snow, rain, dust)

Vehicle System Features Continued

- Cellular connectivity is not required (avoiding monthly fees)
- FHSS encrypted radio transmissions avoid pirating and interference (no need to exclude or block other vehicles)
- Maps are configurable and can be styled
- Can tie into existing vehicle Internet
- System can be managed easily from a Windows, Linux or Android device with provided radio
- Robust Admin/Tech screens allow for easy programming and troubleshooting
- Turn signal status relayed to nearby intersections, allowing for more intersection flush time, if needed
- Automatic logging (including vehicle tracking, if desired) multiple times per second of vehicle:
  - Position
  - Heading
  - Lightbar/Siren status
  - ON/OFF/SMART mode status
  - Right and Left Turn Signal Status
  - Date/Time
  - GPS/Radio/IMU Status
  - Preemption Status
- Logs easily downloaded from vehicle database wirelessly in simple, easy to read CSV format
- Abuse proof (via ON/OFF/SMART, no screen, or no toggle options)
- Logs can be configured to be downloaded based on date range, or during preemption events only, etc.

Operating Parameters

- Temperature -34 C to + 74 C (-30 F to + 165 F)
- Humidity: 5% to 95% relative
- Each unit comes preprogrammed for High or Low priority
- Technician programmable vehicle ID code/class which is transmitted to nearby intersections and vehicles
- Unlimited number of vehicle ID codes
- Unobstructed transmission distance: two (2) miles

ADVANTAGES	THE ELIMINATOR	THE COMPETITOR
Interactive, touch screen graphic user interface	✔	✘
Collision Avoidance	✔	✘
GPS supported by Inertial Measurement Unit	✔	✘
Touch Screen Graphical User Interface	✔	✘
Operates without GPS signal	✔	✘
Easy Installation	✔	✘
Significantly less expensive than comparable systems	✔	✘
Collision avoidance can be turned on or off on all models	✔	✘
MULTIPLE SCREEN OPTIONS	**THE ELIMINATOR**	**THE COMPETITOR**
No screen option with toggle switch for preemption	✔	✘
7" Screen	✔	✘
4" Screen	✔	✘
Color-blind friendly system & screen	✔	✘
Can use existing Laptop/Tablet as the screen	✔	✘
Can send information to CAD (Computer Aided Dispatch) system	✔	✘