Opticom™ GPS System

Use of Vehicle Turn Signals and Turn Signal Dependant Mode
### Intended Use

The Opticom™ GPS System is intended to assist authorized priority vehicles through signalized intersections by providing temporary right-of-way through vehicle operator interface to the system and through the use of common traffic controller functions. Global Traffic Technologies has not evaluated this product for use in any other application.

### Vehicle Turn Signal Use

When installed in a priority vehicle, the Opticom GPS vehicle equipment should be wired in such a way to allow it to monitor the vehicles turn signal status. This information is broadcast to nearby Opticom GPS equipped intersections. This information may be used to do the following things:

- Relay the priority request to the next adjacent intersection in the direction indicated by the approaching vehicles turn signal.
- Display the left turn arrow only if the approaching vehicle has its left turn signal activated (Turn Signal Dependant Mode).

Therefore, it is recommended that priority vehicles always use their turn signal to indicate their turns at upcoming intersections.

### Turn Signal Dependant Mode Details

Turn Signal Dependant Mode may be implemented at the discretion of the traffic department. In this mode, intersection left turn arrows will likely only be displayed if the priority vehicle driver has activated his or her left turn signal. The following notes should be considered when determining if Turn Signal Dependant mode is to be used. The emergency vehicle drivers should also be made aware of the following notes if Turn Signal Dependant Mode is used

- Depending on intersection configuration and controller programming, an existing through green indication may be terminated and an all red condition may be displayed before the left turn arrow is displayed.
- If several vehicles are approaching from the same direction and the first vehicle detected is not using its turn signal but the others are, it is likely that the left turn arrow will NOT be displayed.
- Left turn signals should be activated as far in advance of the intersection as possible to allow enough time for the left turn arrow to be displayed.
- There may be conditions which cause the left turn arrow to be displayed and dropped repeatedly. The intersection may also display all red lights during these transitions. The following conditions may cause this:
  - The approaching vehicle driver is repeatedly activating and deactivating his or her left turn signal.
  - The approaching vehicle driver uses his or her turn signal to indicate lane changes.
  - The approaching vehicle driver does not activate the left turn signal far enough in advance.
  - The traffic controller is not programmed correctly.
  - The turn signal sense lines are wired incorrectly.
Turn Signal Sense Connections

If turn signal dependant mode is used it is important that the vehicle turn signal sense connections are made correctly.

The turn signal sensing circuit operates by detecting the change of state or flashing of the vehicle’s turn signal circuits.

**Note:**
If the turn signal sense circuit detects both the left and the right signal sense lines changing or flashing, the vehicle equipment will transmit that it is going straight. In this condition the left turn arrow will not be displayed and priority request will not be relayed to the adjacent intersection.

This can be verified by monitoring the turn signal inputs with the View Inputs Sensing screen in ITS Explorer.
1. Activate the left turn signal.
2. Press the brake pedal.
3. If you see the right (opposite) turn signal sense change from active to inactive or vice-versa. You will need to find another place to connect to the vehicles turn signals.

This occurs because; in some vehicles the brake light bulb is shared with the turn signals. If this is the case, applying the brakes while either turn signal is on will cause the turn signal sensing circuit to think that both inputs are active and cause the vehicle to transmit that it is going straight. Therefore it is recommended that the yellow and green turn signal sense lines be connected only to the front turn signal wires.

- Connect the yellow wire from the vehicle interface harness to the vehicle’s front left turn signal line.
- Connect the green wire from the vehicle interface harness to the vehicle’s front right turn signal line.

The same condition will be caused if the vehicle’s emergency flashers are active.

Technical Support

If you have questions, please call the GTT Technical Service Department at 1-800-258-4610.
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Since the availability of the GPS signal is out of GTT’s control and is required for system operations, GTT does not warrant against Opticom GPS system failures due to the unavailability of the GPS signal for any reason.

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