SmartSensor Matrix
Coming to an Intersection Near You

Ian Lee

SmartSensor Family

Advance HD Matrix
SmartSensor Applications

- Freeway/Arterial Management with SmartSensor HD
- Advance Detection with SmartSensor Advance
- Stop Bar Detection with SmartSensor Matrix

Freeway Management
Freeway Management

Monitor a full range of traffic dynamics along any stretch of freeway.

Arterial Management
Arterial Management

Detect vehicles approaching both the upstream and downstream intersections using one sensor.

SmartSensor Applications

1. Freeway/Arterial Management with SmartSensor HD
2. Advance Detection with SmartSensor Advance
3. Stop Bar Detection with SmartSensor Matrix
Advance Detection

Continuously track each vehicle's approach from as far as 500 feet away to dynamically control signalized intersections.
SmartSensor Applications

Freeway/Arterial Management with SmartSensor HD

Advance Detection with SmartSensor Advance

Stop Bar Detection with SmartSensor Matrix

Stop Bar Detection
Stop Bar Detection

Track vehicles in individual lanes and detect true presence at the stop bar, regardless of environmental conditions.

Stop Bar Detection

Complete Coverage

SmartSensor Matrix provides reliable, all-weather, presence detection at the stop bar.

SmartSensor Advance provides safe and efficient dilemma zone protection.

SmartSensor HD provides accurate speed, occupancy and count information for mid-block detection.
SmartSensor Core Technologies

SmartSensor Products are built on the same tested and proven technologies.

True High Definition
SmartSensor HD has five times greater resolution of previous radar traffic detectors

SafeArrival
SmartSensor Advance monitors estimated time of arrival at the stop bar for improved intersection safety

Radar Vision
SmartSensor Matrix creates a high-contrast, two-dimensional radar image to track and detect vehicles

SmartSensor Matrix
SmartSensor Matrix
Reliable Presence Detection

SmartSensor Matrix is a corner radar with a 90° field of view. Vehicles that enter the user-defined zones within this field of view alert the controller with a presence detection.

SmartSensor Matrix
Radar Vision

SmartSensor Matrix uses Radar Vision to track vehicles as they approach the stop bar.

Radar Vision produces a high contrast image regardless of environmental conditions.
SmartSensor Matrix
Matrix of Radars

Free-moving, single-point vehicle representations pin point reference locations
Vehicle ‘tracks’ simplify lane and stop bar placement
Simple Configuration
• Auto-configuration
• Traffic Visualization
• Drag functionality
SmartSensor Matrix
Detection Display

Vehicle representations move with actual traffic
Zone and channel actuations match sensor outputs
Vehicle and queue-lengths are shown

SmartSensor Matrix
Controller Integration

SmartSensor Matrix provides a standard interface to traffic signal controllers.

Four channel outputs
Contact closure input file cards
Up to eight detection zones
SmartSensor Matrix
Pre-assembled Traffic Cabinet Back Plate

AC Components:
• Circuit Breaker
• Surge Protection
• DC Conversion

Input Power
Terminal Blocks

Channel Mounts

Surge Protection for Sensor Cables
Connectors for Additional Communication Devices
Devices Pre-wired to Terminal Blocks
Terminal Blocks Color Coded to Sensor Cable

SmartSensor Matrix
Mounting Location

Preferred
Mount overhead and below mast arm
• Line-of-sight coverage
• Use full 100-foot range
• Unoccluded view of left hand turn lanes
• Six-foot offset required

Alternate – Small Intersections
Mount roadside and below mast arm
• Line-of-sight coverage
• Minimal traffic disruption
• Unoccluded view of left-hand turn lanes

Alternate – Flexibility
Mount roadside and above mast arm
• Minimal traffic disruption
• Higher mounting avoids occlusion of left-hand turn lanes
• Six-foot offset required
SmartSensor Matrix

<table>
<thead>
<tr>
<th></th>
<th>SmartSensor Matrix</th>
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<tbody>
<tr>
<td>View: 90°</td>
<td>Lane Discrimination</td>
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<tr>
<td>Range: 100 ft</td>
<td>True Presence</td>
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<tr>
<td>Visualization: Two-Dimensional Image</td>
<td>All Weather</td>
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<tr>
<td>Max Zones: 8</td>
<td>All Lighting Conditions</td>
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<tr>
<td>Max Contact Closure Outputs: 4</td>
<td>Simple Configuration</td>
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Contact Twincrest Technologies to arrange a roadside demonstration
Thank You

Questions?