The OSPOCx Family Optical Signal Processor

The model OSPOCx family Optical Signal Processor (OSP) is the first OSP offered by TOMAR that receives and decodes *GTT OPTICOM-brand coded emitter signals. Installed inside the traffic cabinet, the OSPOCx family provides power for Tomar DETOCxx and/or GTT OPTICOM 7xx Optical Detectors, receives, decodes and prioritizes signals from the detectors, logs preemption and priority control activity, communicates with other traffic control devices, and optically isolates the preemption channels.

The OSPOCx family is delivered default programmed to respond on a first-come, first-served basis to optical signals from vehicles within two signal bands. Emergency band signals are typically emitted by emergency vehicles to effect a preemption of normal traffic control timing and are given the highest priority to allow rapid emergency response with enhanced safety. Transit band signals are generally emitted by transit or other non-emergency municipal vehicles to effect a priority change for the vehicle's approach direction without necessarily interrupting traffic control timing. Up to 9,999 vehicles in each signal band can be individually identified.

Using a simple Windows-based configuration program, the user can define up to 10 additional classes within each signal band with different priorities, detection ranges, and choices of actions, from simple logging to full traffic preemption.

Equipped with an Ethernet port and the ability to classify and announce the presence of multiple vehicles in real-time, the OSPOCx family makes an excellent intelligent vehicle sensor for ITS applications.

The OSPOCx family OSP is compatible with NEMA TS-1, TS-2, and CA/NY 170, and 2070 controllers and meets all NEMA and CalTrans environmental requirements. The OSPOCx family plugs directly into a 170 input file without any additional hardware and does not use the internal 24VDC cabinet power. For NEMA cabinets without prewired preemption slots, the TOMAR model 1881 rack provides the necessary hardware and harnessing to allow simple connection to detector outputs and controller inputs.

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TOMAR Electronics, Inc.
Clearing the Way

The TOMAR OSPOCx Family Optical Signal Processor offers the following features and benefits:

Plug-and-Play Firmware allows the ability to add accessories in the field without manual configuration. This allows you to buy only what is needed today and add more capability later, saving precious funds.

Active Reflection Suppression prevents cross street preemption due to reflected emitter technology. Only TOMAR's advanced, digital signal processing can eliminate this troublesome side effect making system installation and setup far less critical.

Expansion Port provides easy connection of the OSPOCx family to other accessory modules like green phase monitors, confirmation light drivers, and external preemption adapters for controllers that do not have internal preemption software.

- 9,999 vehicles per band and over 14,000 log records standard
- Built-in Ethernet port providing a full-featured TCP/ IP stack, with enterprise grade security features, for configuration, diagnostics, and log information retrieval.
- Firmware upgradable remotely via Ethernet port for simple future feature additions
- Fully supports OSPsoft and OSPtrack3 software via Ethernet
- Universal AC input voltage
- Enhanced transient/lightning protection
- Short-circuit proof detector power
- Simplified front panel interface
- Compatible with GTT OPTICOM coded emitters with decode capability for all OPTICOM vehicle ID's in all 10 classes for both command and advantage priorities
- Compatible with Tomar coded emitters for both command and advantage priorities
- Compatible with all un-coded emitters, including GTT, Tomar, and Whelen
- Supports Tomar DETOCxx and GTT OPTICOM 7xx Optical Detectors, including mixed systems utilizing both detector types

Specifications for OSP Card

Item	Description
Signal	The OSPOCx family shall be capable of receiving, decoding and prioritizing OPTICOM-brand formatted Emergency and Transit priority signals transmitted by all TOMAR and competitive emitters. The system shall be software configurable to accept or reject non-identifying optical signals. Classes 0-9 and codes 0-999 in each signal band can be individually identified.
Signal Acquisition Time	Typical signal acquisition time shall be approximately 2.5 seconds. Acquisition time will vary depending upon the number of signals present simultaneously and on the density of optical noise.
Range	2500 feet maximum adjustable down to 200 feet in 255 steps for each signal band.
Range Adjustment	Range adjustment shall be accomplished via front panel switches and emitter or via software configuration.
Priority Determination	The OSPOCx family shall be delivered with default priority grouping, responding on a first-come, first-serve basis to signals within each signal band. Signals in the Emergency signal band shall be given priority over signals in the Transit signal band. Optionally, the user shall be able to define additional priority classes within each signal band. Up to 10 priority groups within each signal band may be defined.
Event Logging	The system shall log all valid and invalid preemption events including the time, date, and duration of event. The logging capacity of the card shall be a minimum of 14,000 events. The oldest events shall be discarded when newer events are received. The number of events to be stored shall be expandable by adding additional memory. The stored logs shall be downloadable via Ethernet port.
Output Signals	The OSPOCx family shall provide four optically isolated output channels for placing calls on the traffic controllers preempt inputs. All output signals shall comply with NEMA signal level definitions.
Control Timers	Each channel shall be equipped with 3 control timers described as: MAX CALL: Sets the maximum time a preempt call is allowed to be active. CALL EXTENSION: Sets the time a call is held after the optical signal terminates. CALL DELAY: Sets the time a call must be pending before the assertion of the call to the controller.
Electrical Requirements	120/240 VAC 50/60HZ
Temperature Range	-40 degrees Celsius to +75 degrees Celsius
Transient Protection	Input power is MOV protected from line transients.
Fusing	Input power connections are fused at 1/2 amp to prevent cabinet wiring damage in the event of an electrical failure.