

TOMAR ELECTRONICS, INC.

Model T792HL/T792HL-R Emitter Installation & Operation

ATTENTION

OPTICAL PREEMPTION SYSTEMS ARE DESIGNED TO AID IN THE TRANSIT OF DESIGNATED VEHICLES THROUGH THE TRAFFIC CONTROL SYSTEM, TO THEIR DESTINATIONS.

IT IS IMPERATIVE THAT THE DRIVERS OF EACH TYPE OF VEHICLE THAT USES A PREEMPTION SYSTEM BE MADE AWARE OF THE RESPONSE HE CAN EXPECT FROM THE TRAFFIC CONTROL SYSTEM.

IT IS THE RESPONSIBILITY OF THE CUSTOMER TO CONFIGURE THE SYSTEM'S RESPONSE TO EACH VEHICLE TYPE AND TO EDUCATE EACH DRIVER TO EXPECT THE APPROPRIATE RESPONSE FROM THE SYSTEM.

AT NO TIME SHOULD A DRIVER OF A VEHICLE EXPECT THAT HE IS GUARANTEED TO RECEIVE PROTECTED RIGHT-OF-WAY THROUGH TRAFFIC INTERSECTIONS. DRIVERS OF VEHICLES THAT WILL OPERATE OUTSIDE OF THE NORMAL TRAFFIC LAWS AND CONVENTIONS MUST ALWAYS TAKE RESPONSIBILITY FOR ENSURING THE SAFE PASSAGE OF HIS VEHICLE THROUGH AN INTERSECTION REGARDLESS OF THE OPERATION OR NON-OPERATION OF THE PREEMPTION SYSTEM.

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Model T792HL/T792HL-R Emitter Installation Instructions

1. MODEL T792HL/T792HL-R EMITTER DESCRIPTION

The Model T792HL/T792HL-R emitter is mounted on a vehicle and transmits vehicle identification information, to suitably equipped intersections, via optical pulses. The T792HL/T792HL-R includes continuous diagnostic monitoring to ensure its proper operation.

The T792HL emitter is self-contained and modular, consisting of the T792HL-HOUSING, RECT-37SWP-C Lamp, EMIT3-CONTCBL, and EMIT3-SWITCH. The RECT-37SWP-C is the only component that requires routine maintenance and is easily field-replaceable.

The RECT-37SWP-C consists of a xenon arc tube mounted in a metallized, polycarbonate reflector and then linear vibration welded to an optically clear polycarbonate cover creating a hermetically sealed assembly.

The T792HL-HOUSING is a black, glass-filled, UV-stabilized polycarbonate shell. The RECT-37SWP-C is secured into the T792HL-HOUSING with four stainless steel screws. Optionally, a RECT-37-VLF visible light filter can be fitted over the lamp, rendering the operating emitter signal virtually invisible.

The T792HL-HOUSING contains a power supply that is completely encapsulated in polyurethane, and is equipped with automotive waterproof connectors to ensure a long, stable, life even in the most adverse environmental conditions. The power supply is RFI filtered, polarity protected, and damage proof from mis-wiring during installation.

The T792HL-R emitter is designed for use when the emitter power supply and lighthouse need to be mounted in separate locations. It consists of the T792HL-R-PS power supply, RECT-37SWP-C lamp, EMIT3-CONTCBL, 3C-WP2 cable, and EMIT3-SWITCH.

The emitter's vehicle code is programmed via a PC compatible computer either at the factory or in the field. The T792HL/T792HL-R emitter can be reprogrammed thousands of times without disassembly.

The EMIT3-CONTCBL connects the T792HL power supply to the EMIT3-SWITCH, an optional customer supplied door or parking brake switch, and the vehicles electrical power. The EMIT3-CONTCBL is

equipped with a mating sealed connector for attaching to the T792HL-HOUSING (T792HL) or T792HL-R-PS (T792HL-R) assembly.

The EMIT3-SWITCH provides a method of turning the T792HL/T792HL-R emitter on and off and includes an LED that provides positive visual feedback that the T792HL/T792HL-R is on AND operating normally.

2. T792HL/T792HL-R CODED EMITTER INSTALLATION

REFER TO TOMAR DRAWING #14656 (ATTACHED) FOR EMITTER INSTALLATION AND WIRING PICTORIAL DETAILS.

2.1 T792HL INSTALLATION

For optimum range and best performance, mount the T792HL emitter on top, or near the top, of the vehicle so that its signal is most likely to be seen over the tops of other vehicles in front.

Drill a 1/2" hole through the surface to which the emitter will be mounted. The mounting surface should be strong enough to adequately support the emitter and retain the emitter in case of a vehicle accident.

Mounting the emitter to an inadequate surface could allow the emitter to become loose in an accident and possibly impact a vehicle passenger, causing injury. IT IS THE INSTALLERS RESPONSIBILITY TO INSURE THE EMITTER IS SECURED ADEQUATELY.

If mounted outside the vehicle, drill a 1-1/4" hole to allow the model EMIT3-CONTCBL to pass into the vehicle. **DO NOT CUT THE CONNECTOR ON THIS CABLE OFF. THE CONNECTOR IS NEEDED FOR PROGRAMMING THE EMITTER.**

Secure the emitter using the supplied 7/16" stainless steel hardware. Point the emitter in the direction of forward vehicle travel and aim the emitter up just a few degrees to point at the detectors mounted in the intersections.

Engage the EMIT3-CONTCBL connector to the mating connector on the T792HL emitter. This connector is waterproof and can be operated outside

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the vehicle if desired. Be sure to adequately secure the EMIT3-CONTCBL.

Run the other end of the EMIT3-CONTCBL through the vehicle to the location where the EMIT3-SWITCH will be located. If the EMIT3-CONTCBL penetrates any vehicle panels, take care to protect the cable from abrasion of the insulation.

Mount the EMIT3-SWITCH bracket in a location visible to the operator, using the supplied hardware.

Snap the rocker switch into the EMIT3-SWITCH bracket.

Following Tomar drawing 14656, included with this document, connect the EMIT3-CONTCBL to the EMIT3-SWITCH as shown.

Disconnect the vehicle battery and make the final power connections from the EMIT3-CONTCBL, the included 10-amp fuse, and the vehicles door or parking brake switch (customer supplied), to the vehicles electrical system.

Reconnect the battery and operate the EMIT3-SWITCH to the ON position.

Observe the emitter lamp for flashing, and verify that the indicator LED on the EMIT3-SWITCH is ON steady.

Activate the vehicle door or parking brake, and verify that the emitter stops flashing. The LED in the EMIT3-SWITCH should blink at a slow .5 Hz rate to indicate the T792HL has been disabled.

Return the EMIT3-SWITCH to the OFF position. Installation is complete.

If the LED in the EMIT3-SWITCH flashes at a fast 2 Hz rate during testing, refer to Section 5. — T792HL/T792HL-R Emitter Troubleshooting for assistance.

2.2 T792HL-R INSTALLATION

For optimum range and best performance, mount the RECT-37SWP-C lamp on top, or near the top, of the vehicle so that its signal is most likely to be seen over the tops of other vehicles in front.

Mount the RECT-37SWP-C lamp to the vehicle with an appropriate mounting bezel or inside an emergency lightbar. The lamp, connector, and cable are 100% waterproof.

Secure the T792HL-R-PS power supply in a suitable location inside the vehicle. **THE POWER SUPPLY MUST BE MOUNTED IN SUCH A WAY THAT IT CANNOT BECOME LOOSE AND IMPACT VEHICLE PASSENGERS IN THE EVENT OF AN ACCIDENT.**

Engage the EMIT3-CONTCBL connector to the mating connector on the T792HL emitter. This connector is waterproof and can be operated outside the vehicle if desired. Be sure to adequately secure the EMIT3-CONTCBL. **DO NOT CUT THE CONNECTOR ON THIS CABLE OFF. THE CONNECTOR IS NEEDED FOR PROGRAMMING THE EMITTER.**

Run the other end of the EMIT3-CONTCBL through the vehicle to the location where the EMIT3-SWITCH will be located. If the EMIT3-CONTCBL penetrates any vehicle panels, take care to protect the cable from abrasion of the insulation.

Mount the EMIT3-SWITCH bracket in a location visible to the operator, using the supplied hardware.

Snap the rocker switch into the EMIT3-SWITCH bracket.

Following Tomar drawing 14656, included with this document, connect the EMIT3-CONTCBL to the EMIT3-SWITCH as shown.

Disconnect the vehicle battery and make the final power connections from the EMIT3-CONTCBL, the included 10-amp fuse, and the vehicles door or parking brake switch (customer supplied), to the vehicles electrical system.

Reconnect the battery and operate the EMIT3-SWITCH to the ON position.

Observe the emitter lamp for flashing, and verify that the indicator LED on the EMIT3-SWITCH is ON steady.

Activate the vehicle door or parking brake, and verify that the emitter stops flashing. The LED in the EMIT3-SWITCH should blink at a slow .5 Hz rate to indicate the T792HL-R has been disabled.

Return the EMIT3-SWITCH to the OFF position. Installation is complete.

If the LED in the EMIT3-SWITCH flashes at a fast 2 Hz rate during testing, refer to Section 5. —

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T792HL/T792HL-R Emitter Troubleshooting for assistance.

3. T792HL/T792HL-R EMITTER OPERATION

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Activate the T792HL/T792HL-R emitter by operating the EMIT3-SWITCH to the ON position. The LED on the EMIT3-SWITCH should display a steady condition indicating the emitter is operating properly.

If the EMIT3-SWITCH is in the ON position but the LED on the EMIT3-SWITCH blinks slowly at a .5 Hz rate, the emitter may be in disable mode because the vehicle door is open or the parking brake is set. Once the door is closed or brake released, the T792HL/T792HL-R should operate.

If the LED on the EMIT3-SWITCH begins to flash rapidly at a 2 Hz rate, the emitter lamp is getting old and is missing flashes. In this condition, the transmission of vehicle identification and preemption request is unreliable. The emitter may be left on, but the driver should understand that the intersection may not be able to decode the vehicle's emitter, and

may not give the vehicle the expected response. The emitter should be serviced as soon as possible.

After activation of the emitter and verification of a steady burning indicator, no further operator intervention is required. The emitter will continuously emit the vehicle's programmed code during the vehicle's travel.

4. T792HL/T792HL-R EMITTER MAINTENANCE

The T792HL/T792HL-R emitter should be inspected for proper operation at the beginning of every vehicle shift.

Visually confirm the solid illumination of the LED on the EMIT3-SWITCH and if possible the flashing of the emitter lamp.

Monthly, the emitter lamp should be visually inspected. Any arc lamp that is blackened over more than 30% of its length should be replaced.

If the LED on the EMIT3-SWITCH flashes quickly at a 2Hz rate, indicating a lamp that is beginning to misfire due to age, the emitter system should be taken out of service and the emitter lamp replaced immediately.

5. T792HL/T792HL-R EMITTER TROUBLESHOOTING

When a report of system failure is received from the field, the StrobeCom II system must be analyzed and the source of the failure repaired. The major components of the StrobeCom II system have self-diagnostic functions that aid in troubleshooting.

The T792HL/T792HL-R emitter is equipped with a monitoring system that continuously checks for the proper operation of the emitter lamp.

Troubleshooting the emitter is required when the status indicator located on the emitter control switch is flashing.

An indicator flashing quickly at a 2Hz rate indicates that the emitter lamp is reaching end of life and is beginning to miss flashes. Immediately replace the emitter lamp.

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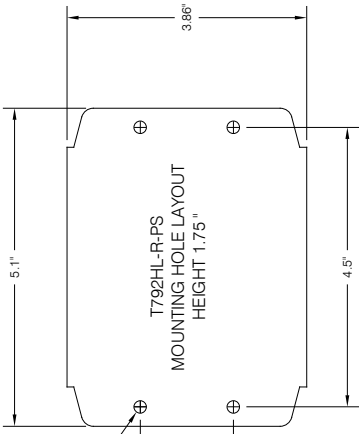
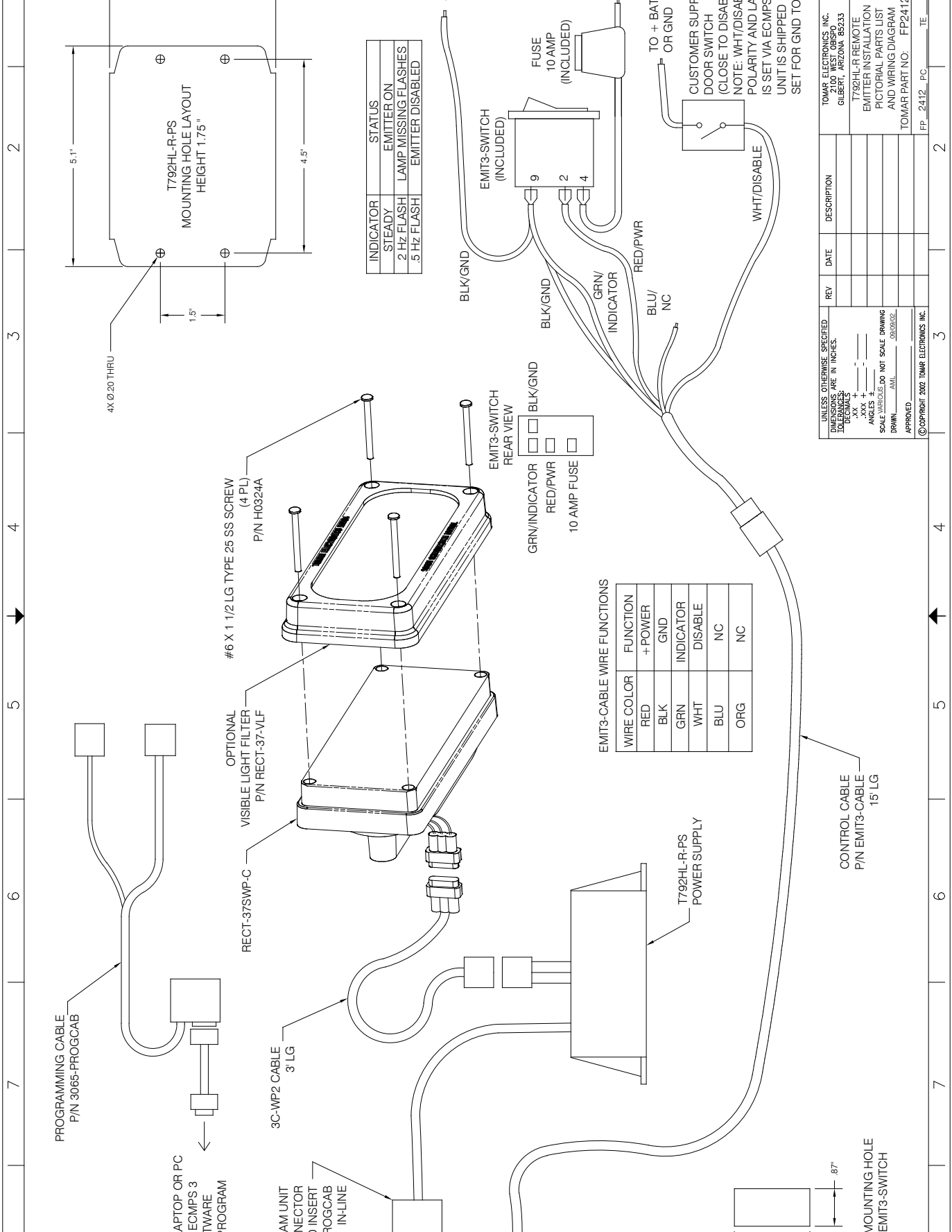
THE EMITTER LAMP IS UNRELIABLE AND MAY NOT INITIATE PREEMPTION IN THIS CONDITION AND SHOULD BE SERVICED IMMEDIATELY.

If the EMIT3-SWITCH is activated but the LED indicator does not illuminate, or the emitter does not generate a signal, check the following items.

- 1) Check the 10-amp fuse.
- 2) If the 10-amp fuse is OK, measure the voltage to the RED wire of the EMIT3-CONTCL. With the EMIT3-SWITCH in the ON position, vehicle battery voltage should be applied.
- 3) Check all wiring for damage.
- 4) If all above fail replace the T792HL-HOUSING or T792HL-R-PS power supply with a known good unit. Return the defective power supply to Tomar Electronics, Inc. for service.

If the EMIT3-SWITCH is activated and the LED on the EMIT3-SWITCH flashes slowly at a .5 Hz rate, check the following items:

- 1) Check the door or parking brake cut-out switch for proper operation.
- 2) Check the wiring to the door or Parking brake switch.



INDICATOR	STATUS
STEADY	EMITTER ON
2 HZ FLASH	LAMP MISSING FLASHES
.5 HZ FLASH	EMITTER DISABLED

WIRE COLOR	FUNCTION
RED	+POWER
BLK	GND
GRN	INDICATOR
WHT	DISABLE
BLU	NC
ORG	NC



UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
DIMENSIONS IN PARENTHESES
ARE IN DECIMALS
ANGLES ± .XXX °
SCALE VARIABLES DO NOT SCALE DRAWING
DRAWN: _____ DATE: 09/09/02
APPROVED: _____
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TOMAR ELECTRONICS INC.
1000 N. GARDNER ROAD
GILBERT, ARIZONA 85233
T792HL-R REMOTE
EMITTER INSTALLATION
PICTORIAL PARTS LIST
AND WIRING DIAGRAM
TOMAR PART NO: FP2412

REV	DATE	DESCRIPTION
1		

DRAWING NO. REV 14656 00
SHT. OF 1

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