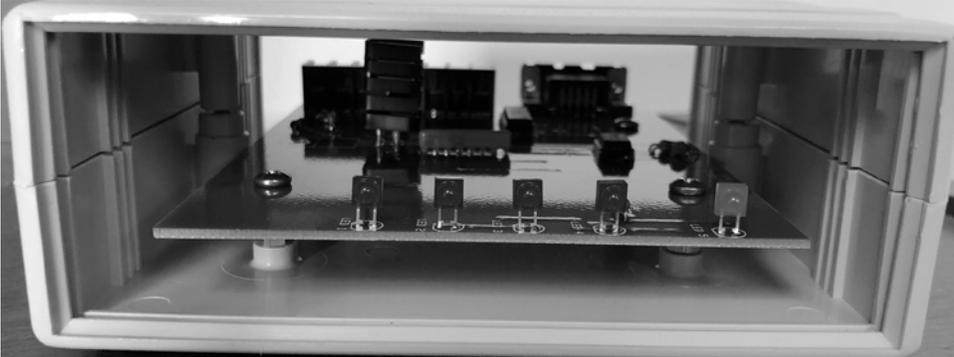# TrafInfo Signal Priority Relay (TSPR)

The TrafInfo Signal Priority Relay (TSPR) provides a cost-effective method to implement Transit Signal Priority (TSP) capability at a NEMA traffic signal cabinet.

The TSPR provides an interface between a standard 4G/LTE cell modem such as Sierra Wireless® Airlink® RV-50X mobile gateway and a NEMA traffic signal controller. The RV-50X modem interfaces with the TSPR via RS-232 to activate transit signal priority on any of the four (or six) standard priority input terminals on the back-plane of a standard NEMA TS2 cabinet.

When transit signal priority is desired, an AT command is sent to the cell modem requesting the approach/signal phase desired. The TSPR receives the AT command and generates an oscillating signal at the corresponding priority input terminal to the approach/signal phase on a standard NEMA cabinet backplane. The traffic signal controller receives the TSP request and transitions into priority control based on the TSP controller programming settings. When a second AT command canceling the request is sent, the TSPR stops the oscillating signal which in turn terminates the priority input to the traffic signal controller.

Power Requirements
The TSPR is powered using a custom AC power supply which supplies power to both the RV-50X cell modem and the TSPR.

Interfaces
1. <u>9-pin DB connector (female)</u>: This is connected to a 9-pin DB connector on the RV-50X cell modem to receive the AT commands from the modem.
2. <u>5-pin Screw Terminal</u>: Pins 1 through 4 are connected to priority inputs terminals 1 through 4 in a NEMA traffic signal cabinet. Pin 5 is connected to GND terminal in a NEMA traffic signal cabinet.

Environmental		**Mechanical**	
Operating Temp:	-30°C to +60°C	Dimensions:	2" x 2" x ½ "
Humidity:	85% non-condensing	Weight:	0.5 Oz

AC Adapter
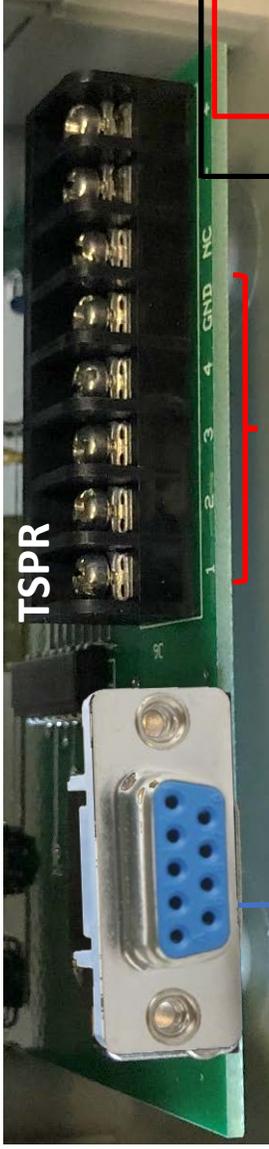
Negative(-)
Positive(+)
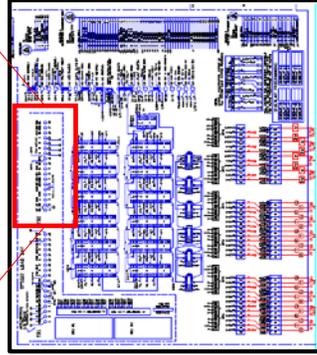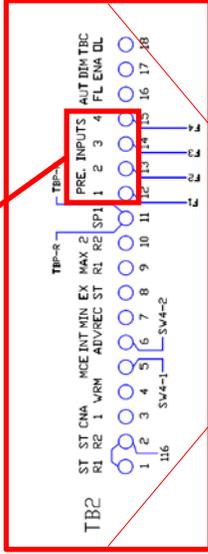
DC Power Cable

RV-50X
Cell Modem

9-pin Serial Cable

NEMA CABINET BACK-PLANE

TSPR

GND NC

TB2

TBP-R

ST ST CNA MCE INT MIN EX MAX 2
R1 R2 1 WRM ADVREC ST R1 R2 SP1

PRE. INPUTS
1 2 3 4

AUT DIM TBC
FL ENA DL