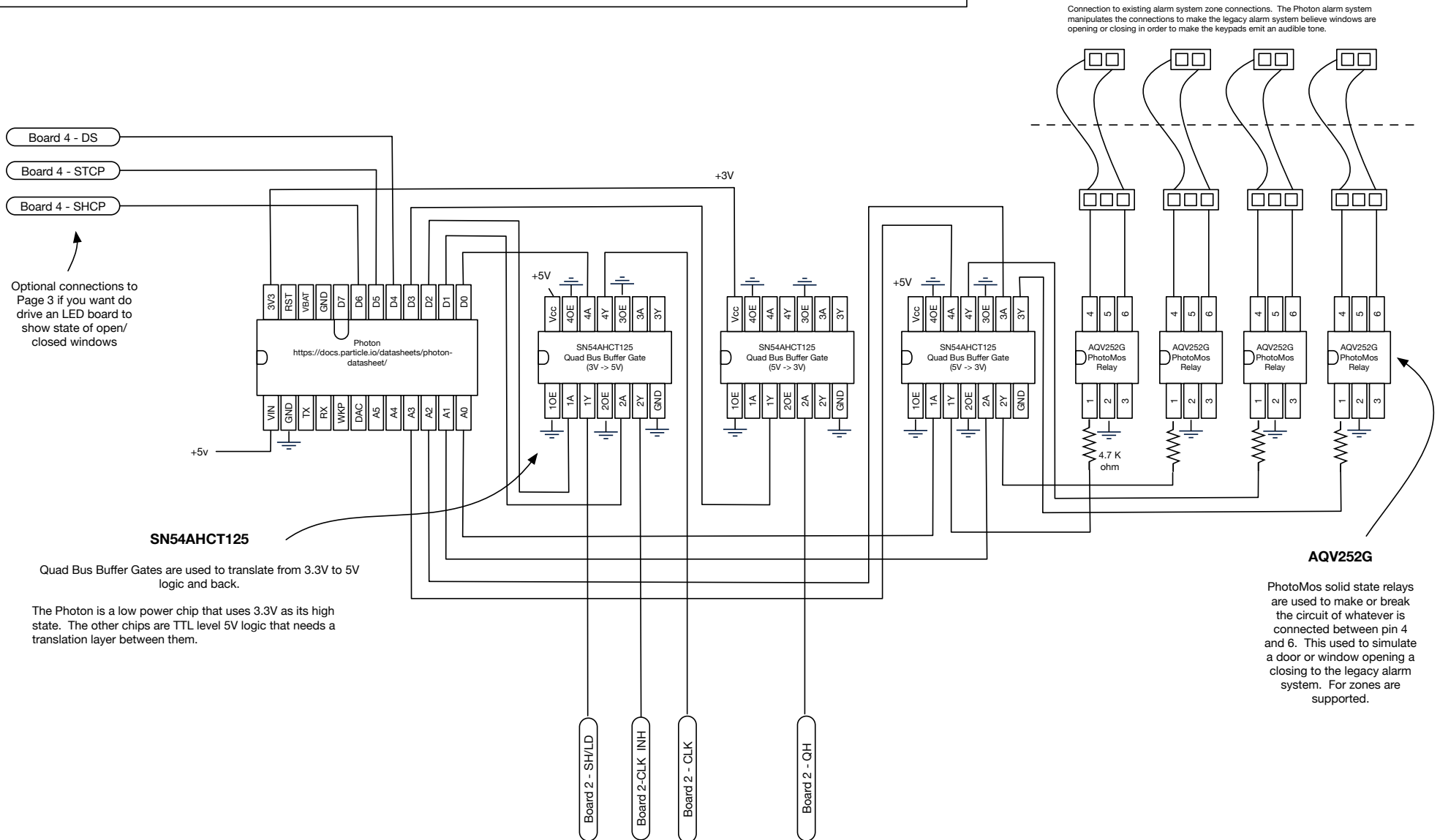


# Photon Based 48 Channel Alarm System

## Main Logic Board, Level Shifters, Photo Relay Passthrough

### Board 1

T.Vernon  
8/8/17

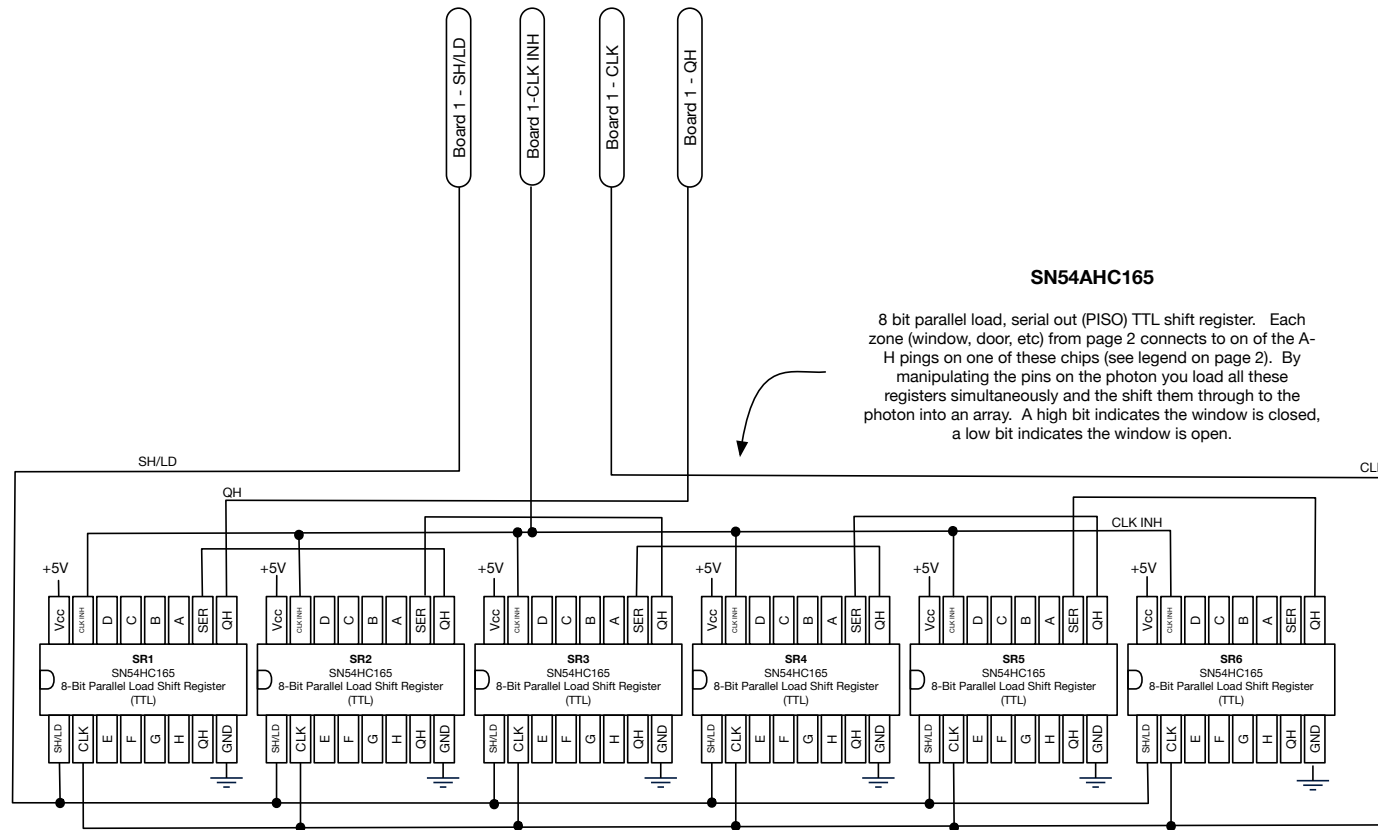


# Photon Based 48 Channel Alarm System

## Zone Input Shift Register Board

### Board 2

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8/8/17



# Photon Based 48 Channel Alarm System

## Zone Input Header Board

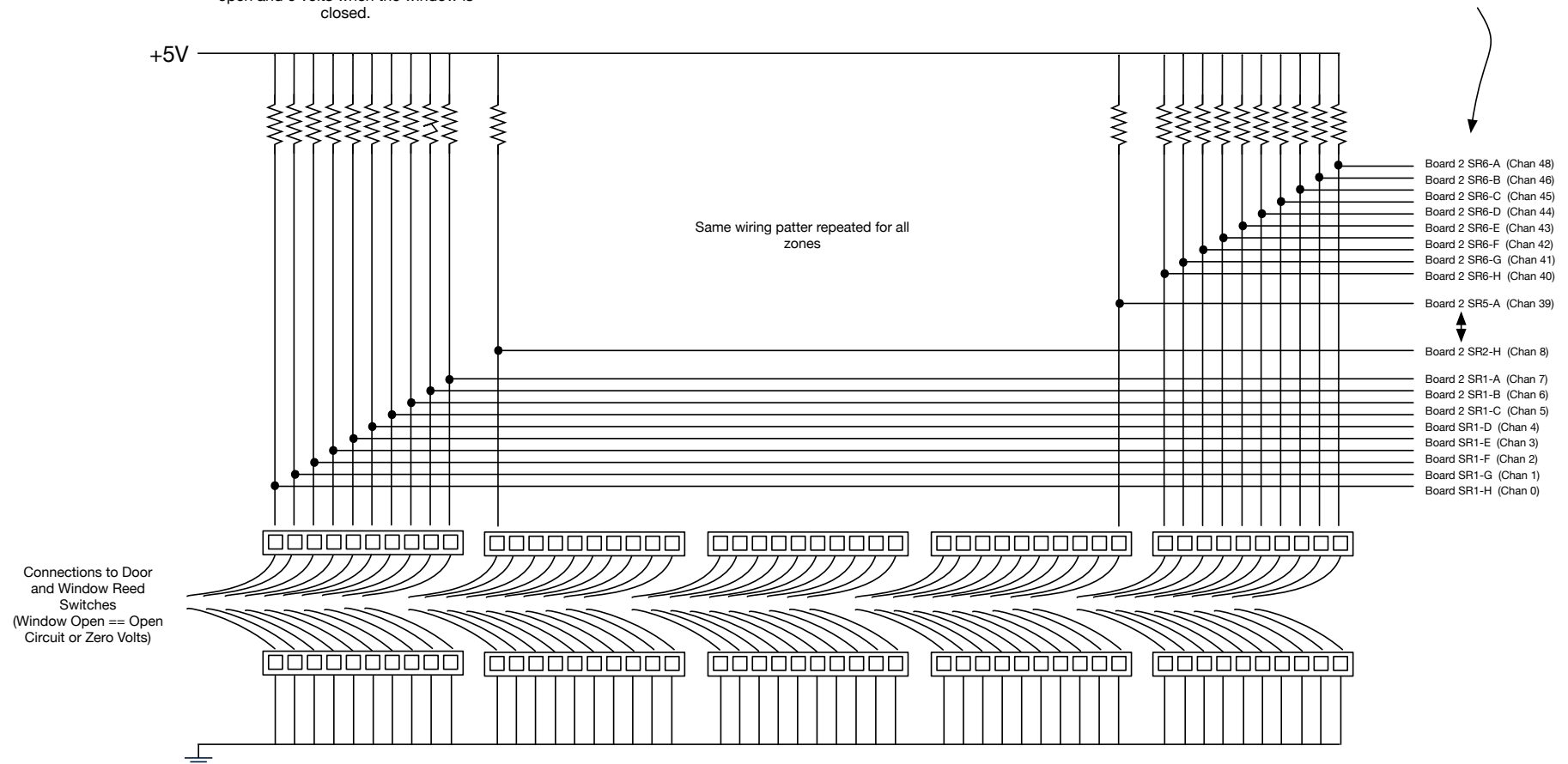
### Board 3

T.Vernon  
8/8/17

The header board contains screw down contacts to connect the wires coming from the zone reed switches.

The pull-up resistors ensure that the shift registers on page two see a true +5 volts when the window or door is open and 0 volts when the window is closed.

Each zone is connected to the correct shift register pin on page one via this key. Unused zone need to be ignored in software, or jumped in the connection block or the zone window or door will appear open to the software.



# Photon Based 48 Channel Alarm System

## LED Zone Display Board (Optional)

### Board 4

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#### SN74HC595

8 bit serial load, parallel out TTL shift register. 48 bits are shifted into the register cascade via pins on the photon by way of the level converter Quad buffer gate. Each bit represents zone (window, door, etc). I used green LED's and shift one's into the register to indicate that the window is closed and lighting the green led. shifting a zero into will turn off the led indicating the window is open. One could reverse the logic using Red LED's or Yellow LED's and display positive indication of a window open rather than closed.

#### SN54AHCT125

Quad Bus Buffer Gates are used to translate from 3.3V to 5V logic and back. This Chip translates 3.3V logic to 5V logic to load the shift registers to light the LED's

Optional connections from the Photon on page 1 to connect to this LED display board.

