



## Hi-Z Wireless Remote Switch Control Set Hi-Z W/L Manual

**PLEASE READ this manual completely before installation. In this manual the W/L reference means Wireless.**

New from Hi-Z Antennas is a pair of boxes that function as a remote switch. These boxes provide all the switching functions to remotely switch any of the Hi-Z Antennas receiving arrays. They can also be used for most other remote switching requirements that require a ground condition for actuation. There are 8 active inputs to the transmitter box that require a ground condition for activation. Grounding any of these inputs will subsequently result in the corresponding output to be grounded on the receiver box.



Hi-Z Wireless utilizes an internal antenna which provides a nominal 1000 foot range in wide open unobstructed conditions. These units operate using the Zigbee Xbee chips for excellent performance.

The front panel has a red LED power indicator as well as a 4 LED signal strength indicator. The yellow LED indicates solely that the unit has picked up a signal but does not guarantee the unit will properly decode. Each successively lit LED in the green beyond the first yellow one indicates nearly 10dB increase in signal strength. The units should work very reliably with at least one green LED lit.

### Specifications:

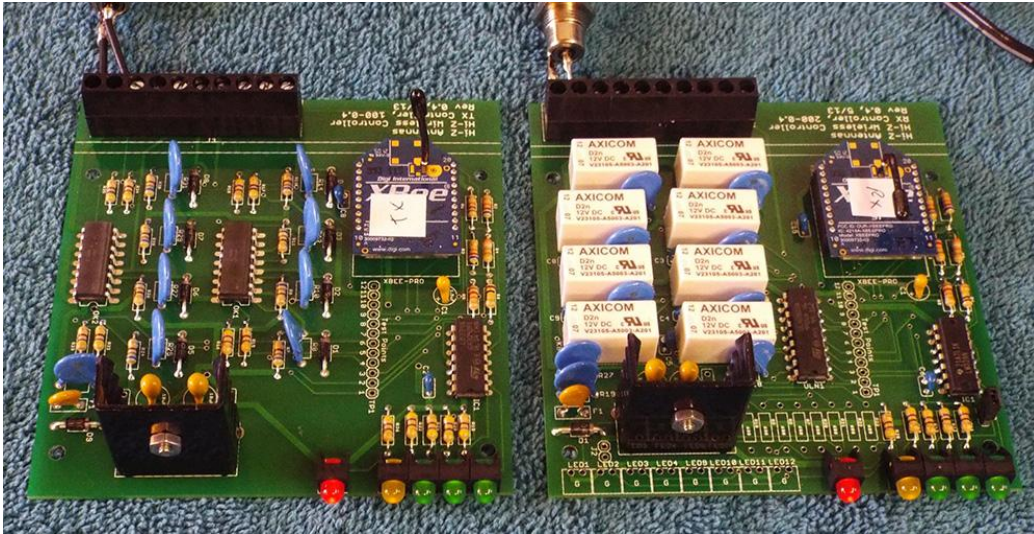
- 8 points of control
- Contacts rated to 1 amp

### OPTIONS:

- PI-100 Hi-Z Power Injectors – power up remote Hi-Z RX arrays and Wireless system over RG6 Coax

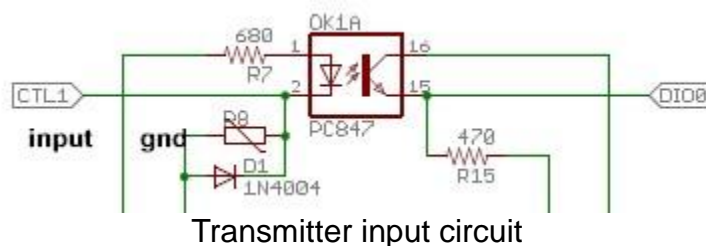
## USES:

1. All Hi-Z Antenna products
2. Remote Coax Switches
3. Any remote device – 8 discrete points of wireless control – relay isolated



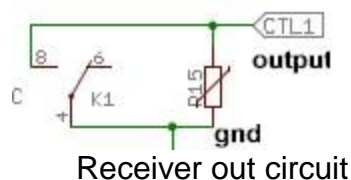
The screw terminals allow for the application of +13.8VDC and Ground as well as the switching in/out connections. These units will operate from 11 to 14.8VDC. These units operate on about 200 ma DC current.

The transmitter input connections require a grounded input to actuate the receiver grounded output. The transmitter input connections are protected with both a 15 Volt MOV and a 1N4004 reverse polarity protection diode. The inputs when grounded activate the internal LED in an optical isolator ensuring all external switching transients have isolation. The current sink requirements for one of the transmitter inputs is less than 20ma when at ground or zero volts.



## Hi-Z Wireless Remote Switch Set

The receiver output circuit is a relay protected with an 18Volt MOV. The receiver switches the relay output to ground when activated by the transmitter.



The receiver output relay can handle 1 amp DC and the switching voltage is limited to 14.8 VDC by the protective MOV in the circuit.

Switching from input on the transmitter to activation at the receiver output is almost instantaneous with less than 0.1 second delay. These Xbee Pro units operate on Channel D with a PAN ID of 20. These are FCC part 15 devices operating in the 2.4 GHz band.

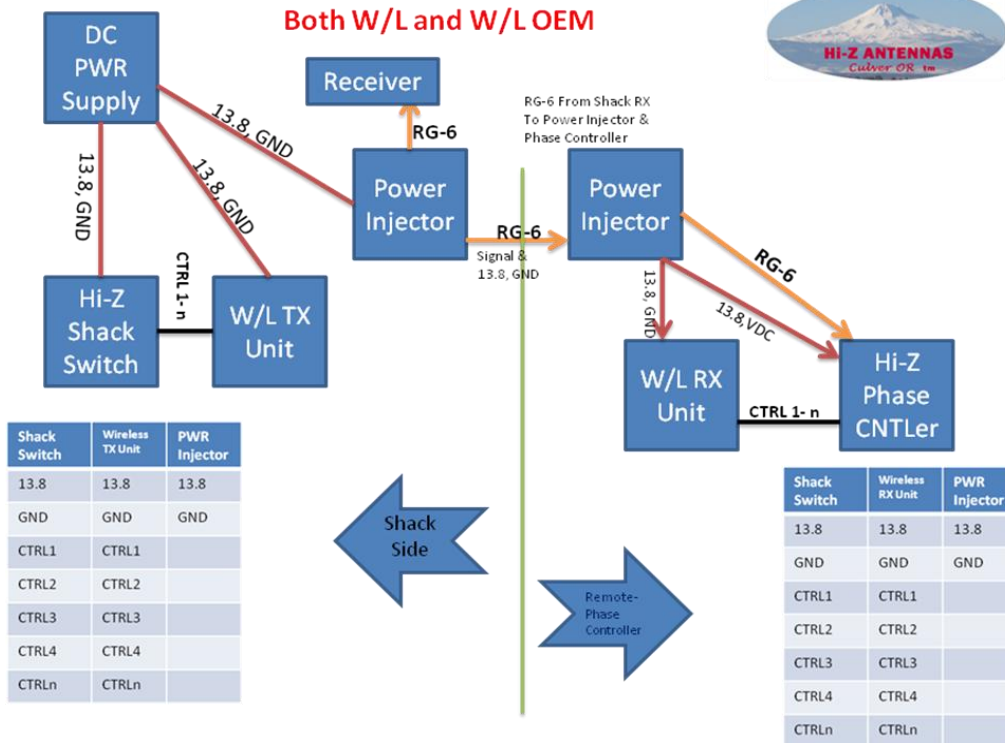
### **Wiring and Connections:**

For all Hi-Z products it is a simple point to point wiring scheme.

1. Connect power and CTRL wires between TX unit and the shack switch.
2. Connect power to the shack power injector. Connect feed RG6 to COAX With Power F connector. Connect RG6 to COAX without Power F connector to 75/50 ohm transformer.
3. Connect power form injector to RX unit. Connect CTRL wires between RX unit and your phase controller.

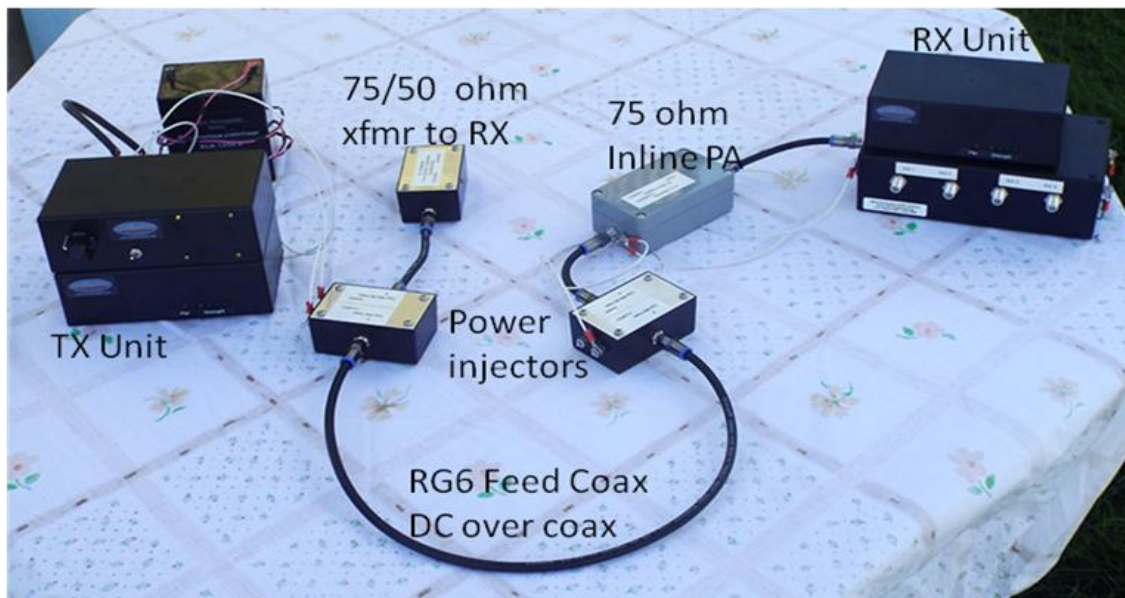
Review the following block diagram.

### Hi-Z Wireless W/L Wiring Block Diagram Both W/L and W/L OEM

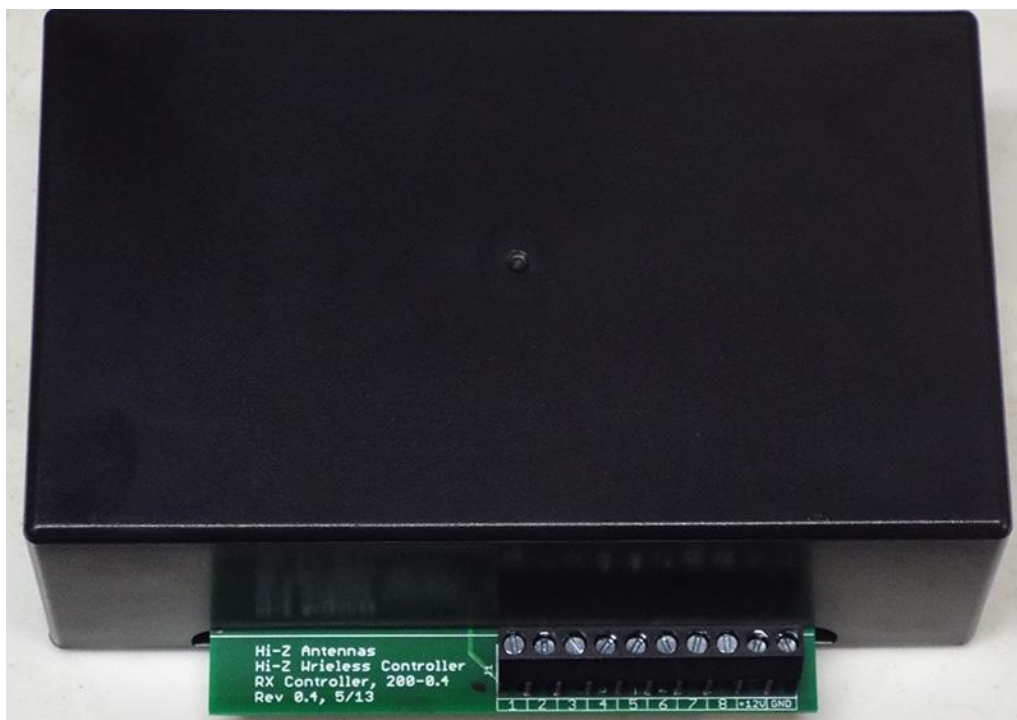


### Hi-Z Wireless End to End View (from shack to field)

Shack Side

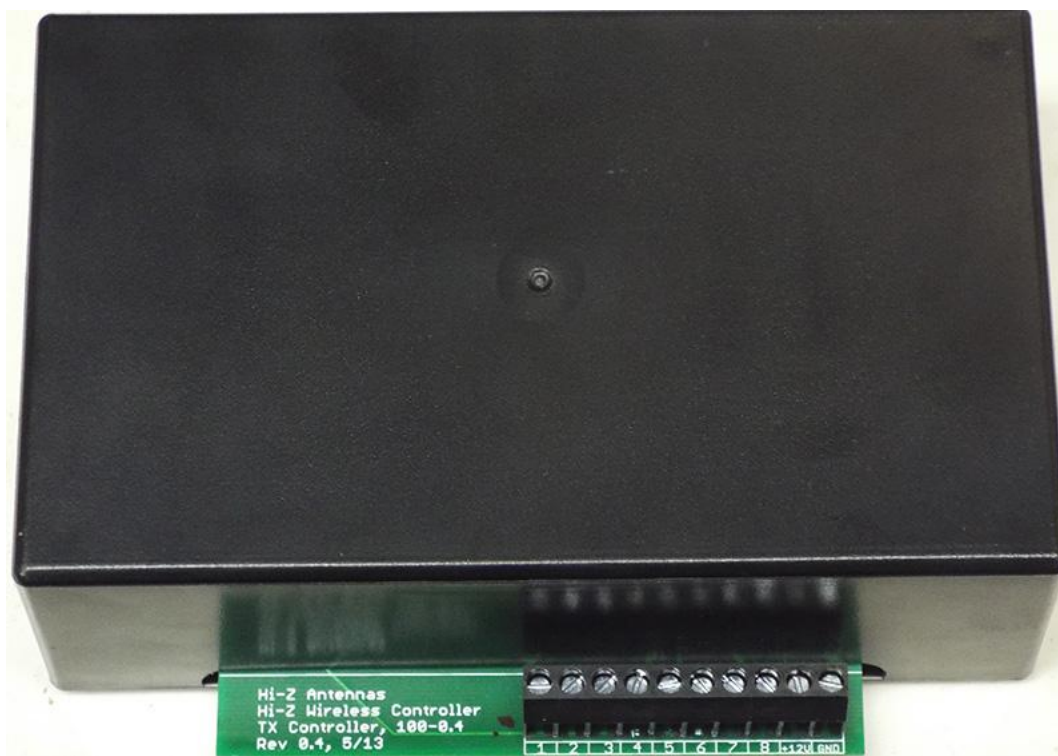


Phase Controller  
Remote End



### Hi-Z W/L RX Controller located at Phase Controller

NOTE: Terminal Block (From Left to Right)  
Ctrl1 through Ctrl8, +13.8VDC, GND



### Hi-Z W/L TX Unit – located at Shack Switch

NOTE: Terminal Block (From Left to Right)  
Ctrl1 through Ctrl8, +13.8VDC, GND

## Power Injectors / Extractors (optional)



**Hi-Z W/L Power Injector**



**Hi-Z W/L Power Injector – End To End**



**Hi-Z W/L Power Injector – Both Side Views**

### ***From the shack switch to the TX unit: typical wiring***

Connects from Hi-Z Shack Switch to		TX terminal board	
Ctrl1		Ctrl1	
Ctrl2		Ctrl2	
Ctrl3		Ctrl3	
Ctrl4		Ctrl4	
Ctrl5		Ctrl5	
Ctrl6 Unused		Ctrl6 Unused	
Ctrl7 Unused		Ctrl7 Unused	
Ctrl8 Unused		Ctrl8 Unused	
13.8VDC		13.8VDC	
GND		GND	

### ***From the RX Unit to Phase Controller: typical wiring***

Connects from Hi-Z Phase Controller to		RX terminal board	
Ctrl1		Ctrl1	
Ctrl2		Ctrl2	
Ctrl3		Ctrl3	
Ctrl4		Ctrl4	
Ctrl5		Ctrl5	
Ctrl6		Ctrl6	

13.8VDC		13.8VDC	
GND		GND	

On the shack side, the 75/50 ohm transformer will be inserted between the RX and the power injector. On the RX side any filtering will be between the output of the phase controller and the remote power injector.

The customer will supply short cables to connect the W/L TX unit to the local shack switch and local Power injector. Also supply a short cable to connect remote RX W/L unit and power injector to remote phase controller. Number of connections will be determined by which phase controller is used, can be as few as 2 or as many as 6 CTRL connections.

When powered up typically all LEDs will be lit. As the range (distance from TX to RX) units increase the number of GREEN LEDs will decrease and this is OK as it means the signal strength between the units is lower.

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