HOT SHOT

T-L
810-T
TRANSMITTER GUIDE

Hot Shot Systems Inc. will no longer sell or warranty its products for the use in controlling or monitoring pollutants. However, the use of these controllers in non pollutant applications such as water tanks, water pumps, pivots, irrigation systems and any other monitoring or control applications that do not involve pollutants are suitable for these products.

Version : 161808

ATTENTION: **All Hot Shot units have a designated GROUND Terminal. Hot Shot units must have there ground terminal connected to a proper ground or grounding system as per the NEC *(National Electrical Code)* and or your local and state electrical code guidelines.**

CAUTION: **Never connect any voltage to the HOT SHOT Relay Input terminals. The Hot Shot supplies the voltage needed for sensor switching (use dry relay contacts only). Make sure the pivot's well kill terminals do not have voltage from previously wired configurations.**

ATTENTION: **Depending upon the style of system that your are going to control with the Hot Shot Wireless Controller you may need to supply additional parts. Such as relays, step-down transformers, Murphy switches etc. These items are suggested in the wiring guides that follow in this manual.**

HOW IT WORKS

Think of the HOT SHOT system as a control wire going from the transmitter site to the receiver site. When the Hot Shot Transmitter's SENSOR ON-OFF Input is connected to COM, a 10 second delay timer is started. After the delay timer has expired, the transmitter will send the (Relay ON) command to the receiver. This will close the relay contacts between N.O. and COM. When the SENSOR ON-OFF input at the transmitter is opened it will send the (Relay OFF) command to the receiver switching the relay back to N.C. connected to COM. Battery backup in the transmitter will still allow the HOT SHOT to work in case of power outage. Each system is coded with its own four digit code so it will not interfere with other systems in the same area. The following manual has been prepared to provide details for Transmitter installation and Receiver installation on electric and engine driven wells.

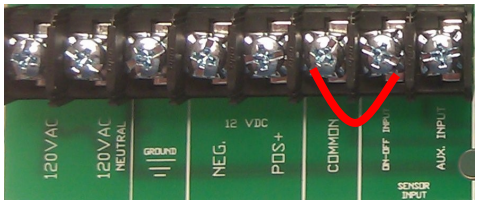
MOUNTING

Cabinets are a weatherproof UV protected NEMA 4X cabinet with mounting ears on top and bottom. The transmitter/receiver control box can be mounted on the side of a control panel, pole or any other surface as long as the antenna does not have metal running within 12" of the antenna whip. If longer range is needed, an external long range antenna can be used. Do not mount the HOT SHOT receiver to the well engine or cover because the strong vibrations can be harmful to the unit.

OPERATING THE TEST BEACON

The Test Beacon function is turned on and off by using FUCNTION SWITCH #8 (see above). **This feature is used for testing and range finding purposes only.** To activate the Test Beacon first turn OFF the power to the transmitter. Turn function switch #8 on and connect a small jumper wire from the **ON-OFF INPUT** terminal to the **COMMON** terminal and then turn the power back ON to the transmitter. *See diagram below.* When turned ON the Transmitting LED will blink and the code will be transmitted every 10 seconds cycling the receiver's relay. **DO NOT have the receiver relay wired up to the pump** during this procedure because it will continually open the relay for 10 seconds and then close the relay for 10 seconds causing damage to the pump.

Function switch #8 must be turned OFF and the jumper wire removed for the transmitter to operate normally.



Trans Terminal Strip

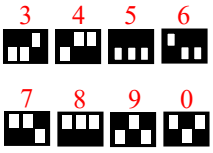
CODE SWITCH SETTINGS

All transmitters and receivers will be shipped from the factory with preprogrammed field codes. This ensures that your neighbor will not duplicate the same field code as your unit. Your field codes already match, so you do not need to program any codes. If you ever need to replace a unit due to servicing, the field code can be programmed to match the existing or new add on units. FOLLOW THE EXAMPLE BELOW…

FOR CODE QUESTIONS? CALL 785-623-1500

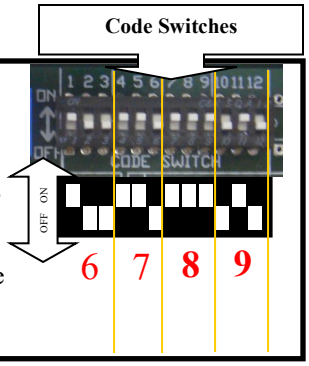
EXAMPLE: CODE 6789

KEY



Use the # KEY to the left to make each digit of the code. It takes three of the switches to make one number of the code.

Use switches 1,2,3 for the first # in the code. Switches 4,5,6 for the second #. Switches 7,8,9 for the third #. Switches 10,11,12 for the fourth #.



BATTERY BACKUP

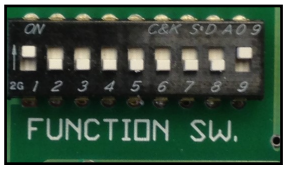
During a power outage, a gel cell rechargeable battery supplies power to the transmitter for approximately 24 hours. This allows the transmitter to send a shutdown signal to the receivers when the pivot has lost power. The Hot Shot Transmitter comes with a battery save feature that will turn off the Hot Shot Transmitter if the voltage drops from 12vdc to 10vdc. This function will add years of life to the gel cell battery.

Important... When the battery has discharged, it will take approximately 15 to 20 minutes for the battery to charge enough to operate the transmitter in case of another power failure. The battery should be replaced every year for the best reliability during power outages.

TRANSMITTER FUNCTION SWITCH SETTINGS

SWITCH#

4	**ON**	MAKES TRANSMITTER A UNIT #2 TRANSMITTER
4&5 both	**ON**	MAKES TRANSMITTER A UNIT #3 TRANSMITTER
5	**ON**	MAKES TRANSMITTER A UNIT #4 TRANSMITTER
5&6 both	**ON**	MAKES TRANSMITTER A UNIT #5 TRANSMITTER
6	**ON**	MAKES TRANSMITTER A UNIT #6 TRANSMITTER



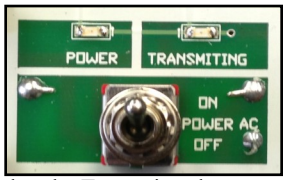
8 **ON** ACTIVATES THE TEST BEACON (Used for testing and range finding only. When activated the transmitter will send a code every 10sec cycling the receivers relay. **To activate this feature put a jumper wire from the ON-OFF INPUT to COMMON on the relay input you want to test. DO NOT have the receiver wired to the pump during this test. This function must be turned off for normal operation. See description at the bottom of this page.**

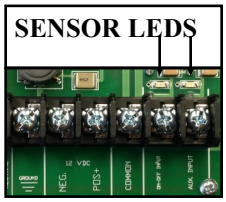
OFF NORMAL OPERATION MODE

9 **ON** REFRESH (This function will retransmit the state of the Sensor Inputs once every hour.)

OFF NO REFRESH (Transmits the code only when there is a change of state on the Sensor Inputs.)

INDICATOR LEDS





POWER Indicates that the Transmitter has power and is ready to operate.

TRANSMITTING Indicates when the Transmitter is transmitting.

SENSOR LEDS When these LED's are on it indicates that the terminal below it is connected to the COMMON terminal.

T-L ELECTRIC PANEL (ALLEN BRADLEY)

WIRING INSTRUCTIONS FOR BASIC OPERATION

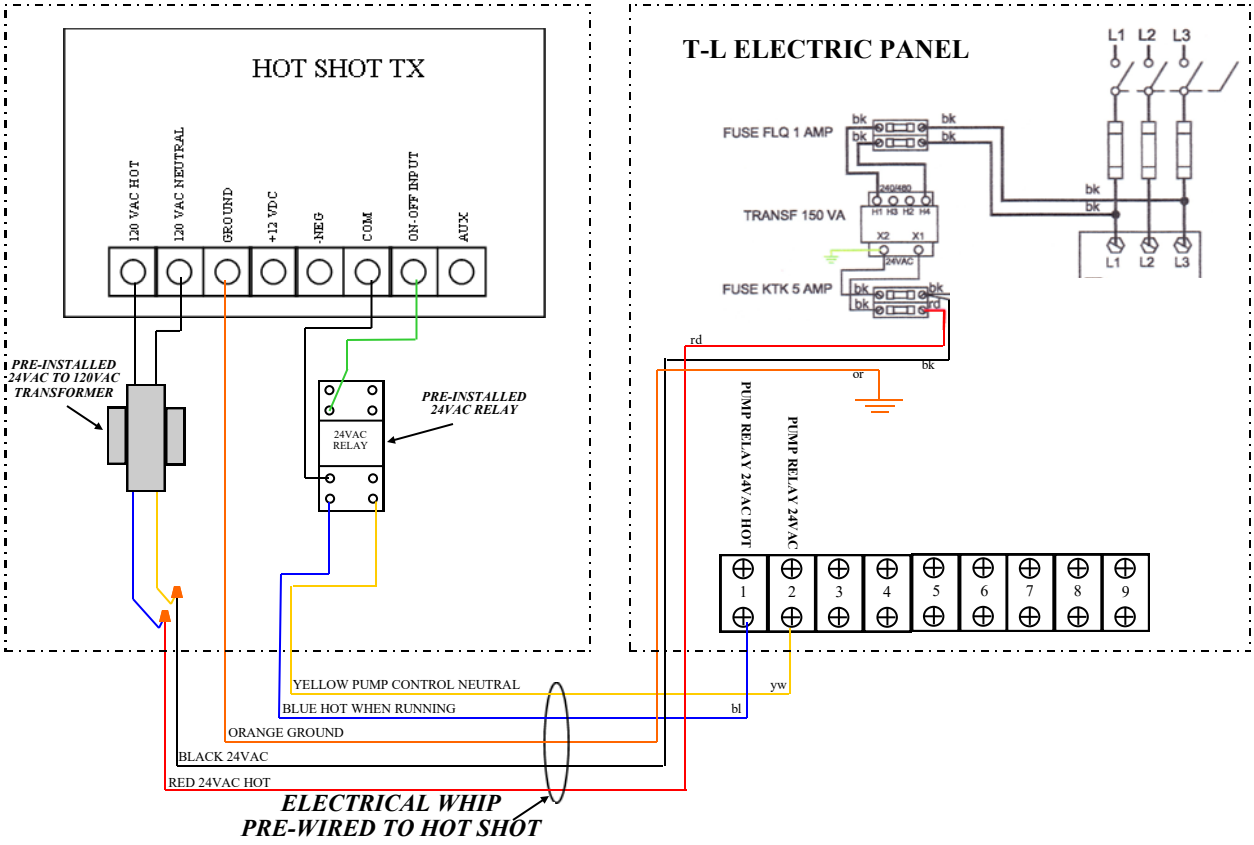
FIRST make sure all the function switches on the transmitter are in the correct position for this style of operation.

Installation:

Install the prewired whip thru a hole in the bottom of the T-L panel using the weather proof wire clamp provided. To supply the 120v needed for the Hot Shot Transmitter to operate, connect the **RED** wire in the electrical whip to the fuse block terminal that connects to the XF terminal on the 24VAC transformer in the T-L panel. Connect the **BLACK** wire in the electrical whip to the fuse block terminal that connects to the X2 terminal on the 24VAC transformer in the T-L panel. Connect the **ORANGE** wire in the electrical whip to a ground terminal in the T-L panel. For pump control connect the **BLUE** wire in the electrical whip to terminal #1 of the terminal strip in the T-L panel. Connect the **YELLOW** wire in the electrical whip to terminal #2 of the terminal strip in the T-L panel.

Operation:

Make sure the Hot Shot Receiver at the water pump is powered up and ready first! When the T-L Well Switch is in the up or wet position, terminal #1 in the T-L panel will become hot and energize the 24vac relay in the Hot Shot Transmitter connecting the COM terminal to the ON-OFF INPUT in the Hot Shot Transmitter. The transmitter will now send the ON signal to the receiver starting the electric water pump or removing the ground from the Murphy on an engine driven water pump. When the pivot stops terminal #1 in the T-L panel will loose voltage de-energizing the 24vac relay in the transmitter which will open the contact between the COM terminal and the ON-OFF INPUT terminal. The transmitter will now send the OFF command to the receiver stopping the water pump.



T-L PPC III PANEL - ENGINE DRIVEN

WIRING INSTRUCTIONS FOR BASIC OPERATION

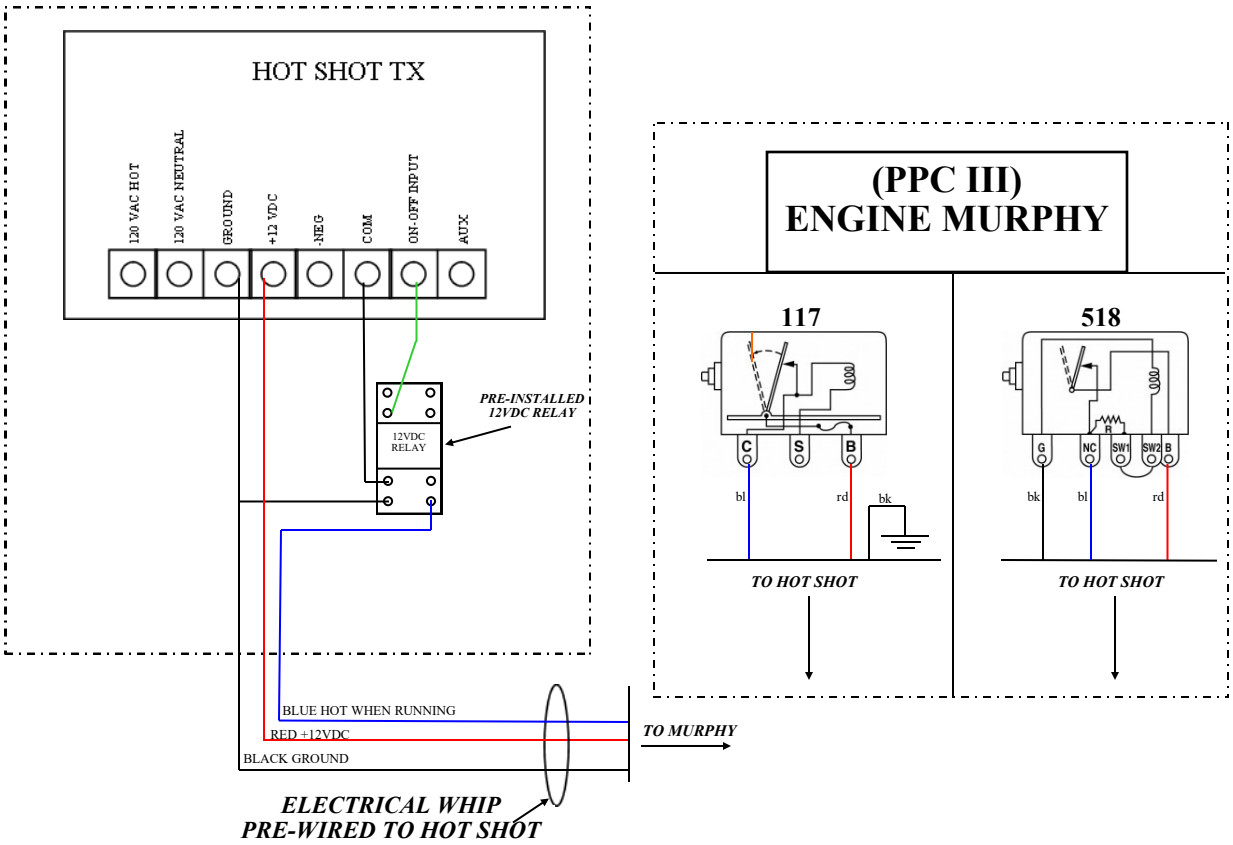
FIRST make sure all the function switches on the transmitter are in the correct position for this style of operation.

Installation:

To supply the 12v needed for the Hot Shot Transmitter to operate, connect the **RED** wire in the electrical whip to the B terminal on the Murphy Switch. Connect the **BLACK** wire to ground or to the G terminal on a 518 Murphy. For pump control connect the **BLUE** wire in the electrical whip to the C terminal on a 117 or the NC terminal of a 518 Murphy.

Operation:

Make sure the Hot Shot Receiver at the water pump is powered up and ready first! When the pivot's engine is started, the C or NC terminal of the Murphy will become hot and energize the 12vdc relay in the Hot Shot Transmitter connecting the COM terminal to the ON-OFF INPUT in the Hot Shot Transmitter. The transmitter will now send the ON signal to the receiver starting the electric water pump or removing the ground from the Murphy on an engine driven water pump. When the pivot stops the C or NC terminal of the Murphy will loose voltage de-energizing the 12vdc relay in the transmitter which will open the contact between the COM terminal and the ON-OFF INPUT terminal. The transmitter will now send the OFF command to the receiver stopping the water pump.



T-L ENGINE PIVOT (*ISUZU PANEL*)

WIRING INSTRUCTIONS FOR BASIC OPERATION

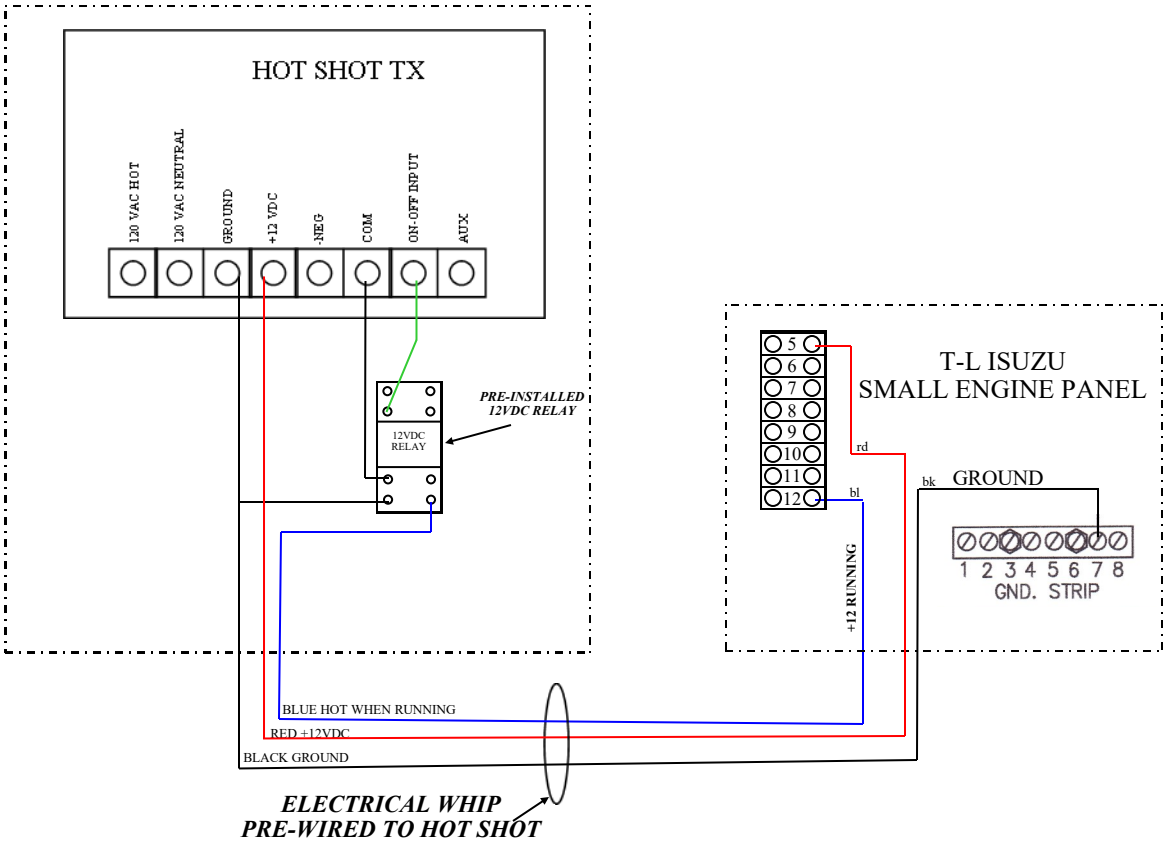
FIRST make sure all the function switches on the transmitter are in the correct position for this style of operation.

Installation:

To supply the 12v needed for the Hot Shot Transmitter to operate, connect the **RED** wire in the electrical whip to terminal #5 in the Isuzu panel.. Connect the **BLACK** wire to the ground strip in the Isuzu panel. For pump control connect the **BLUE** wire in the electrical whip to the #12 terminal in the Isuzu panel.

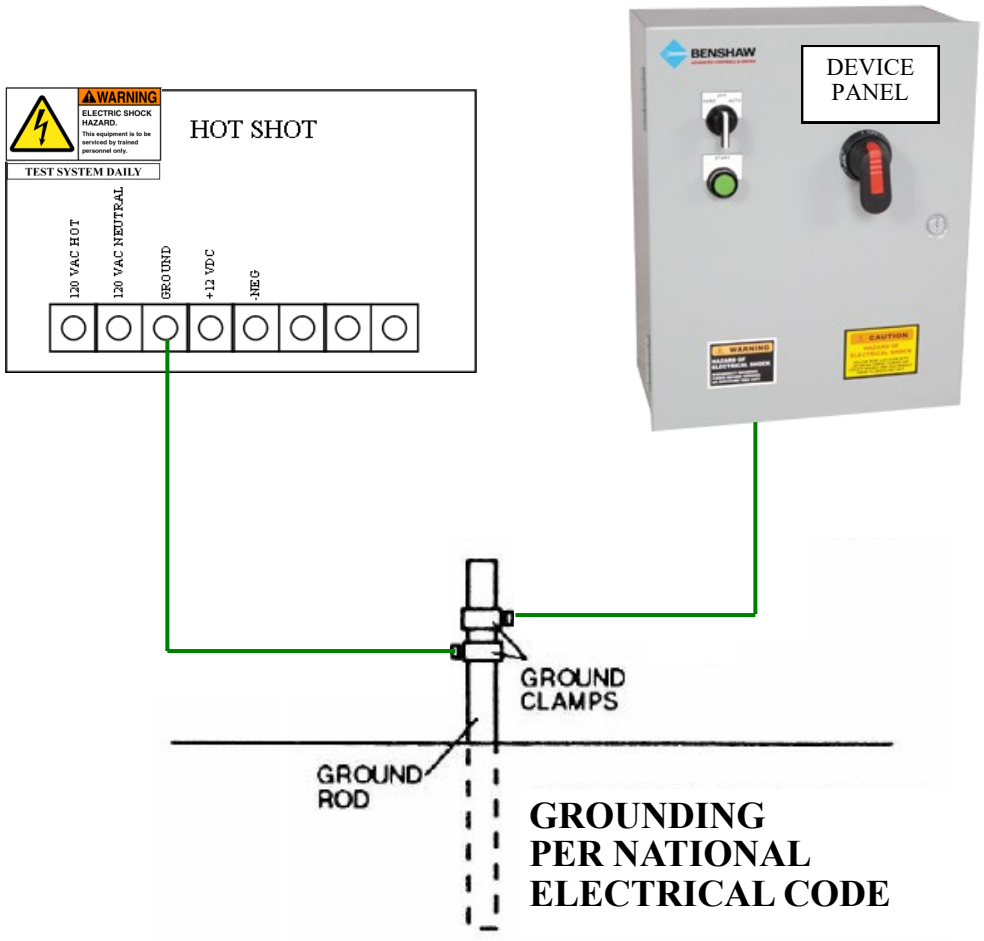
Operation:

Make sure the Hot Shot Receiver at the water pump is powered up and ready first! When the pivot's engine is started, terminal #12 in the Isuzu panel will become hot and energize the 12vdc relay in the Hot Shot Transmitter connecting the COM terminal to the ON-OFF INPUT in the Hot Shot Transmitter. The transmitter will now send the ON signal to the receiver starting the electric water pump or removing the ground from the Murphy on an engine driven water pump. When the pivot stops terminal #12 in the Isuzu panel will loose voltage de-energizing the 12vdc relay in the transmitter which will open the contact between the COM terminal and the ON-OFF INPUT terminal. The transmitter will now send the OFF command to the receiver stopping the water pump.



HOT SHOT GROUNDING
FOR SAFETY AND PEAK PERFORMANCE

Hot Shot wireless systems are equipped with a GROUND terminal that needs to be connected to an NEC approved ground rod. A Hot Shot has various lightning and static protection devices incorporated on the circuit board that require proper grounding to operate. Any equipment or device panels operating with or near the Hot Shot should also be connected to the grounding system. A good ground will enhance the transmit and receive range of the Hot Shot System.



NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- **Reorient or relocate the receiving antenna.**
- **Increase the separation between the equipment and receiver.**
- **Connect the equipment into an outlet on a circuit different from that to which the**
- **receiver is connected.**
- **Consult the dealer or an experienced radio/TV technician for help.**

15.21 INFORMATION to USER:
The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC License is not required. This device operates on frequencies authorized for use in the Multi-Use Radio Service (MURS). MURS frequencies are available for unlicensed business or personal use. Any changes or modifications may void the user's authority granted by the FCC to operate this radio and should not be made. Use of this radio outside the country where it was intended to be distributed is subject to government regulations and may be prohibited.

Warranty

The warranty below constitutes the only warranty in connection with any sale from Hot Shot Systems Inc. and is in lieu of all other warranties, express or implied, written or oral. THERE ARE NO IMPLIED WARRANTIES OF MERCHANT-ABILITY OR FITNESS FOR A PARTICULAR PURPOSE THAT APPLY TO ANY SALE FROM HOT SHOT SYSTEMS INC.

Hot Shot Systems Inc., warrants to You that Products (Products meaning any item purchased form Hot Shot Systems) will be free from defects in materials and workmanship under normal use and service for one (1) year from the purchase date. A product issue under this Limited Warranty must be presented during the Limited Warranty period and within thirty (30) days after any covered condition has occurred. A claim under this Limited Warranty shall be satisfied by either, in Hot Shot Systems sole discretion, repairing or replacing the Product. Replacement Products may be new or reconditioned.

To make a claim under this Limited Warranty, Hot Shot Systems must first issue You a Returned Material Authorization (RMA) number. This number can be obtained by calling Hot Shot Systems and a RMA number will be provided over the phone. A copy of the RMA number must be included with any materials shipped to Hot Shot Systems . The entirety of Products must be sent back to Hot Shot Systems and properly packaged to ensure against damage during shipping. If Hot Shot Systems determines that the claim is covered by this Limited Warranty, Hot Shot Systems will either, in its sole discretion, repair or replace the Products and/or part. Any damages not covered under this Limited Warranty will not be repaired until a purchase order is received.

The Limited Warranty period shall not be extended by the replacement or repair of Products or parts under this Limited Warranty but the remaining Limited Warranty period shall continue in effect and be applicable to the replaced or repaired Products or parts under conditions of the Limited Warranty.

The term “Long Range Wireless Control” is not a guarantee of proper radio operation everywhere in all conditions. Radio operation is subject to transmission and receive limitations, customer equipment, weather, topography and other environmental and electrical considerations associated with radio technology also affect radio operation and radio operation may vary significantly within buildings. The radio operation range of Products is not guaranteed, and Hot Shot Systems cannot and does not guarantee or represent that the radio operation will operate correctly in all conditions. It is Your responsibility to determine daily if radio operation is operating correctly and to monitor the Products to determine the communication between Products. You should contact Hot Shot Systems for assistance if needed. As such, Hot Shot Systems is not liable for any causes of action, pollution, incurred costs, losses of any kind or damages of any kind whatsoever arising out of mistakes, omissions, interruptions, errors, customer equipment or defects in the radio operation and or Products.

Intended Use. Products are intended for non pollutant, non hazardous and non critical use only. Products are to be used and installed per the installation guide and any other instructions provided by Hot Shot Systems (collectively, the “Seller’s Guidelines”). Any use beyond the intended non pollutant, non-hazardous and non critical use or against the Seller’s Guidelines (“Unintended use”) are at the End-User’s own risk, and Hot Shot Systems does not warrant or make any representations whatsoever regarding the use of Products for any unintended use. Hot Shot Systems’ Products are convenience items and are not intended to be a substitute for normal maintenance, monitoring, control and proper upkeep of equipment or property that Products are monitoring or controlling. Hot Shot Systems’ Products are convenience items and are not intended to monitor equipment, control equipment, liquids, chemicals or other items which are pollutants, vital, hazardous, necessary, and/or have life-or-death consequences. The End-User should take care to determine prior to use whether Products are suitable, adequate or safe for the use intended. Since individual applications are subject to great variation, Hot Shot Systems makes no representation or warranty as to suitability or fitness of Products for any specific application.

Upon expiration of the Limited Warranty period, all liability of Hot Shot Systems shall be terminated. This Limited Warranty will also be terminated immediate due to any of the following cases: failure to follow installation and operating instructions, misuse or "Unintended use", alteration, abuse, accident or tampering, and repair by anyone other than Hot Shot Systems.
THIS LIMITED WARRANTY IS EXCLUSIVE AND EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, OBLIGATIONS OR LIABILITIES, WHETHER WRITTEN, ORAL, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANT-ABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE. IN NO CASE SHALL HOT SHOT SYSTEMS BE LIABLE TO ANYONE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS WARRANTY OR ANY OTHER WARRANTIES WHATSOEVER. This Limited Warranty gives specific legal rights.

No employee, agent, dealer or other person is authorized to give any warranties on behalf of Hot Shot Systems Inc., nor to assume for it any other liability in connection with any of its products, except an officer of Hot Shot Systems Inc., in a signed writing.

LIABILITY

Hot Shot Systems Inc. and its directors, officers, employees, subsidiaries and affiliates shall not be liable for pollution, pollution clean up, personal injury, property damage, hazardous conditions created, fluid spill cleanup, loss of product, loss of profit, or any other loss or expenses based on a claim the product(s) failed to operate properly. Test product daily to see if any malfunctions are present. If using this product in a situation where it is extremely critical to control your device to prevent damage of any kind, you must also use a call out system to notify a person in control of this situation. If this warranty and statement of liability is unacceptable, then do not purchase these products.

Hot Shot Systems makes no representation that Products and Services will reduce any risk of property loss, product loss, loss of profit, pollution or personal injury or prolong the life of any equipment or other property; or that Products and Services will in all cases provide adequate warning and protection. You understand that Products if properly installed and maintained may only reduce the risk of property loss or other loss but Products and Services are not an insurance or a guarantee that there will be no property loss, product loss, loss of profit, pollution or personal injury or other loss as a result. CONSEQUENTLY, HOT SHOT SYSTEMS SHALL HAVE NO LIABILITY FOR ANY POLLUTION, PRODUCT LOSS, LOSS OF PROFIT, PROPERTY DAMAGE, PERSONAL INJURY OR OTHER LOSS OR EXPENSES INCURRED BASED ON A CLAIM THE PRODUCTS AND SERVICES FAILED TO GIVE WARNING.