



**K&K Systems, inc.**  
Traffic Safety Products Manufacturer



**EMERGENCY VEHICLE  
WARNING  
ECO-122-D12  
OPERATING MANUAL**



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# THANK YOU FOR YOUR BUSINESS!

To Our Valued Customer,

K&K Systems, Inc. is excited that you have purchased our product.

Our company has been serving the traffic industry since 1997. Since that time we have risen to become a leader in the traffic industry. We offer a complete line of traffic safety products that include message boards, arrow boards, radar speed monitors, solar school zone flashers, solar 24-hour flashers and many other quality products that serve our industry today.

At K&K Systems, Inc., we strive to improve the quality of our products. We are dedicated to the concept that our customers are our most valuable resource. We strive to serve our customers as we would want to be served.

Tim Keith,  
*President*





# INTRODUCTION EMERGENCY VEHICLE WARNING ECO 122-D12

K&K Emergency Vehicle Warning Manual (ECO-122-D12) is a device using LED flashing beacons in combination with warning signs that is remote controlled by a user. It is designed to be used where on demand warning lights must be used, and turned off when not needed. The 122-D12 can also be used as the primary unit to trigger other nearby systems that are further away from the users range.

## WHAT IS THE CROSSTALK

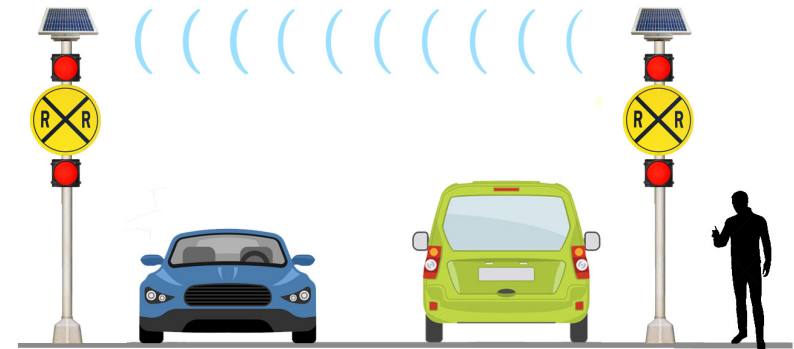
The CrossTalk is an Advanced, Solar-Powered Lighting Controller. CrossTalk controllers are used for a variety of traffic & safety applications including cross-walk / pedestrian systems, speed/radar systems and more. CrossTalk applications can be setup quickly and provide more functionality and flexibility than traditional “wired” systems.

The CrossTalk device is a rugged, integrated unit which provides a built-in solar controller with Maximum Power-Point Tracking (MPPT), battery management with low-voltage disconnect (LVD), short-range wireless (900MHz), multi-function programmable lighting control, support for up to (4) beacons, auto-dimming, and a scheduler all in one compact enclosure.



# BASIC OPERATION

The CrossTalk for Railroad Crossings is used in conjunction with the Key Fob Remote. It is operated by simply pressing the key fob to activate. The CrossTalk Controller, located inside the control cabinet, wirelessly activates all the warning lights and LEDs .



## KEY FOB REMOTE

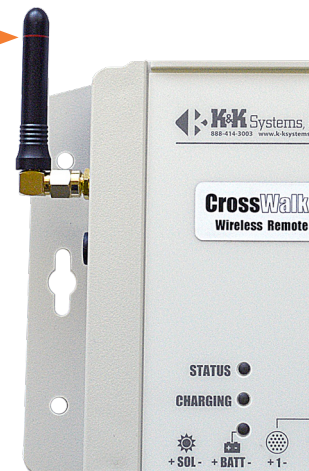
The fob is used to remotely activate the lights. It uses a 433mhz radio to communicate with the crosstalk. It has a range of approximately 700ft with direct line of sight. All the buttons activate the same light. Additional fobs can be purchased in order to give multiple people control over the lights.

*Note: Antennae with the same color ring communicate with each other.*



## 433MHZ ANTENNA

The primary unit in a system will have a short antenna on the left side of the crosstalk. This antenna is used to communicate to the Key Fob. At least one pole system should have this antenna – preferably the one nearest to the user. Additional antennas may be purchased if you would like individual control over each light, but only if their distance is over 700ft.





# DESCRIPTION OF CROSSTALK CONTROLS

**433 mhz Antenna**

**Net/Mode Setting**

Flash pattern setting (50/50, 90/10, wig-wag, etc.)

**Status Light**

The status light flashes in sequence with the first output to indicate the flasher is active and flashing rate.

**Charging Light**

Solar controller status indicator shows when the battery is being charged:  
Green = Charged  
Red = Charging

**Solar Port**

Solar connection port

**Battery Light**

Battery status light for safe accurate connections:  
Green = Good connection  
Red = Reverse-polarity

**LED Outputs 1,2,3,4**

Load: 12V LED/DC flasher outputs/switches (x4).  
Maximum load 50W per output.

**Ethernet RS-232**

Communication Port / Laptop Connection

**Switch Attachment**

Sensor connection port. Connect any sensor for use in conjunction with sign alerts.

**Sensor options:**

- Push Button
- Moisture Sensor
- Water Level Sensor
- Motion Sensor
- Overspeed Sensor

**900 mhz Antenna**

**Wireless Light**

When lit, indicates that a wireless device is connected

**Signal Light**

Indicates the strength of wireless signal during communication

**Time Setting**

Determines the length of time in either seconds, minutes or hours

**Scale Setting**

Used as a multiplier in combination with the time setting.  
(Example: With Time set to 10 SEC and Scale set to 6. The beacon will stay on for 60 seconds (10 SEC x 6)

**Group Setting**

All devices with the same GROUP setting can communicate with each other.

**In 1 / In 2**

Digital input range 5-24V DC for radar, advance warning, and more





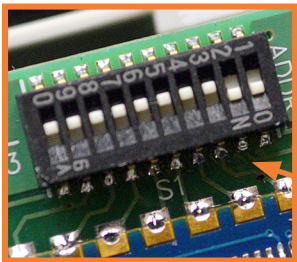
# HOW TO SET UP A KEY FOB REMOTE

*The initial Key Fob Remote is programmed upon purchase. The below instructions are for programming additional Key Fobs.*

A DIP switch is a manual electric switch that is arranged in a dual in-line package (DIP) used to select the operating mode of a device. The CrossTalk CrossWalk and the Key Fob Remote have slide type DIP switches which can be either ON or OFF. These switches need to be set the same on each CrossTalk and the matching Key Fob to activate emergency vehicle beacons.

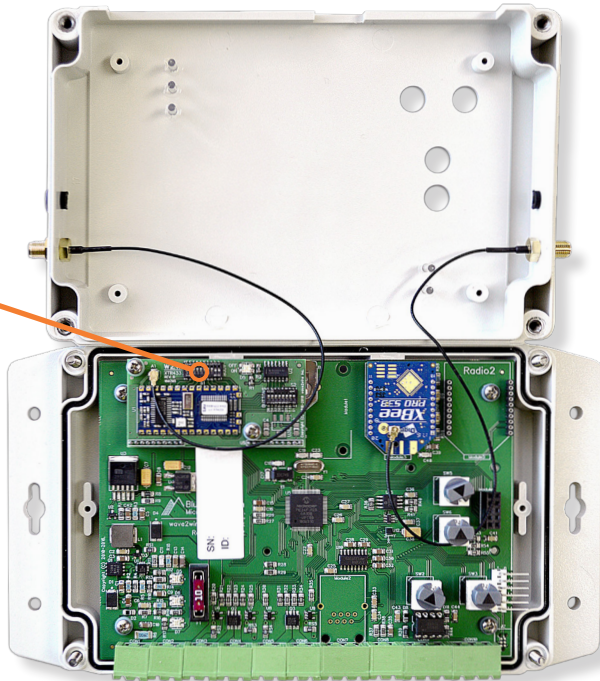
Access the CrossTalk DIP Switches by removing the CrossTalk from the control cabinet. Turn the CrossTalk onto the face to reveal 4 screws on the backside of the housing on the corners. Loosen each screw until the face cover easily separates from the back of the housing. The screws will remain in the housing. Carefully lay the cover over as to not break the connection of the antennae wires.

Locate the BUTTONS DIP switch on the CrossTalk receiver board.



CrossTalk DIP Switches

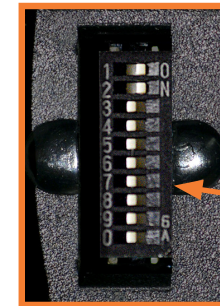
The ADDR DIP switches need to be set the same on each CrossTalk and match the DIP switch settings on the remote so that all the CrossTalks are paired to the same remote. The ADDR switches on both the CrossTalk and the Remote



need to be something other than 0 (all OFF) or the remote will not work. In other words, at least 1 of the ADDR DIP switches needs to be ON and set the same on both the remote and the CrossTalk.

Enable at least (2) buttons on each CrossTalk and Key Fob so that there is an ON and an OFF. To turn a switch ON, use a small tipped tool and move the white button to the ON position.

Set the DIP Switches on the Key Fob the same as the DIP Switches on the CrossTalk. If the respective switch is set to ON then the CrossTalk CWR will respond to the corresponding button on the remote.



Key Fob DIP Switches



**ON Buttons:**  
D0, D2, D4, and D6

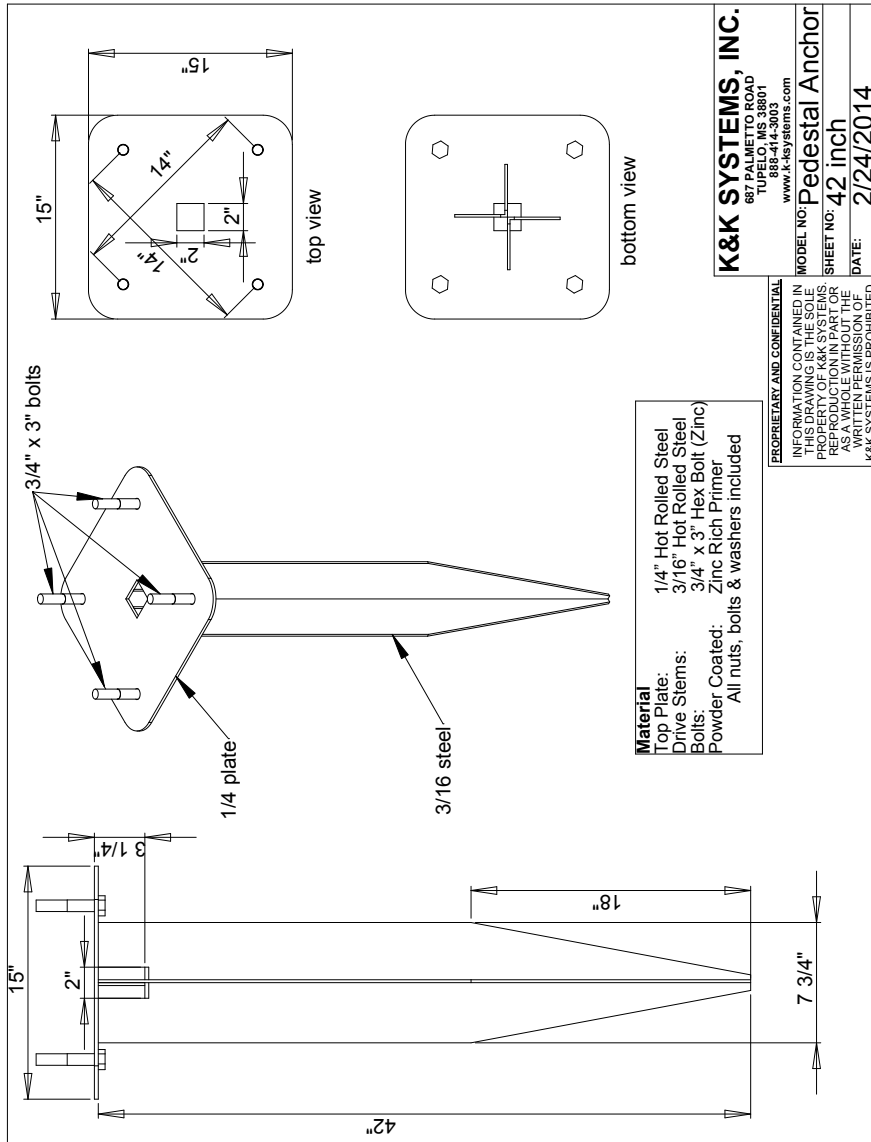
**OFF Buttons:**  
D1, D3, D5, and D7



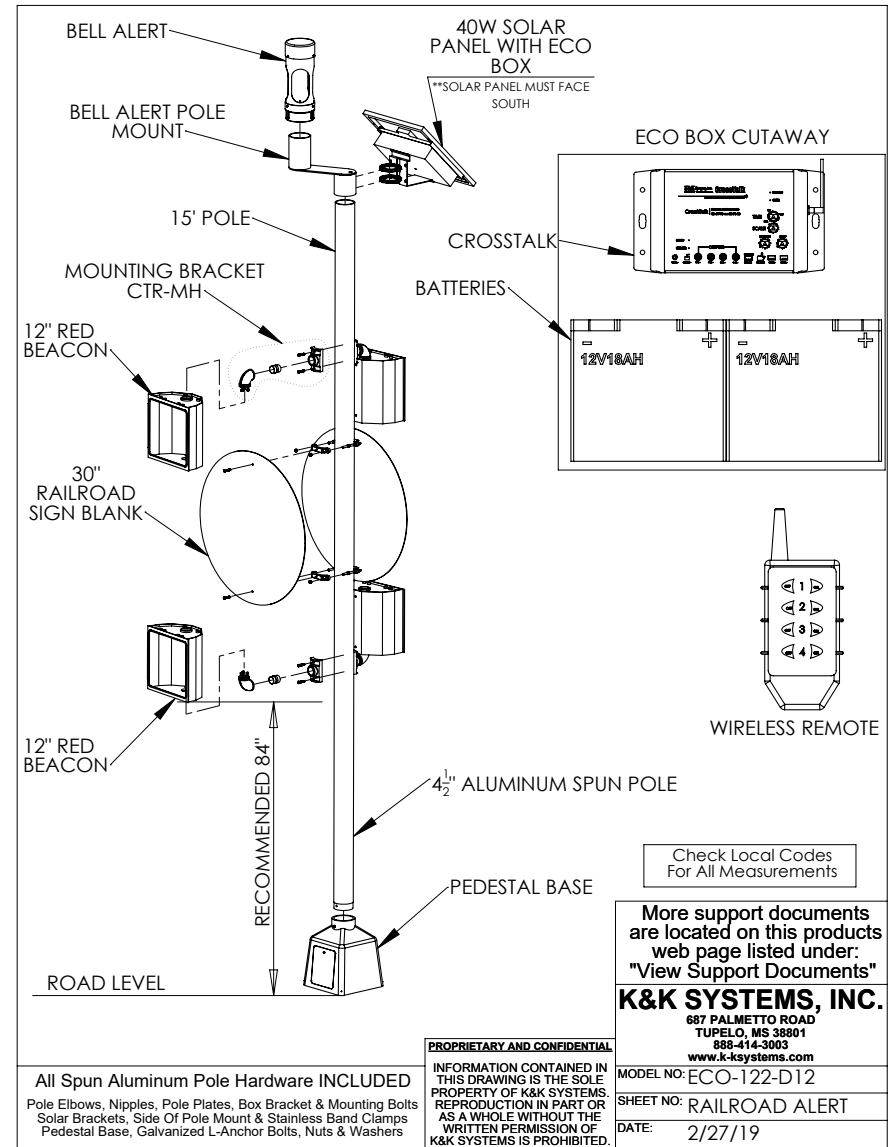
Key Fob buttons as they are related to the internal DIP Switches.



# DRIVE BASE MOUNTING



# MOUNTING ASSEMBLY





# MODEL ECO-122-D12 SPECIFICATIONS

(Meets MUTCD & ITE Standards)

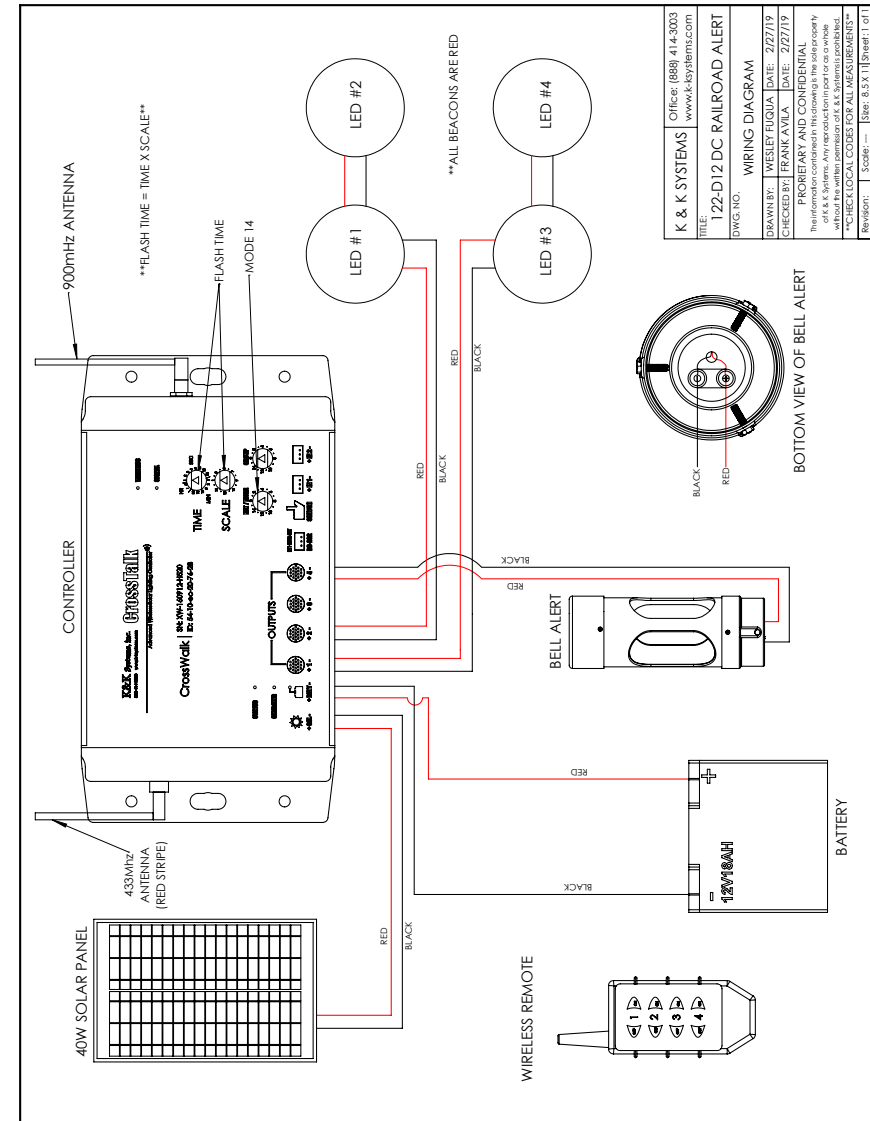
<b>Solar Panel</b>	Maximum Power	(P max)	20W
	Voltage at Pmax	(V mp)	17.3 V
	Current at Pmax	(IMP)	1.16 A
	Short-Circuit Current	(Isc)	1.29 A
	Open-Circuit Voltage	(Voc)	21.6 V
<b>Control Cabinet</b>	7.5" x 11.25" x 4"	aluminum	located below solar panel
<b>Battery</b>	(1) AGM	18 amp	included
<b>Push Button</b>	2" Button with momentary switches rated at 36VDC		
	5" x 7" Button fixture with crossing sign inserted		
<b>Optional</b>	Additional RRFB with mounting hardware		
	Pole with mounting hardware		
	Pedestrian Sign		
	Left Down Arrow Sign		
	Right Down Arrow Sign		
<b>RRFB</b>	Lighting Meets J595 for Class 1		

# MODEL ECO-122-D12 PARTS LIST

PART NUMBER	DESCRIPTION
ADD LED	12" Red Flashing Beacon with Black Housing
CWKF-433-4	Key Fob Remote
CrossTalk-CWR	Crosstalk 4-Radio - wireless; 900 mhz radio (Appr. 700 feet range)
ECO2-111704	Eco-Cabinet
BAT-12-18A	18 amp AGM Battery
DS-A1-40	40 Watt Solar Panel
<b>OPTIONS</b>	
W10-1	Railroad Crossing Symbol, 36", High Intensity
CCTR-15 4-1/2"	Spun Aluminum Pole Kit with Base
CCTUC-12 12' 3lb	U Channel Post Kit
CCTS-12-2	2" x 12' Galvanized Square Post Kit
CWKF-433-4	Key Fob Remote



# WIRING DIAGRAM





# TROUBLESHOOTING GUIDE

Please call 888-414-3003 for Tech Support if this guide does not solve your issue.

PROBLEM	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5
<b>No Power</b>	<ul style="list-style-type: none"> <li>• Check <i>Battery Light</i> on CrossTalk is on</li> </ul>	<p><b>If light is off:</b></p> <ul style="list-style-type: none"> <li>• Check battery voltage is a minimum of 12V.</li> <li>• Check for correct polarity of battery wires to CrossTalk</li> </ul>	<p><b>If batteries are good:</b></p> <ul style="list-style-type: none"> <li>• Check internal 10 amp blade fuse. (See pages 22-23 for access to fuse.)</li> </ul>	<p><b>If fuse is good:</b></p> <ul style="list-style-type: none"> <li>• Inspect CrossTalk for signs of electrical damage</li> </ul>	
<b>Not Charging</b>	<ul style="list-style-type: none"> <li>• Recharge batteries to test</li> </ul>	<p>• Check <i>Charging Light</i> is illuminated.</p> <p>Solid or flashing is OK.</p>	<p><b>If light is off:</b></p> <ul style="list-style-type: none"> <li>• Make sure the solar panel is:               <ul style="list-style-type: none"> <li>- clean</li> <li>- facing south</li> <li>- in full sun</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• While the solar wires are unplugged from CrossTalk, check voltage of solar wires (minimum of 15V on a sunny day.)</li> </ul>	<p><b>If low or no voltage:</b></p> <ul style="list-style-type: none"> <li>• Follow the wires to the panel and check for damage.</li> <li>• Ensure wires are connected with correct polarity</li> </ul>
<b>Not Flashing</b>	<ul style="list-style-type: none"> <li>• Check batteries for output of 12V</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure CrossTalk is set to the proper setting for desired flash pattern</li> </ul>	<ul style="list-style-type: none"> <li>• Check <i>Status Light</i> for flashing when push button is activated.</li> </ul>	<ul style="list-style-type: none"> <li>• Check inputs for push button</li> <li>• Ensure wires are secure in ports</li> </ul>	<ul style="list-style-type: none"> <li>• Check LEDs for 12V output when activated</li> </ul>





## FUSE LOCATION & REPLACEMENT

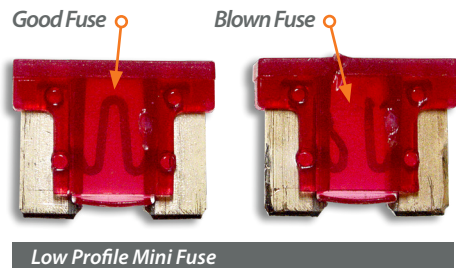
Access the CrossTalk components by removing the CrossTalk from the control box. Turn the CrossTalk onto the face to reveal 4 screws on the backside of the housing on the corners. Loosen each screw until the face cover easily separates from the back of the housing. The screws will remain in the housing.

Carefully lay the cover over as to not break the connection of the aerial wire.

Locate the 10 amp Low Profile Mini Fuse at the bottom left of the control panel.

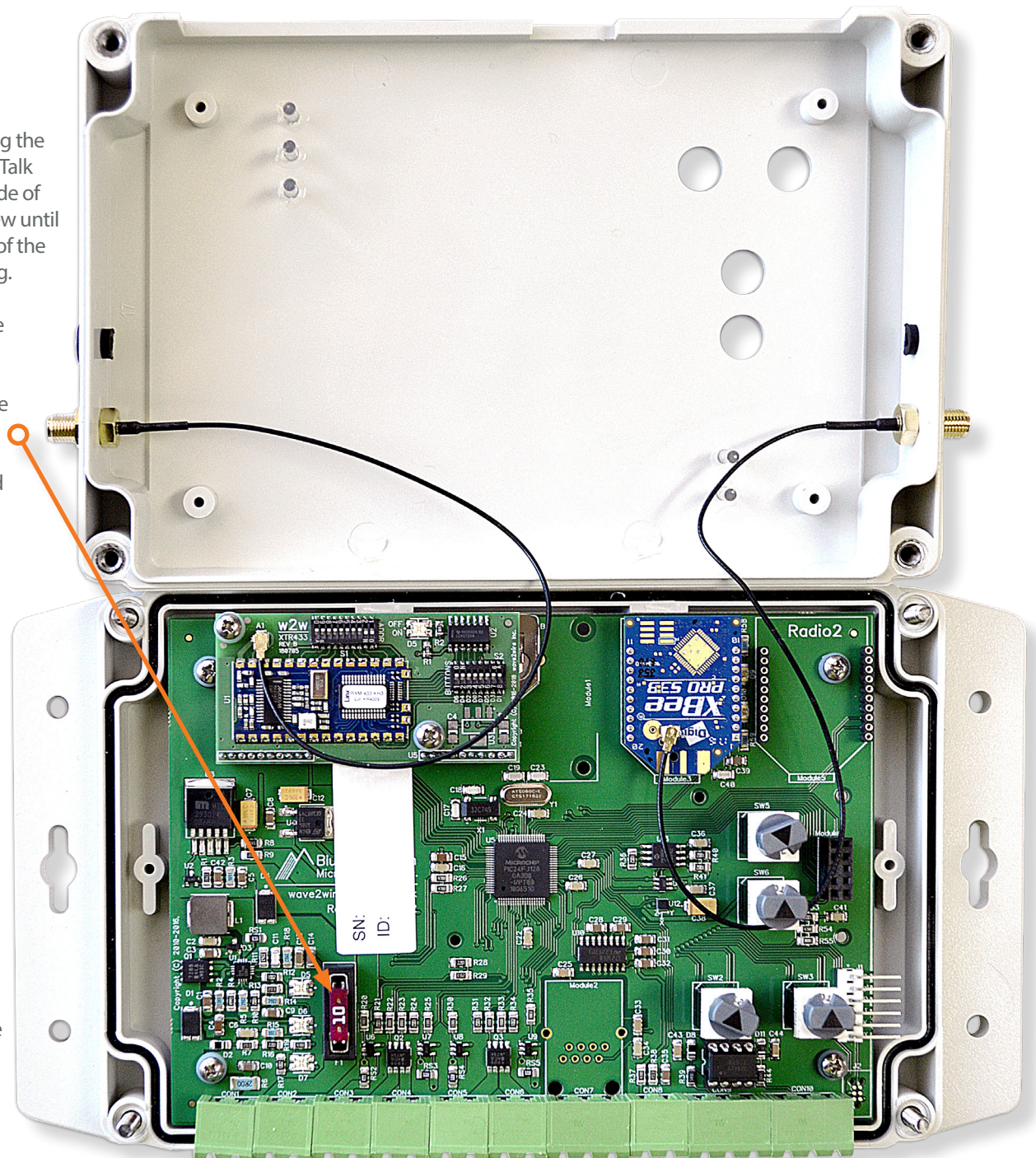
Remove the fuse by grasping with fingers and gently rocking the fuse side to side.

Inspect the fuse by looking through the translucent housing at flat wire in the center. If the wire is solid, the fuse is good. In a blown fuse, the wire will be broken.



Replace the blown fuse with a new one by inserting into the port and firmly pressing it into place.

Align the covers and twist the screws until the covers are snug. Remount the CrossTalk to control box.





## KEY FOB BATTERY REPLACEMENT

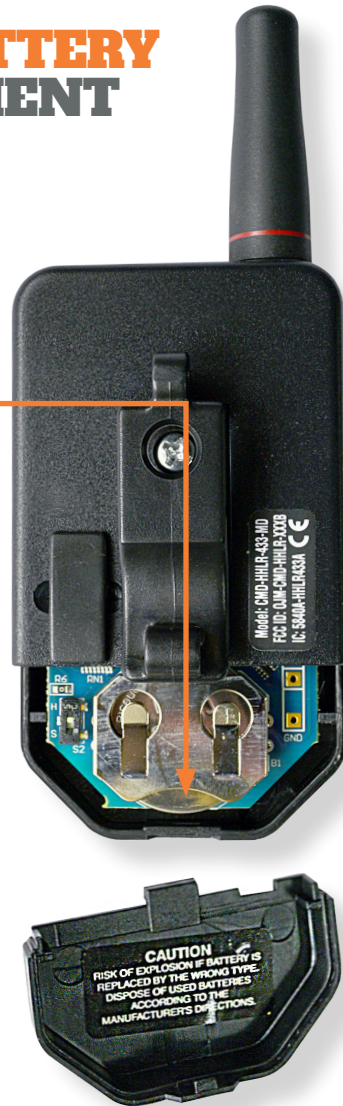
Slide the battery compartment cover off using a flat head screw driver.

Locate the battery.

Remove the battery by using a fine tipped tool to wedge behind the battery and slide it out of the housing. Be careful to not damage other parts while using the tool.

Replace with a fresh CR2032 3V battery. Ensure that this side is facing up when sliding it into the housing.

Replace the key fob battery compartment cover and resume use.



## MANUFACTURER'S WARRANTY

1. The manufacturer warrants that all products manufactured by K&K Systems, Inc. will be free from defects in material and workmanship for a period of one (1) year from date of shipment, subject to the conditions and restrictions contained herein.
2. This warranty does not apply to a product that has not been installed or maintained in accordance with the manufacturer's instructions, has been subjected to damage in an accident, abused or neglected during operation, repaired or modified by persons other than manufacturer, its employees or authorized agents, or failed to have normal maintenance.
3. The buyer expressly agrees that the buyer's sole remedy and the manufacturer's sole responsibility, in respect to a warranty claim, is exclusively limited to repair or replacement at the manufacturer's option, of product or a portion thereof found by the manufacturer to be defective. The manufacturer is not responsible for labor or other expended charges by buyer including transportation charges, and shall not be liable for any incidental or consequential damages connected with repair of a product deemed to be defective or with installation or replacement of repaired product. Further, the manufacturer disclaims any liability for any incidental or consequential damages, including lost or duplicated time or expense accruing for any reason, to the owner or user or any products sold by the manufacturer, whether claim is made in contract or in tort or under any theory of warranty, negligence or otherwise.
4. The manufacturer reserves the right to make changes in its products from time to time, without incurring any obligation to incorporate such improvements in any products previously sold or in service.
5. The terms and conditions of the warranty cannot be altered without the written consent of the manufacturer.
6. The foregoing warranty is exclusive and in lieu of all other express, statutory and implied warranties **INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE.** There are no warranties which extend beyond the language in the previous six (6) paragraphs.

If you have any further questions, please feel free to call us at our toll-free number, 888-414-3003, email [info@k-systems.com](mailto:info@k-systems.com) or look us upon the internet at [www.k-systems.com](http://www.k-systems.com).



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