



## TIER 2 ZIGBEE MULTI-SENSOR ADVANCED POWERSTRIP+



TS1811

## 7 OUTLET TIER 2 ADVANCED POWERSTRIP+ ZIGBEE® MULTI-SENSOR

Premium quality, fireproof surge protection that reduces standby and active power waste from electronics

### OVERVIEW

The Tier 2 ZigBee® Multi-Sensor Advanced PowerStrip+ (APS+) provides premium quality surge protection and reduces the amount of standby and active power wasted by electronics.

The APS+ is designed for use with set-top box systems.

The APS+ includes a low voltage RJ11 port which supports the connection of a Zigbee®-enabled multi-sensor that senses radio frequency (RF), infrared (IR), and motion.

The APS+ includes advanced power measurement and patented auto-threshold detection. This allows the APS to accurately support all types of televisions from old to new high efficiency types. It provides automation to reduce wasteful standby and active power, and it is suitable for TV/home theater applications.

In addition to standard power switching, the APS+ also supports "soft switching" via high-level CEC commands from the multi-sensor to an HDMI port on the TV; this feature is known as TAV-Link and will result in placement of connected HDMI devices into a power-saving state by high-level commands.

### KEY FEATURES

- 7 Outlets
  - 2 Always On Outlets (1 outlet transformer spaced)
  - 5 Switched Outlets (1 outlet transformer spaced)
- 15A resettable circuit breaker
- Auto threshold detection
- Intelligently adjusts to new equipment
- True RMS power sensing
- 72,000 Amps/1080 Joules
- Ceramic surge protection
- Low-voltage, optically-isolated RJ11 input
- LED status indication (ground, surge status, switched)
- <40dB noise filtering
- Angled space saver plug
- ZigBee enabled multi-sensor
- CEC TAV-Link function

### FIREPROOF SURGE PROTECTION

Traditional surge suppression products use standard MOV (metal oxide varistor) components. TrickleStar Tier 2 APS+ incorporates advanced surge protection technology. The MOVs are encased in ceramic and are capable of suppressing more energy and dissipating heat faster than traditional MOVs. More importantly, the ceramic casing is fireproof and therefore is capable of preventing fire during surge conditions.

### PRODUCT WARRANTY

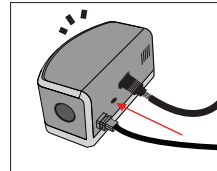
10-year product warranty  
\$20,000 connected equipment warranty



## ZIGBEE® MULTI-SENSOR

- Detects ZigBee RF4CE\* RF, IR remote control signals and motion. Includes a configurable countdown timer that will switch off the TV and peripherals if no RF, IR or motion is detected.
- Status LED flashes when RF, IR or motion is detected.
- Patented sensing hardware and algorithm looks for RF and IR commands first. It then looks for motion after a period where no RF or IR commands are detected.
- Supports high level CEC\* commands via TAV-Link cable to the TV and to the peripherals for soft switch off.
- TAV-Link functionality allows “smart” TVs to store their data and settings safely before powering down. TAV-Link also allows gaming consoles to enter an energy-saving mode earlier and without any corruption of data.
- Supports RF4CE pairing with DirecTV® and Comcast® remote controls (can pair up to 4 remotes).
- Includes a soft chirp, piezo buzzer to warn of a pending shutdown 10 minutes prior to shutdown.
- Manual on/off button.

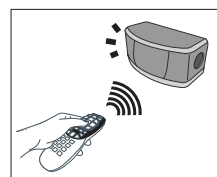
## PAIRING DirecTV® or Comcast® REMOTE CONTROL



### STEP 1

Quickly press the pinhole pairing button located on the back of the multi-sensor to trigger the pairing process.

A blue LED will flash for a period of 15 seconds - indicating the multi-sensor is in pairing mode.



### STEP 2

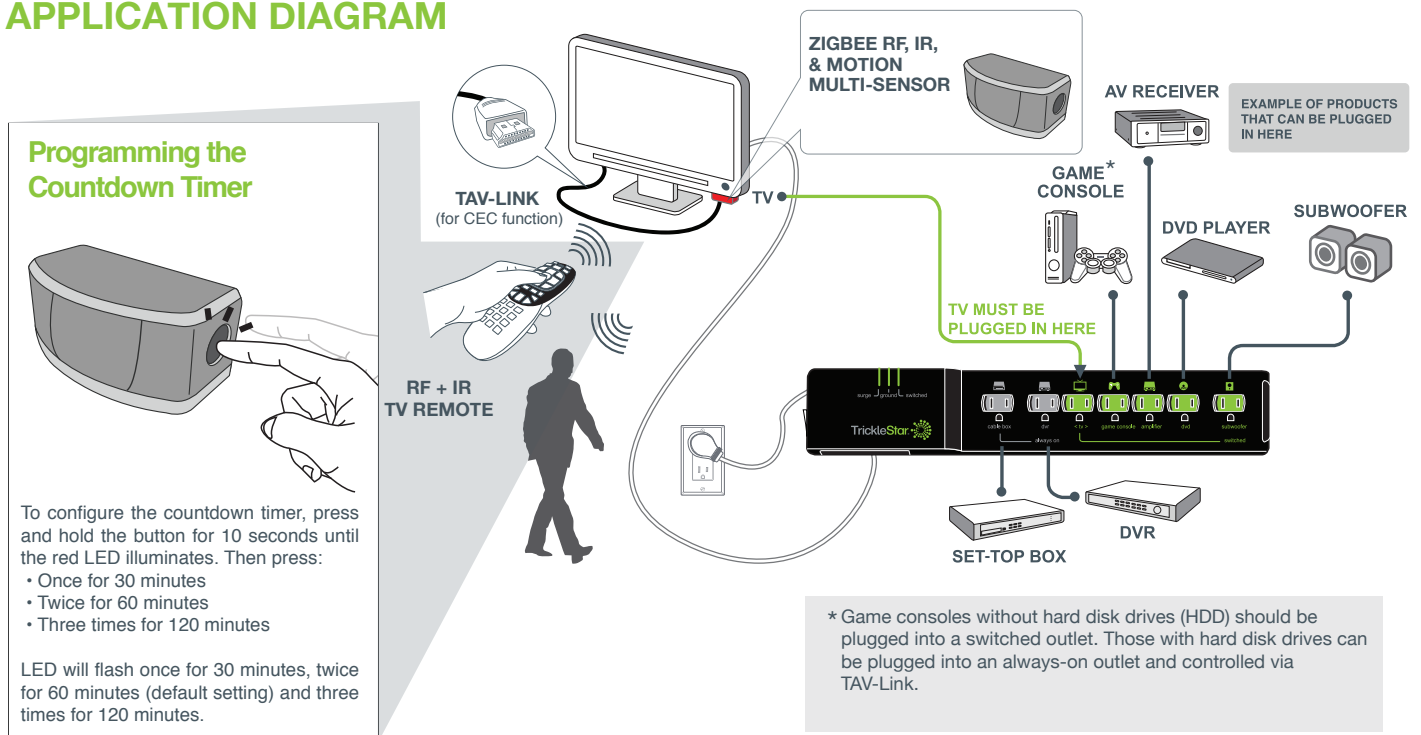
Place the RF4CE DirecTV or Comcast remote near the sensor (within two inches) and press the 0 key on the remote until the red LED illuminates. Repeat with other RF4CE remote controls (up to four).

The multi-sensor will exit pairing mode after 15 seconds if no RF button presses are detected.

\*RF4CE (Radio Frequency for Consumer Electronics) is a radio frequency protocol for audio and video device remote controls. It provides two-way, high-speed communications which allow remote signals to transmit through cabinets, obstacles, walls and floors.

\*CEC (Consumer Electronics Control) is the control protocol found in HDMI.

## APPLICATION DIAGRAM





# TIER 2 ZIGBEE® MULTI-SENSOR ADVANCED POWERSTRIP+



## ELECTRICAL SPECIFICATIONS

### TIER 2 APS+

#### FOR INDOOR USE

Operating Voltage	120 VAC +/- 10% 60Hz
Output Current	15 Amps RMS
Maximum Total Load	1800W
Noise Filtering	<40dB
Power Consumption	<1W at 120VAC, 60Hz (in all modes of operation)
RJ11	3.3V & Optically Isolated
APS+ Cord Length	4 ft. (1.2 meters)
Outlets (7 Outlets)	2 Always ON (1 outlet transformer spaced)  5 Switched Outlets (1 outlet transformer spaced)
LED Status Indication	Ground, Surge, Switched
Surge Protection	72,000 Amps / 1080 Joules for all outlets (Ceramic Surge Protection)
Input Current	15A Resettable Circuit Breaker

### MULTI SENSOR

#### FOR INDOOR USE

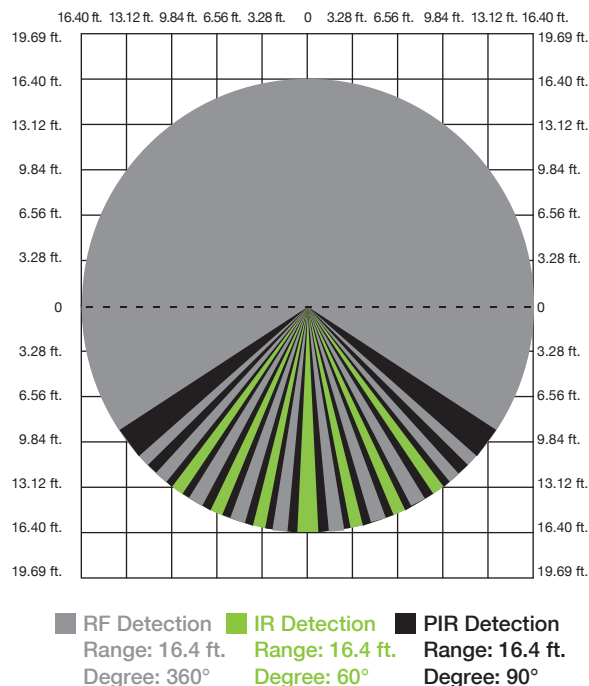
Voltage	3.3V
IR Detection Angle/Range	60°/Up to 16.4 ft. (5 meters)
PIR Detection Angle/Range	90°/Up to 16.4 ft. (5 meters)
RF Detection Range	360°/Up 16.4 ft. (5 meters)
Cord Length	8 ft.
Sensor Detection	Infrared, Passive Infrared and ZigBee RF4CE

## PHYSICAL SPECIFICATIONS

Operating Temperature	32° to 113° F
Storage Temperature	14° to 140° F
Humidity	5 to 90% N/C
IP Rating	IP20

## PIR & IR DETECTION PATTERN

### SENSOR OPTICAL VIEW PATTERN



## APPROVALS

Conformity to product standards for safety and EMC  
UL (US & Canada), 2002/95/EG (RoHs), 2002/96/EC (WEEE),  
1999/5/EC (RTTE), FCC Approved, ZigBee Certified

## ORDER INFORMATION

# TS1811

7 Outlet APS+, 1080 Joules,  
4 ft. Cord, Auto Threshold,  
Zigbee Multi-Sensor, TAV-Link



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:  
(1) this device may not cause harmful interference, and  
(2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void  
your authority to operate the equipment.

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REV 5 Jan 2016



## Quick Start Guide & Instruction Manual

### PRODUCT INFORMATION

# TS1811

7 Outlet Advanced PowerStrip+,  
1080 Joules, 4 ft. Cord, Auto Threshold,  
Zigbee Multi-Sensor, TAV-Link

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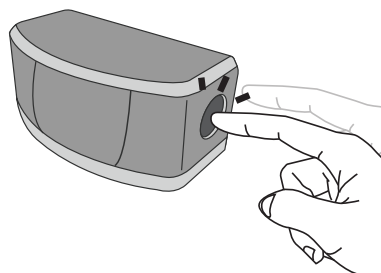


For technical support  
go to [www.tricklestar.com](http://www.tricklestar.com)  
or call 1-888-700-1098

[www.tricklestar.com](http://www.tricklestar.com)

# Installation

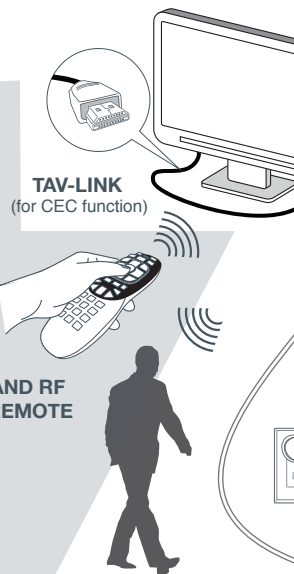
## Programming the Countdown Timer



To configure the countdown timer, press and hold the button for 10 seconds until the red LED illuminates. Then press:

- Once for 30 minutes
- Twice for 60 minutes
- Three times for 120 minutes

LED will flash once for 30 minutes, twice for 60 minutes (default setting) and three times for 120 minutes.



This Product is not for use with aquariums and all other water-related products. Use only indoors and in dry locations. The Connected Device Warranty only protects against damage to properly connected devices where TrickleStar has determined, in its sole discretion, that the damage resulted from an occurrence, and does not protect against acts of God (other than lightning) such as flood, earthquake, war, vandalism, theft, normal-use wear and tear, erosion, depletion, obsolescence, abuse, damage due to low voltage disturbances (i.e. brownouts or sags), non-authorized program, or system devices modification or alteration. This warranty contains the sole warranty of TrickleStar, there are no other warranties, expressed or, except as required by law, implied, including the implied warranty or condition of quality, merchantability or fitness for a particular purpose, and such implied warranties, if any, are limited in duration to the term of this warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

In no event shall TrickleStar be liable for incidental, special, direct, indirect, consequential or multiple damages such as, but not limited to, lost business or profits arising out of the sale or use of any Product, even if advised of the possibility of such damages. This warranty gives you specific legal rights, and you may also have other rights, which may vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damage, so the above limitations may not apply to you.

This warranty is valid only for the original purchaser of the product. All damage claims against the product must be made within 15 days from the date of the occurrence and must be accompanied by a receipt for the damaged devices or the warranty is void.

Warranty is valid in USA and Canada.

## MAKING A WARRANTY CLAIM

Go to: [www.tricklestar.com](http://www.tricklestar.com) and print our claim form and email it to [warranty@tricklestar.com](mailto:warranty@tricklestar.com)

Provide the following information:

- Product part number
- A list of the devices that were connected to the Product at the time of the occurrence
- A list of the devices that were damaged during the occurrence and the extent of the damage
- The date of the occurrence
- Where you purchased the Product
- When you purchased the Product
- A copy of original receipt

A customer service representative will then instruct you on how to forward your devices, receipt and Product in use during the "occurrence" and how to proceed with your claim.

## COPYRIGHT & DISCLAIMER

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REV 5 Jan 2016

# Product Warranty

The lifetime of the product (hereafter referred to as "Product Lifetime"), is 10 years.

TrickleStar warrants to the original purchaser that for the Product Lifetime, it shall be free of defects in design, assembly, material, or workmanship, and will repair or replace, at its option, any defective product free of charge.

## CONNECTED DEVICE WARRANTY

TrickleStar will repair or replace, at its option, any devices which are damaged by a transient voltage surge/spike or lightning strike, (an "Occurrence"), while properly connected through the Product to a properly wired AC power line with protective grounding.

If applicable, the telephone line, and/or network line must be properly connected and installed, and the antenna cable line must also be properly connected and installed, as determined by TrickleStar at its sole discretion.

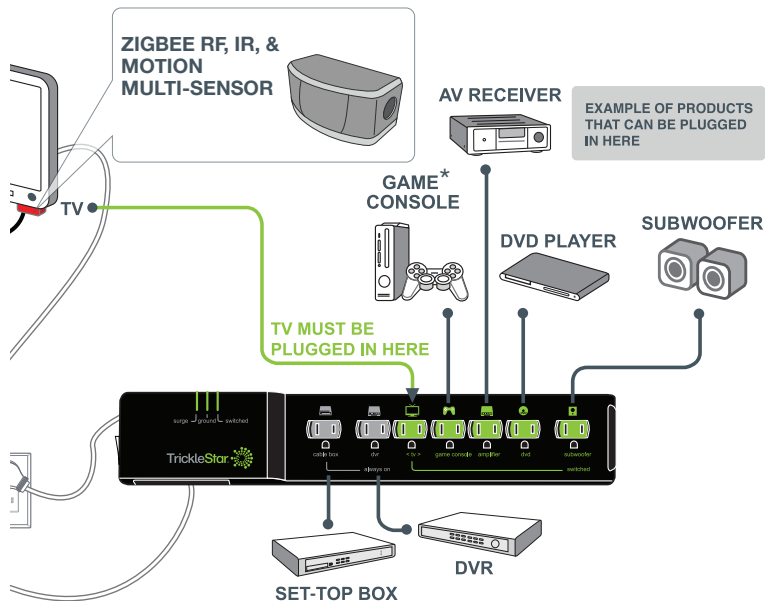
This Connected Device Warranty is a limited warranty, subject to the limitations and exclusions set forth herein. TrickleStar will repair or replace the damaged connected devices, at TrickleStar's option, an amount equal to the fair market value of the damaged devices or the original purchase price of the devices, whichever is less, up to the maximum of \$20,000.

The fair market value of the devices shall be the current value of the devices specified in the most recent edition of the Orion Blue Book by Orion Research Corporation, Roger Rohrs Publisher.

TrickleStar reserves the right to review the damaged Product, the damaged devices, and the site where the damage occurred. All costs of shipping the Product and the damaged devices to TrickleStar for inspection shall be borne solely by the purchaser. TrickleStar reserves the right to negotiate the cost of repairs. If TrickleStar determines, in its sole discretion, that it is impractical to ship the damaged devices to TrickleStar, TrickleStar may designate, in its sole discretion, a repair facility to inspect and estimate the cost to repair such devices. The cost, if any, of shipping the devices to and from such repair facility and of such estimate shall be borne solely by the purchaser.

Damaged devices must remain available for inspection until the claim is finalized. Whenever claims are settled, TrickleStar reserves the right to be subrogated under any existing insurance policies the claimant may have. All above warranties are null and void if:

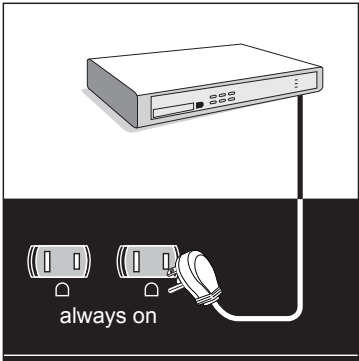
- The Product in use during the occurrence is not provided to TrickleStar for inspection upon TrickleStar's request at the sole expense of the purchaser.
- TrickleStar determines that the Product has not been installed in accordance with the Installation Requirements, altered in any way or tampered with.
- TrickleStar determines that the damage did not result from the occurrence or that no occurrence in fact took place, the repair or replacement of the damaged devices is covered under a manufacturer's warranty.
- TrickleStar determines that the connected devices were not used under normal operating conditions or in accordance with any labels or instructions.
- The Product is not plugged directly into a receptacle.
- The Product is "daisy-chained" together in serial fashion with other power boards, Uninterruptible Power Supplies, other surge protectors or extension cords.
- A three-to-two-prong adapter is used.
- The Product is not used indoors.



\* Game consoles without hard disk drives (HDD) should be plugged into a switched outlet. Those with hard disk drives can be plugged into an always-on outlet and controlled via TAV-Link.

# Installation

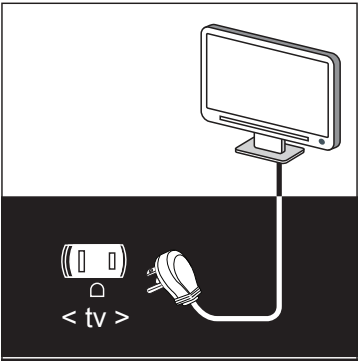
## Step 1



always on

Plug in devices that should always have power to them into the always-on outlets. Eg. DVR and set-top boxes.

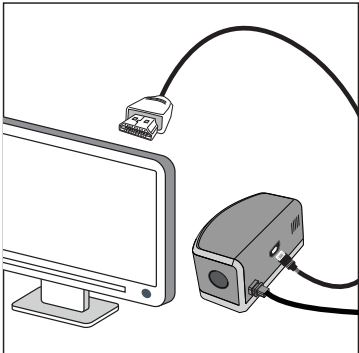
## Step 2



< tv >

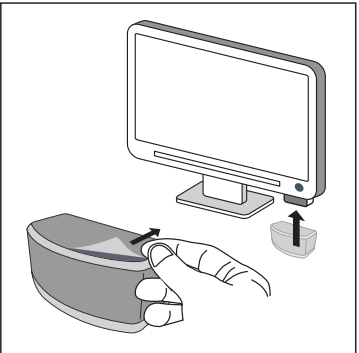
TV must be plugged into this outlet.

## Step 5 - OPTIONAL



Plug the TAV-Link cable into the HDMI port on the TV if you have a smart TV or HDMI connected peripherals.

## Step 6



Remove the backing from the double sided tape on the back of the multi-sensor & affix to or near the TV.

# Troubleshooting

Problem	Solution
No power to outlets	The resettable switch must be at the reset position.
No power at switched outlets	<p>The multi-sensor must be connected to the APS+ and RF or IR signal from any remote must be received to switch on the switched outlets.</p> <p>Alternatively, press the button on the multi-sensor to switch on switched outlets manually.</p>
The TV peripherals do not switch off when the TV is off	<p>Make sure that the TV is plugged into the outlet with the green TV icon.</p> <p>Make sure that the TV peripherals are connected to the green switched outlets (except for TV).</p> <p>The switched outlets will switch off after the TV has been switched off for one minute.</p>
The multi-sensor is blinking on and off every 5 seconds	This is a notification that your TV will shut off in 10 minutes.
The TV keeps switching off after 30/60/120 minutes	The power saving/countdown timer shuts off the TV and peripherals after 30/60/120 minutes if no RF/IR signal or motion is sensed. To reset the time for another 30/60/120 minutes, press a button on an RF/IR remote control or move in front of the multi-sensor.



# FAQ

## What can I plug into the APS+?

- Never insert any object other than a plug into the APS+ outlets.
- The APS+ is designed for use with indoor AV equipment. Do not use outdoors.
- Never use the APS+ for appliances other than AV equipment, such as a fridge, electric kettle, electric oven or microwave.
- Never use the APS+ for power tools such as power drills, bench saws and other power tools.

## What AV equipment should I plug into the grey always on outlets?

- Plug in Audio Visual (AV) equipment that need constant power for recording features, timers and program guides such as:
  - TiVo
  - DVD recorders
  - Devices with a hard disk drive (HDD)
  - Digital receivers
  - Set-top boxes
  - Game console with a HDD

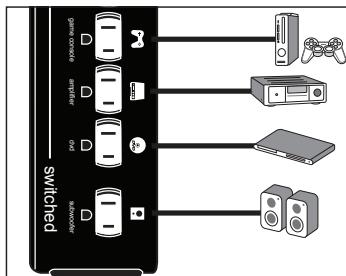
## What AV equipment should I plug into the switched outlets?

- The TV must be plugged into the green outlet labelled < tv >. Plug in devices such as the following to the remaining switched outlets:
  - Blu-ray, DVD and CD player
  - Amplifiers
  - Game consoles without a HDD
  - Home theatre speaker systems

## How does the APS+ save energy?

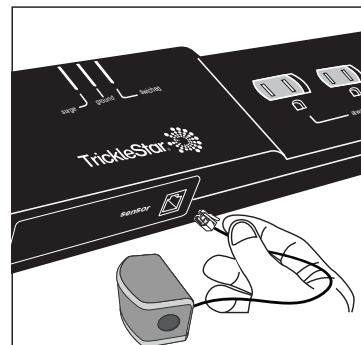
- The APS+ saves energy through:
  - 1) Master control
    - All switched outlets are automatically switched off within one minute after the TV is switched off.
  - 2) Energy saving feature
    - In TV mode all switched outlets are automatically switched off after 135 minutes if there is no RF, IR remote control signal or movement detected.
    - In music mode all switched outlets are automatically switched off after eight hours if there is no RF, IR remote control signal or movement is detected.

### Step 3



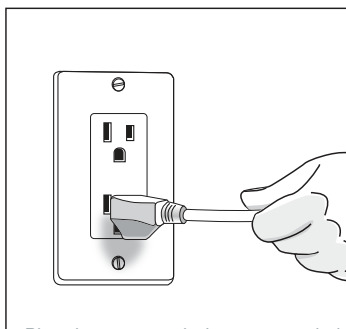
The icons on the outlet strip serve ONLY as examples of home entertainment devices that can be plugged into these outlets. For example, a DVD may be plugged into any of the four switched outlets as they all operate the same.

### Step 4



Plug the multi-sensor into the port on the side of the power strip that looks like a phone jack.

### Step 7

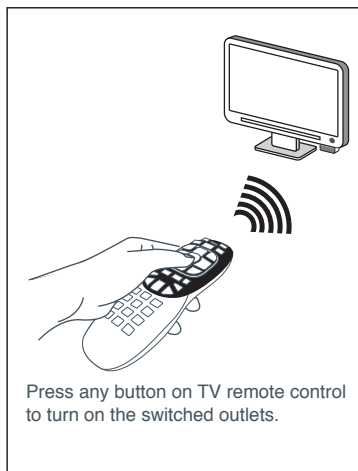


Plug the power strip into a grounded receptacle. The ground and surge lights will illuminate - indicating proper grounding and surge protection is functional.

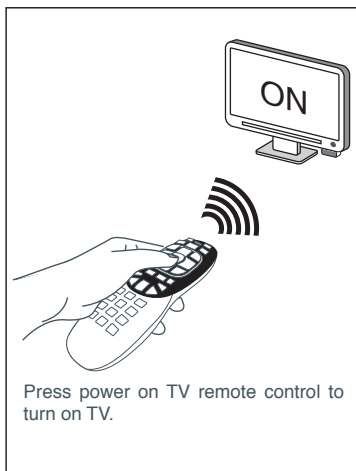


# Operation - TV Mode

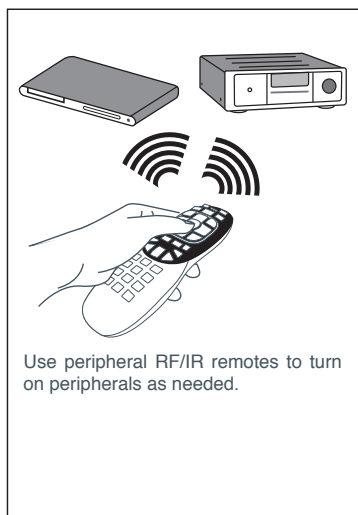
## Step 1



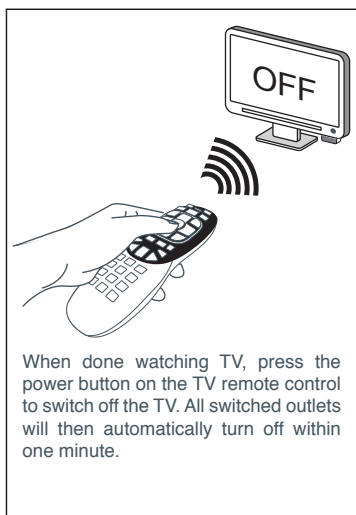
## Step 2



## Step 3



## Step 4



### 1 RF/IR + Movement Multi-Sensor

The ZigBee multi-sensor is connected to the powerstrip via the RJ11 port marked "sensor." Mount the ZigBee multi-sensor on the underside of the TV, near the IR receiver on the TV (typically located next to the TV's power on/off button). The multi-sensor must be located within line of sight of where you normally use your remote controls.

### 2 Power Connection

The Product must only be plugged into a grounded receptacle for surge protection to operate correctly. All connected devices should be plugged directly into the Product. Use of an extension cord, adaptor or other powerstrip in conjunction with the Product will void all warranties.

### 3 Sensor/RJ11 Port

Plug the RF/IR & motion multi-sensor into this port. There will be a soft audible 'click' when the connector is inserted correctly.

### 4 Surge LED

When illuminated, it indicates that the surge protection is functioning normally. If this LED illuminates red or extinguishes at any time, the Product was sacrificed to protect your devices and must be replaced.

### 5 Ground LED

When illuminated, it indicates that the Product is correctly grounded. If not illuminated, there is a grounding problem and you must contact an electrician to properly ground the socket. Surge protection will not work with an improperly grounded outlet.

### 6 Switched Outlets LED

When illuminated, it indicates that the switched outlets are receiving power.

### 7 Resettable Circuit Breaker

All outlets on the Product are protected. If the surge, ground, and switched LEDs are not illuminated and/or connected devices are not receiving power, switch the circuit breaker to activate power.

### 8 Always-On Outlets

Equipment that requires continuous power should be plugged into the always-on outlets.

### 9 <tv> Outlet

The outlet marked <tv> is the control outlet and includes true RMS power measurement.

#### **IMPORTANT**

**THE TV MUST BE PLUGGED INTO THIS OUTLET**

### 10 Switched Outlets

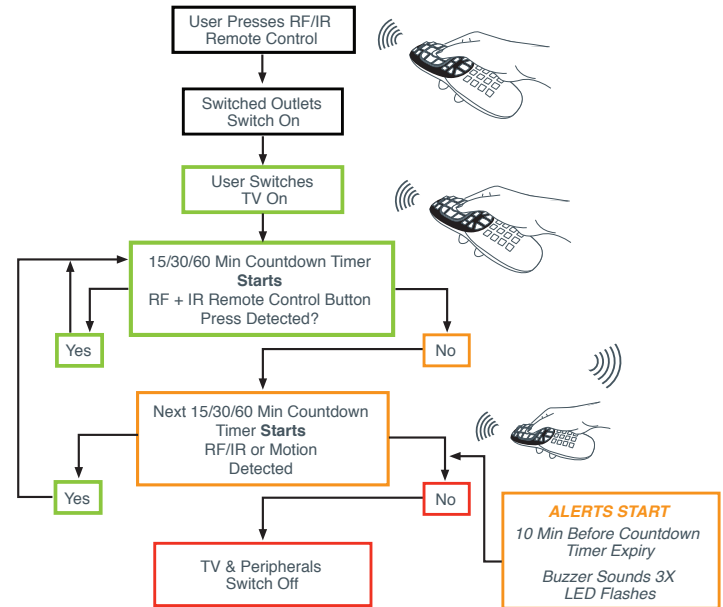
If there is no RF, IR, or motion detected, these outlets will switch off.

## Product Overview



## Energy Saving

**7 Advanced**  
Outlet **PowerStrip+**



### Terms

#### IR

#### IR Signal Sensor

#### PIR Sensor

#### RF

#### Motion

#### Countdown Timer

#### Countdown Period

#### LED

#### Buzzer

- Infrared signal, transmitted by a remote control
- Multi-sensor senses for an IR command
- Multi-sensor uses passive Infrared sensing to detect movement
- Radio frequency, transmitted by a remote control
- Motion detected by PIR
- Time before the switched outlets are automatically switched off
- 30/60/120 minutes (default - 60 min.)
- Red LED located in multi-sensor
- When IR or motion is sensed, the LED will flash
- Buzzer located in the multi-sensor

### Countdown Timer Operation

- For the first 15/30/60 minutes - the multi-sensor senses for RF/IR only.
- For the next 15/30/60 minutes - the multi-sensor senses for RF/IR signal or motion.
- If no RF/IR or motion has been sensed during the 30/60/120 minute countdown period, the switched outlets will switch off automatically.

## Operation - Music Mode

### Step 1



Press any button on AV receiver or DVD/CD player remote control to turn on the switched outlets.

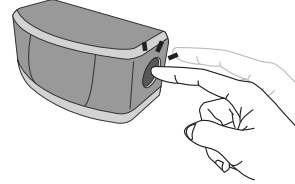
Press power on all music related devices to switch them on.

### Note

- If the TV is not switched on at any time in between, all switched outlets will turn off after eight hours.
- If any RF/IR signal is detected, the countdown timer period will automatically reset for another eight hours.
- If the TV is switched on during music mode, the Advanced PowerStrip+ will switch to TV mode.

## Operation - Countdown Timer Setting

### Step 1



To configure the countdown timer, press and hold the button for 10 seconds until the red LED illuminates. Then press:

- Once for 30 minutes
- Twice for 60 minutes
- Three times for 120 minutes

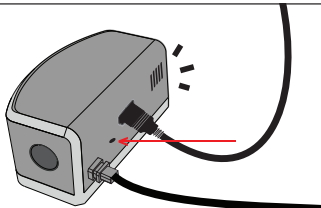
After countdown timer is set, the LED will flash the number of times that timer has been set to.

### Note

- The sensor has a default buzzer notification that will sound three times during the 10 minute countdown timer period.
- To disable the audible notification, press and hold the button for 10 seconds until the red LED illuminates, then press the button four times. The red LED will flash four times to confirm the countdown timer buzzer has been disabled.

## Operation - RF Remote Control and Pairing

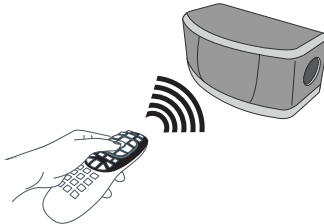
### Step 1



Quickly press the pinhole pairing button located on the back of the multi-sensor to trigger the pairing process.

A blue LED will flash for a period of 15 seconds - indicating the multi-sensor is in pairing mode.

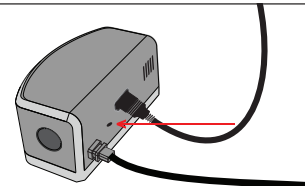
### Step 2



Place the RF remote control near the sensor (within two inches) and press the 0 key on the remote until the red LED on the sensor illuminates. Repeat with other RF remote controls (up to four).

## Operation - Delete Paired RF Remote Control Address

### Step 1



Press and hold the pin-hole pairing button for five seconds.

Blue LED will illuminate for one second - indicating all paired remote control addresses have been erased.