

## SELF-POWERED + RADIO FREQUENCY = TRUE WIRELESS

Energy harvesting LevNet RF transmitters operate indefinitely without external power or batteries. For a true zero-maintenance wireless device, the transmitter receives power from the motion of a switch actuation, light on a solar cell or temperature differentials in the environment. Transmitters communicate with LevNet RF receivers via radio frequency. Operating in the 315MHz band provides minimal competing traffic and greater transmission range than other wireless technologies.

## GREEN SOLUTIONS

### Energy Savings

- Lowest power consumption on wireless receivers at less than one Watt per device
- Place virtually anywhere and control any compatible wireless device within range
- Self-powered and self-charging, uses zero external power consumption to operate

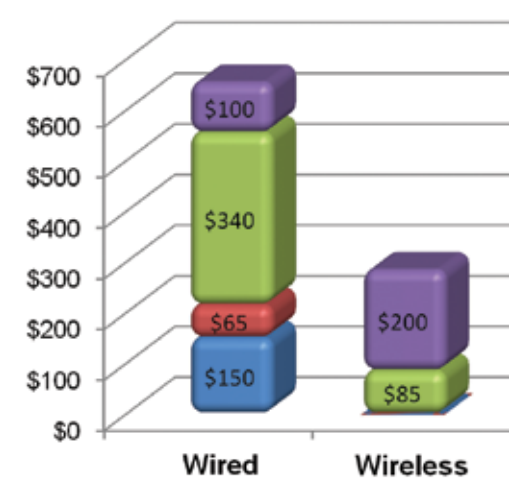
### Material Savings

- Reduce materials and time spent on installation with no new wires to run
- Reduce monthly testing and maintenance costs with no batteries or external power required

\* Leviton is part of the EnOcean Alliance. LevNet RF Solutions are compatible with other EnOcean Alliance wireless devices.



## WIRED VS. WIRELESS COSTS



\* Installation time per device: 45-50 minutes for hardware vs. 10-15 minutes for wireless devices

## PRODUCT COMPATIBILITY MATRIX

	LOW VOLTAGE RECEIVERS		SENSORS				SWITCHES							TRANSMITTERS			ACCESSORIES
	WSoRC-200	WSoRC-300	WSc04-IRW	WSc15-IRW	WSc04-IRW	WScPC-00W	WSSoS-P	WSSoS-D	WSSoS-D2	WSSoS-R	WSSoS-H	WSSoS-E	WSSoS-E2	WSSLT-010	WSSLT-R10	WSSLT-GP0	WSoRF-300
Basic Wall Switch Receivers	-	-	x	x	x	A	x	-	-	-	-	-	-	-	-	-	x
Advanced Wall Switch Receivers	x	x	x	x	x	A	x	x	x	x	x	x	P	P	P	-	x
Line Voltage Receivers	x	x	x	x	x	A	x	x	x	x	x	x	x	x	x	-	x

X - Indicates compatibility P - Indicates partial support (PTM mode only) A - Indicates product is compatible only with WSTxx With Leviton v1.19 or newer firmware

## PUTTING TOGETHER A LEVNET RF SYSTEM

**Step 1:** Determine what **LOADS** you want to control - lighting, HVAC, lamp, TV, etc.

**Step 2:** Pick the appropriate **RF RECEIVER** and/or **TRANSCIVER**

**Step 3:** Pick the appropriate self-powered wireless **RF TRANSMITTER** (sensor or switch)

**Step 4:** **PAIR** the devices to communicate with each other

LevNET RF Self-Powered Wireless Solutions	
Frequency	315MHz
Range	50-150 feet
Listings	FCC Certified for Wireless Communication (U.S.), IC. Certified (Canada)*
Warranty	Limited 5-year

\*Excludes WSD02-020.

NAFTA and Made in USA models available - visit [www.leviton.com/NAFTA](http://www.leviton.com/NAFTA) or [www.leviton.com/USA](http://www.leviton.com/USA).

## RECEIVERS AND TRANSCIVERS

### WALL SWITCH RECEIVERS

	BASIC WALL SWITCH RECEIVERS with Color Change Kit WSS10-0DZ   WSS10-GDZ Use for single loads and 3-way switching. Condensed pairing for WSC and WSSoS-P only.	ADVANCED WALL SWITCH RECEIVERS with Color Change Kit WSS10-0UZ   WSS10-GUZ Use for larger rooms with multiple loads. Advance pairing for rocker, momentary and toggle.
<b>Input Voltage</b>	120-230-277VAC	
<b>Power Consumption</b>	120V < 1/2 Watt; 277V < 3/4 Watt	
<b>Memory</b>	Stores up to 10 Transmitter IDs	
<b>Button Pairing Modes</b>	WSSoS-P, WSCxx	Rocker, Momentary and Toggle
<b>Vacancy Confirmation</b>	30 seconds	
<b>Mode</b>	Presentation	
<b>Time Delay</b>	2 min (test), 10, 20, 30 min	
<b>Load Rating</b>	<b>Incandescent:</b> 800W @ 120V, 2000W @ 277V <b>Fluorescent Ballasts:</b> 1200VA @ 120V, 2700VA @ 277V <b>Motor:</b> 1/4 HP Load @ 120V <b>For non-neutral models:</b> 25W minimum load required (reduce range by 15%)	
<b>Additional Listings</b>	ETL/C-ETL: UL508, Title 24 Compliant	

All WSS10 models ship with a Color Change Kit which includes a White, Ivory and Light Almond faceplate. Gray and Ebony faceplates available in quantities of 25.

### RELAY RECEIVER MODULES

	3-WIRE RELAY RECEIVERS WSP05-010   WST05-010 WSP05-020   WST05-020 WSP05-080   WST05-080	5-WIRE RELAY RECEIVERS WSP12-010   WST12-010 WSP12-020   WST12-020 WSP12-080   WST12-080 WSP02-R10   WST02-R10 Utilizes isolated relay
<b>Memory</b>	Stores up to 30 Transmitter IDs	
<b>Power Supply Input</b>	<b>WSx05-010:</b> 120VAC, 50/60Hz <b>WSx05-020:</b> 277VAC, 50/60Hz <b>WSx05-080:</b> 240VAC, 50/60Hz	<b>WSx12-010:</b> 120VAC, 50/60Hz <b>WSx12-020:</b> 277VAC, 50/60Hz <b>WSx12-080:</b> 240VAC, 50/60Hz <b>WSx02-R10:</b> 24VAC, 50/60Hz
<b>Max Loads/Contact Ratings</b>	<b>Tungsten/Incandescent:</b> <b>WSx05-010:</b> 500W <b>WSx05-020:</b> 1150W <b>WSx05-080:</b> 1000W <b>Fluorescent Ballast:</b> 3A <b>General Duty:</b> 6A <b>A300 Pilot Duty:</b> <b>WSx05-010:</b> 120VA <b>WSx05-020:</b> 277VA <b>WSx05-080:</b> 240VA	<b>Tungsten/Incandescent:</b> 1500W @ 120VAC / 500W @ 120VAC; 3000W @ 240VAC / 1000W @ 240VAC; 3400W @ 277VAC / 1100W @ 277VAC <b>Fluorescent Ballast:</b> 8A (N.O. Contacts); 2A (N.C. Contacts) <b>General Duty:</b> 16A (N.O. Contacts); 5A (N.C. Contacts) <b>A300 Pilot Duty:</b> 72VA @ 24VAC, 360VA @ 120VAC, 720VA @ 240VAC, 830VA @ 277VAC <b>Motor Load:</b> 60 LRA, 10 FLA, 1/2HP @ 120VAC, 1HP @ 240VAC, 1HP @ 277VAC <b>Other Devices:</b> 16A
<b>Output Channels</b>	1 FORM A Relay	1 FORM C Relay COM, N.O., N.C.
<b>Time Delay</b>	15 min	
<b>Additional Listings</b>	ETL: UL244A and UL2043, C-ETL: CSAc22.2#14-05 For <b>WSx02-R10:</b> ETL: UL244A (pending), C-ETL: CSAc22.2#156 (pending)	

WSTxx models: include 1/2" threaded nipple and external antenna  
WST12 models: include repeater function

### PLUG-IN RECEIVERS

	PLUG-IN DIMMER RECEIVER WSG0S-D1T Dimming control of devices	PLUG-IN ON/OFF RELAY RECEIVER WSG0S-S1T Relay (on/off) control of devices
<b>Memory</b>	Stores up to 30 unique Transmitter IDs	
<b>Power Supply Input</b>	120VAC, 60Hz	
<b>Dimmer Output</b>	120VAC, 300W max (resistive) incandescent or other dimmable loads only - no motor loads	-
<b>Output Channels</b>	1 dimming or ON/OFF output	-
<b>Output Rating</b>	-	<b>General:</b> 6A <b>Ballast:</b> 3A <b>Tungsten:</b> 500W <b>Motor:</b> no motor loads
<b>Time Delay</b>	15 min	
<b>Additional Listings</b>	ETL: UL244A (pending), C-ETL: CSAc22.2#156 (pending)	

### ROOM CONTROLLERS AND RELAY RECEIVERS

	2, 3, AND 4-CHANNEL ROOM CONTROLLER WSoRC-200 WSoRC-300 WSoRC-400 Unified control of lights with power packs and low voltage sensors	2-CHANNEL SHADE CONTROLLER WSoRC-500 Enables manual and automated control of window shades and blinds	4- AND 8-CHANNEL RELAY RECEIVER WSPAS-LV4 WSPAS-LV8 Connects wireless switches and sensors to new or existing industrial systems
<b>Channels</b>	<b>WSoRC-200:</b> 2-in/2-out <b>WSoRC-300:</b> 1-in/3-out <b>WSoRC-400:</b> 0-in/4-out	-	-
<b>Output Channels</b>	-	1 = up/down 2 = up/down	<b>WSPAS-LV4:</b> 4, Form C - N.O. and N.C. Dry Contacts <b>WSPAS-LV8:</b> 8, Form A - N.O. Dry Contacts
<b>Power Supply Input</b>	8-30VDC, 40mA	8-30VDC, 40mA	8-28VAC or 8-30VDC, 250mA max
<b>Output Rating</b>	0-30VDC, 130mA max	0-30VDC, 130mA max	2A @ 30VAC/VDC
<b>Relay Driver</b>	30VDC max, 100mA max	30VDC max, 100mA max	-
<b>Repeater</b>	Field configurable	-	-
<b>Time Delay</b>	15 min		

Power supply not included.

### DIMMER MODULES

	RF CONSTANT VOLTAGE LED DIMMER WSD02-010	CONSTANT VOLTAGE LED DIMMER WSD02-020	0-10V RF DIMMER WITH ON/OFF CONTROL AND SENSOR INPUT WSD01-001
<b>Memory</b>	Stores up to 30 Transmitter IDs	-	Stores up to 30 Transmitter IDs
<b>Power Supply Input Rating</b>	8-28VDC, 40mA (not incl. load current)		12-28V, 40mA
<b>Sensor Input Rating</b>	0-28VDC, <1V is low, >3V is high		
<b>Output Rating</b>	Constant Voltage 0-28VDC, 5A max		4mA, 0-10V Output
<b>Output Rating, Switched Output</b>	-		5A DC, Isolated, 30VDC max
<b>Input Channels</b>	1 Motion Detector/Sensor Input; 1 Wired Control Switch		1 Motion Detector/Sensor Input
<b>Output Channels</b>	1 Output PWM Dimming	1 Output 0-10V, 1 Switch Output	
<b>Time Delay</b>	15 minutes		

Power supply not included.

## TRANSMITTERS

	OCCUPANCY SENSORS WSc04-IRW   WSc15-IRW WSc04-10W		LIGHT SENSORS WScPC-00W
<b>Power Consumption</b>	Zero		
<b>Photocell</b>	-		0-94.8FC (0-1020 LUX)
<b>Transmission Interval</b>	60 seconds (+/- 10 sec)		Upon >20FC (200 LUX) changes
<b>Minimum Light Required</b>	4FC (40 LUX)		
<b>Minimum Charge Time to Begin Operation</b>	1 minute @ 20FC (200 LUX)		
<b>Maintain Charge Time</b>	3 hours per 24 hours @ 20FC (200 LUX)		
<b>Operating Life at Full Charge</b>	48 hours		
<b>Additional Listings</b>	Title 24 Compliant		

### REMOTE SWITCHES Controls virtually any on/off device

	REMOTE SINGLE PUSH ON/OFF DECORA™ SWITCH* WSSoS-Pox	SINGLE/DUAL ROCKER DECORA™ SWITCH* WSSoS-D0x WSSoS-D2x	HANDHELD 4-BUTTON REMOTE WSSoS-ROW	HOTEL KEY CARD SWITCH WSSoS-HoW	3 X 3 SINGLE/DUAL ROCKER SWITCH WSSoS-E0W WSSoS-E0B WSSoS-E2W WSSoS-E2B
<b>Buttons</b>	1 Button	<b>WSSoS-D:</b> 2 Buttons (1 Rocker) <b>WSSoS-D2:</b> 4 Buttons (2 Rockers)	4 Buttons (2 Rockers)	-	<b>WSSoS-E:</b> 2 Buttons (1 Rocker) <b>WSSoS-E2:</b> 4 Buttons (2 Rockers)
<b>Card Slot</b>	-	-	-	1 (card IN, card OUT)	-
<b>Output Channels</b>	Only limited by number of Receivers in range				
<b>Addressing</b>	Factory set unique ID (1 of 4 billion)				

\* Available in white (-W), Ivory (-I), Light Almond (-T), Gray (-G) and Ebony (-E).

	THERMOSTAT WSoTH-S00 Adjusts temperature based on "occupied" and "unoccupied" signals
<b>Input Voltage</b>	24VAC
<b>Load Rating</b>	1.5A/circuit
<b>Temperature Monitor Range</b>	32°F to 99.9°F (0°C to 37.7°C)
<b>Temperature Set Point Range</b>	60°F to 85°F (15.5°C to 29.5°C)
<b>Sampling Rule</b>	Every 5 seconds
<b>Fan Control</b>	Selectable: Auto Cycle, Low, Medium, High, Economy, Off
<b>Time Delay</b>	5 sec to 15 min
<b>Memory</b>	Stores up to 30 Switch IDs
<b>Heat/Cool Control</b>	1 Heat and 1 Cool circuit

### SLT TRANSMITTERS

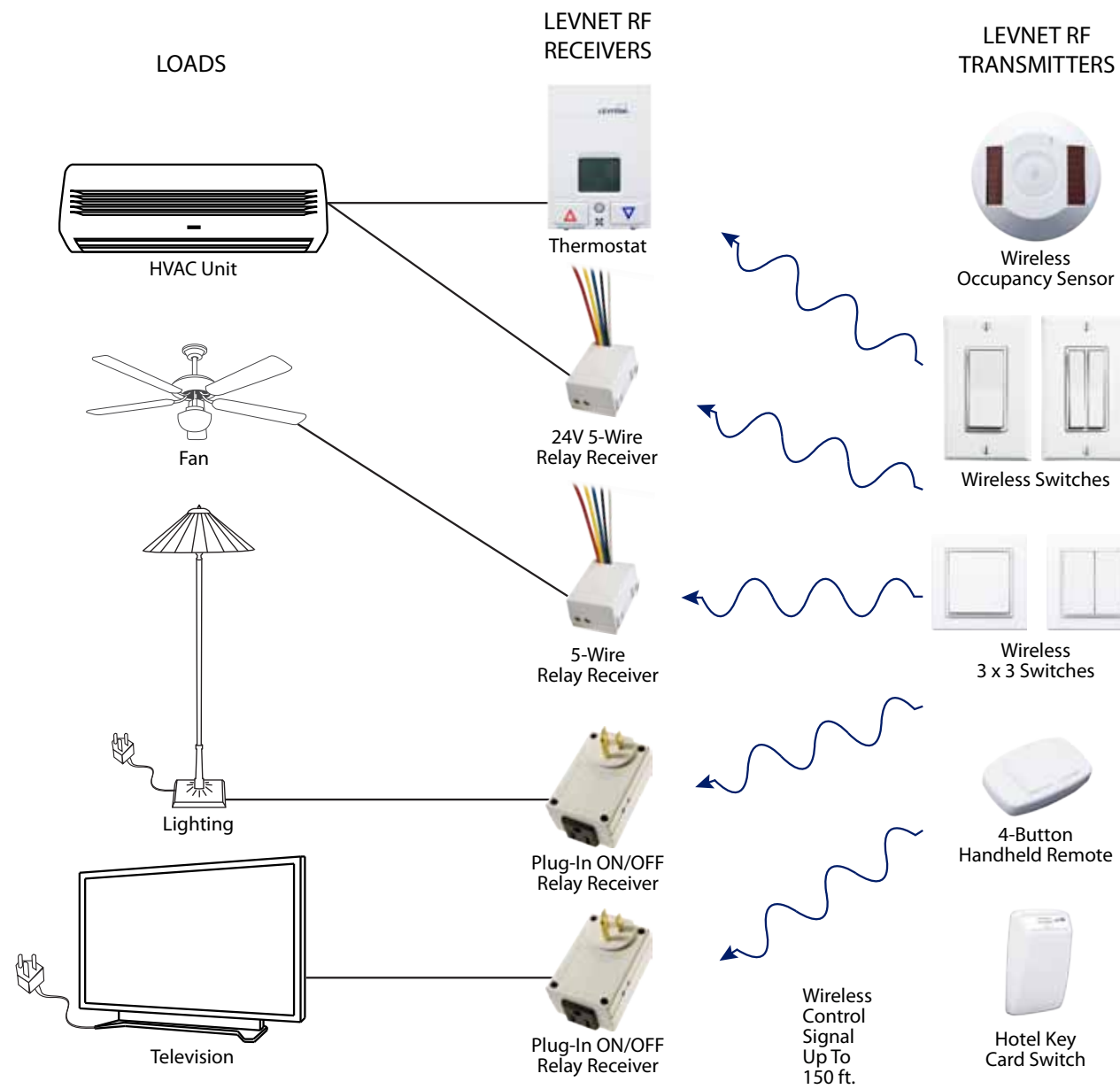
	SWITCH LEG TRANSMITTER WSSLT-010   WSSLT-010 WSSLT-R10 Replaces wires between an electrical load and a switch with an RF control signal to control loads	4-CHANNEL SLT TRANSMITTER WSSLT-GP0 Connects 4 GPIO signals from the HVAC controller to control lighting
<b>Power Supply Input</b>	<b>WSxLT-010:</b> 120VAC, 50/60Hz <b>WSSLT-R10:</b> 24VAC, 50/60Hz	8-28VDC, 40mA
<b>Addressing</b>	Factory set unique ID (1 of 4 billion)	
<b>Additional Listings</b>	ETL: UL244A, C-ETL: CSAc22.2#14-05	

## ACCESSORIES

	RS-232 SERIAL BOX DATA INTERFACE WSoRF-300 Connects to any system that uses an RS-232 serial port	SIGNAL STRENGTH METER WSMET-010 Verifies whether the installation of LevNet RF products are possible at the positions planned
<b>Power Supply Input</b>	8-28VAC or 8-30VDC	-
<b>Current</b>	25mA @ 12VDC, 15mA @ 24VDC	-
<b>Power Supply</b>	Not included	9VDC battery
<b>Receiver Sensitivity</b>	-	-95dBm
<b>Channel Bandwidth</b>	-	280kHz
<b>RF Data Rate</b>	-	120kbps

## HOW TO PUT IT ALL TOGETHER

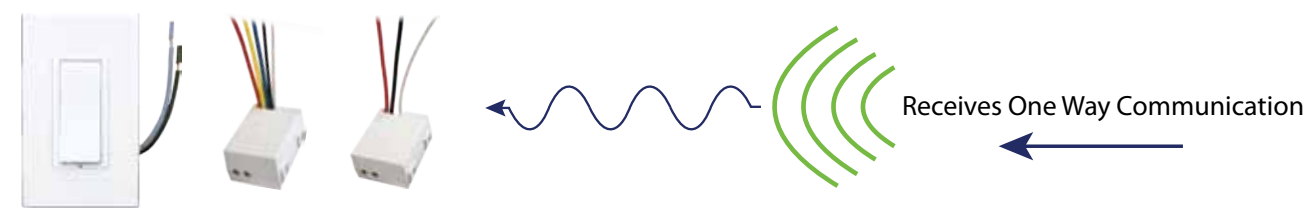
TIP: A good way to visualize your wireless system is to imagine that the "wires" connecting each device are invisible wires or "unique addresses."



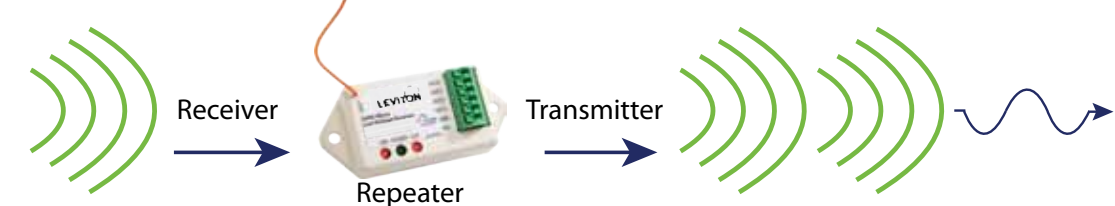
**STEP 1** Determine what LOADS you want to control — lighting, HVAC, lamp, TV, etc.

**STEP 2** Pick the appropriate RF RECEIVER and/or TRANSCIEVER

### LevNet RF Wireless/Wired-In Receivers



### LevNet RF Wireless/Wired-In Transceivers



**STEP 3** Pick the appropriate Self-Powered Wireless RF TRANSMITTER (sensor or switch)

### LevNet RF Self-Powered Wireless Transmitters



**STEP 4** PAIR the devices to communicate with each other

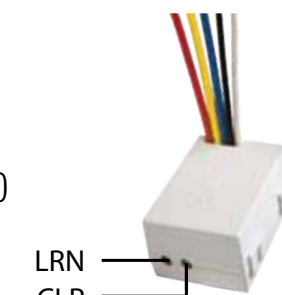
### BASIC WALL SWITCH RECEIVER PAIRING

- Step 1: Enter Pairing**
- Press & hold button for 15 seconds
  - LED will change to flashing amber
- Step 2: Select Pairing or Clear Mode**
- For Basic WSS10 Models*
- Amber LED (1 flash = Pairing; 2 flashes = Clear)
  - No devices can be paired on flashing amber, continue to step 3 unless you need to CLEAR
- For Advanced WSS10 Models*
- Amber LED (1 flash = Rocker; 2 flashes = Momentary, 3 flashes = Toggle, 4 flashes = Scene, 5 flashes = Clear)
  - Select pairing mode by tapping button to advance flashes
  - No devices can be paired on flashing amber, continue to step 3 unless you need to CLEAR
- Step 3: Enter the Pairing Mode**
- Press & hold button for 5 seconds
  - LED will change to red (no devices paired) or green (number of flashes indicates number of devices paired)
- For Advanced WSS10 Models*
- Tap button to return to mode selection (amber LED)
- Step 4: Pair Transmitter Button**
- Tap the button you wish to pair
  - LED will hold amber & then flash green acknowledging successful pairing
- Step 5: Exit Pairing**
- Auto exit will occur in 20 seconds



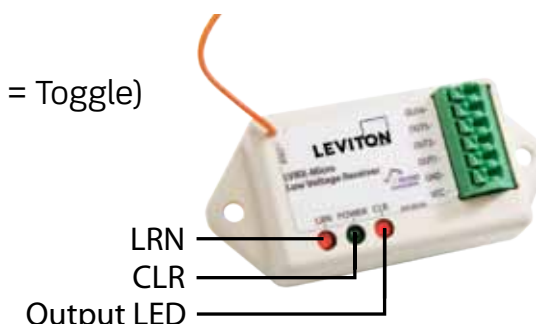
### RELAY RECEIVERS WITH 2-BUTTON PAIRING

- Step 1: Enter Pairing**
- Press & hold LRN until load flashes
- Step 2: Select Pairing Mode**
- Press & hold LRN button again to advance modes (1 flash = Rocker; 2 flashes = Momentary; 3 flashes = Toggle)
  - Load will flash faster to acknowledge
- Step 3: Pair Transmitter Button**
- Press & release the button you wish to pair
  - Load will hold ON for successful pairing, hold OFF for unpairing
- Step 4: Exit Pairing**
- Auto exit will occur in 30 seconds, or
  - Press LRN for 2 seconds and release



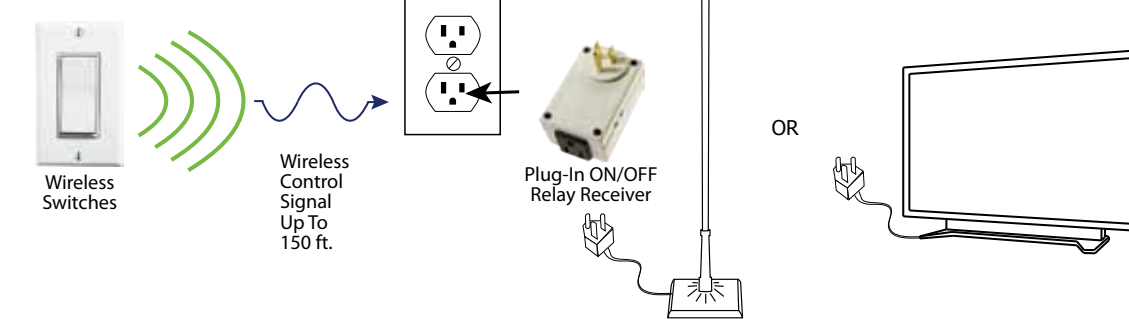
### ROOM CONTROLLER TRANSCIEVER PAIRING

- Step 1: Enter Pairing (Output 1)**
- Press & hold LRN until load 1 starts flashing
- Step 2: Select Pairing Mode**
- Press & hold LRN button again to advance modes (1 flash = Rocker; 2 flashes = Momentary; 3 flashes = Toggle)
  - Load will flash faster to acknowledge next mode
- Step 3: Pair Transmitter Button**
- Press & release the button you wish to pair
  - Load will hold ON for successful pairing, hold OFF for unpairing
- Step 4: Enter Pairing (Additional Outputs)**
- Press/release the LRN button
  - LED will flash 2x for output 2, 3x for output 3
  - Repeat steps 2 & 3 for each output
- Step 5: Exit Pairing**
- Wait 30 seconds
  - Press LRN for 2 seconds and release

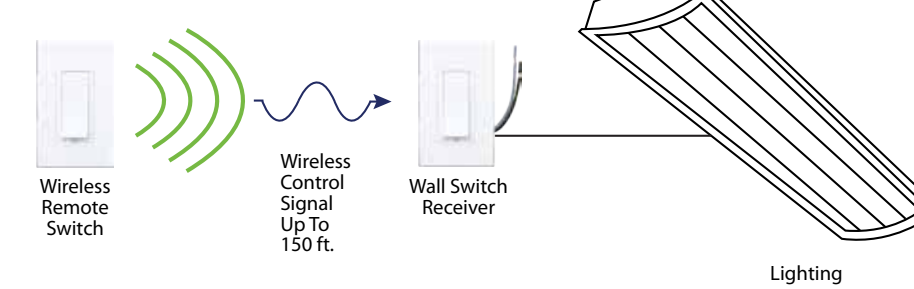


## BASIC LEVNET RF SOLUTIONS

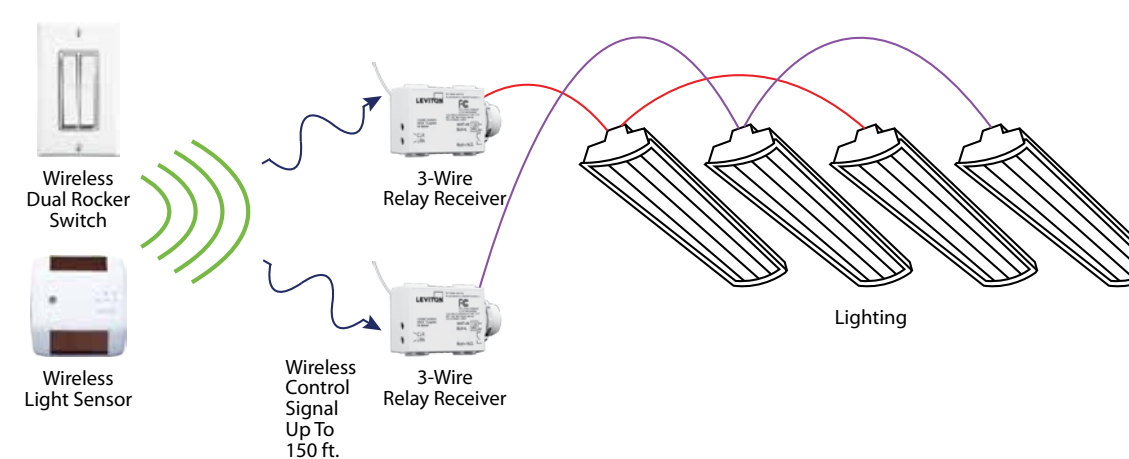
### Basic Wireless Lighting



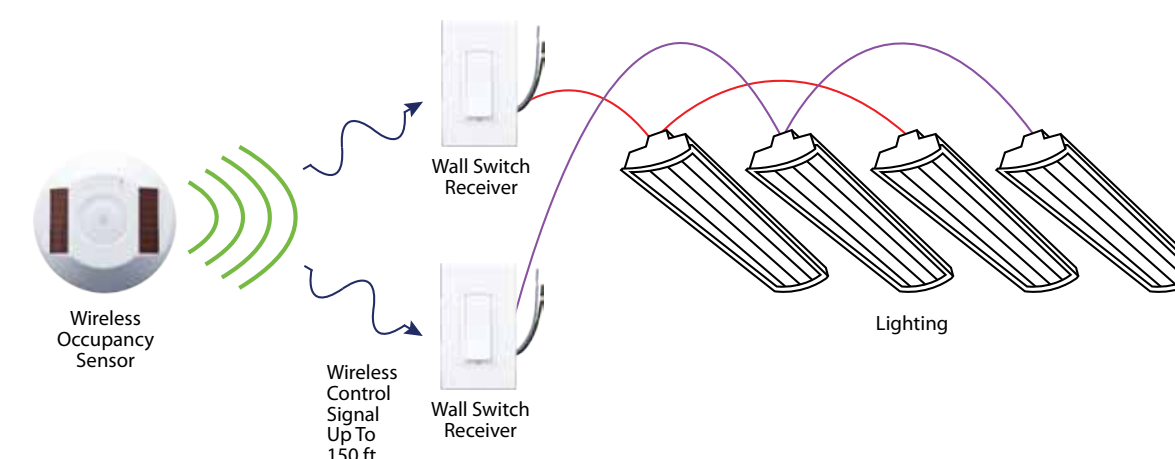
### 3-Way or Multi-Location Switching



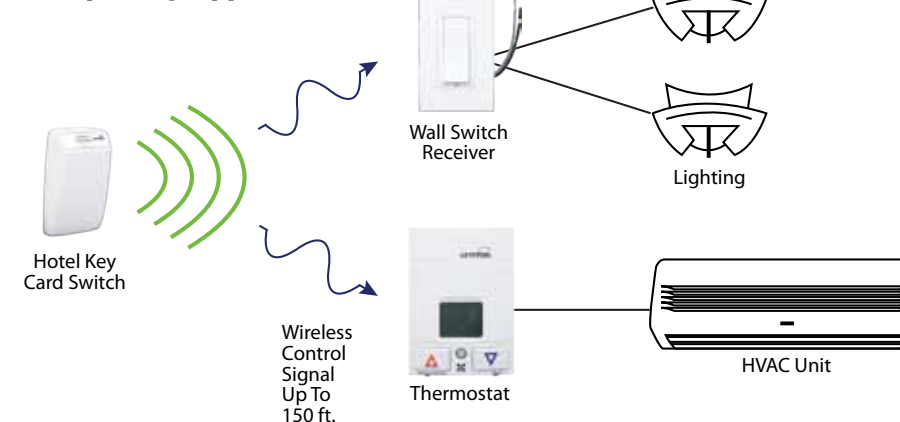
### Daylight Harvesting with Bi-Level Control



### Occupancy Sensor with Bi-Level Control



### Hospitality Application



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 REV JAN 2011

**EXCLUSIVE WEALTH OF RESOURCES:**  
 • Occupancy sensor layout services – have a team of experts create occupancy sensor layouts at no cost to you directly on your CAD drawings, complete with a list of equipment within an average turn-around time of 3 business days – go to [portal.leviton.com](http://portal.leviton.com)  
 • Dollars & Sensors – get an accurate estimate of your energy-savings potential with this exclusive payback analysis tool  
 • ezLearn – get sensor smart in just 90 minutes from the comfort of your home or office with this exclusive 24/7 online training  
 • Lighting control specialists at your disposal  
 • Field service engineers for top-level support  
 • Factory commissioning service  
 • Dedicated technical support via phone at 800-824-3005  
 • Average turn-around time based on projects for up to 200 sensors per system.

**LevNet RF Self-Powered Wireless Solutions Product Guide**

