

# LevNet RF™ Installation for Maximizing Wireless Range

**Product:** LevNet RF Wireless Solutions

**Article ID:** 02102012-JE/TB-01

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**Summary:** This article describes field-proven practices for ensuring reliable wireless communications between LevNet RF EnOcean-enabled energy harvest controls.

**Information:** **Straighten antenna out and away from metal**

- **Utility boxes/relay panels:**



**Worst Case:**  
Antenna and receiver inside metal box

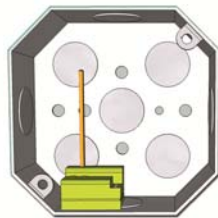


**Better:**  
Antenna outside or receiver on side (min 1" away)

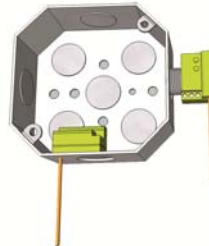


**Best:**  
Antenna and receiver on top or bottom

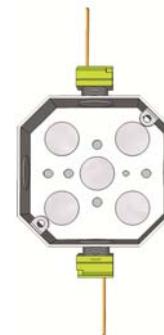
- **Junction Boxes:**



**Worst Case:**  
Antenna and receiver inside J-Box



**Better:**  
Antenna outside or receiver on side (min 1" away)



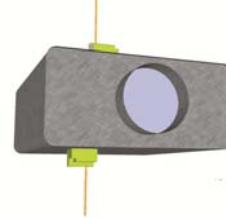
**Best:**  
Antenna and receiver on top or bottom

- **Fluorescent Light Fixtures:**



**Best:**  
Outside of fixture and away from “Keep Out” zones and ballasts

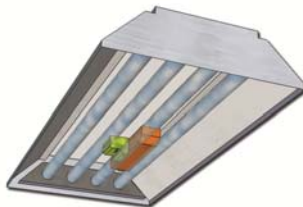
- **HVAC Ducts:**



**Best:**  
Antenna and receiver on top or bottom (if ceiling is non-metal)

### Create separation distance away from interfering electronics

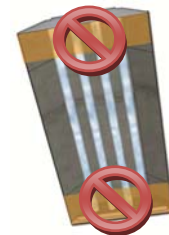
- **Fluorescent lighting ballasts:**



**Worst Case:**  
Wireless receiver and antenna next to ballast or in “Keep Out” zones

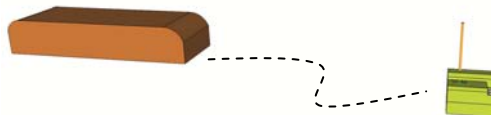


**Better:**  
Maximize separation distance (between wireless receiver and ballast) and pull antenna outside of fixture



**Best:**  
Avoid placing wireless receiver and antenna within 6” of tube sockets

- **Lighting:**



**Best:**  
Outside of fixture and away from “Keep Out” zones and ballasts

- **HVAC – PTAC Units:**



**Best:**  
Antenna and receiver on top or bottom (if ceiling is non-metal)

### Wireless Range Reducers

Material	Range Reduction*
Wood, drywall, glass (uncoated, without metal)	0-10%
Brick, particle board	5-35%
Metal, ferro concrete, mirrors	10-90%

### Wireless Range Testing

Site survey tools are available that can help fine-tune wireless communications. For example:

- Indicate wireless signal strength
- Evaluate longer range scenarios that might require enabling repeaters