

# Reliable Wireless Deployment

## 1. Basic Information

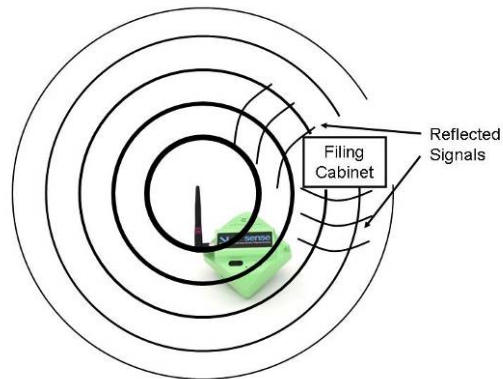
### a) RADIO SIGNALS RADIATE LIKE A DINNER PLATE:

- ↳ Accsense antennas radiate in a circle, perpendicular to the antenna:



- ↳ Place the antenna straight up to maximize horizontal transmission distance.
- ↳ Place the antenna in a horizontal position to maximize vertical transmission distance (such as communication between floors in multi-story buildings).

### b) METAL AND LIQUIDS STOP WIRELESS SIGNALS:

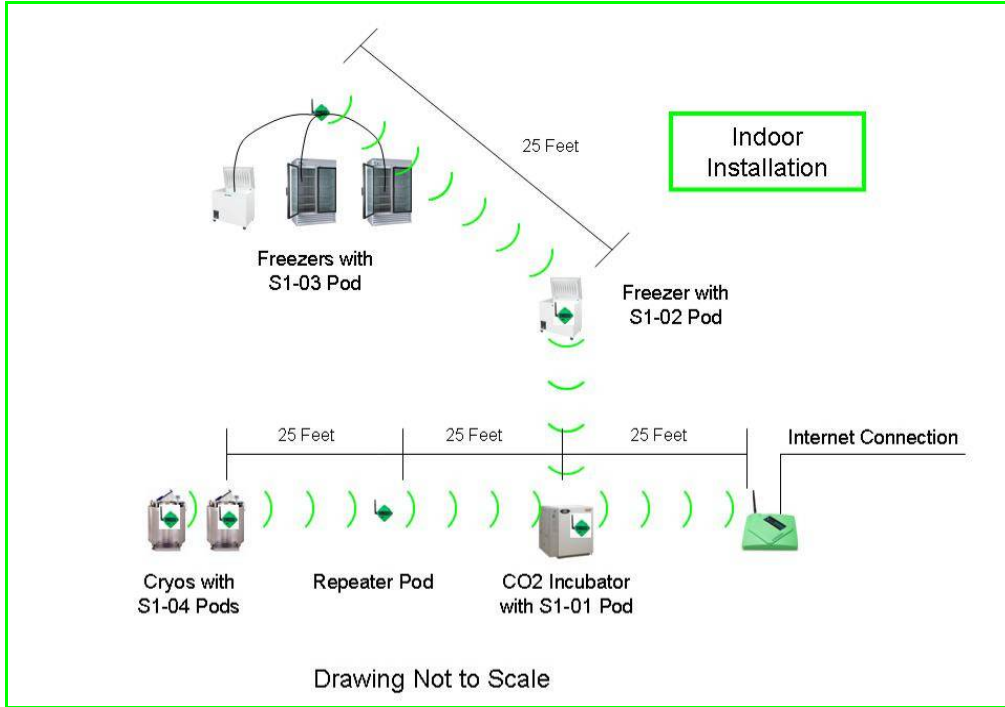


- ↳ Solid Metal reflects the signal.
- ↳ Metal spaced ~2.4 inches (~6cm) apart or less—such as a chain link fence, chicken wire in stucco, or security glass—can stop Accsense radio waves completely.

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**c) POINT-TO-POINT DISTANCE IS WHAT COUNTS:**

- ↳ Accsense radios will cover point-to-point distances of 125 feet (40 meters) **VERY RELIABLY** over open space.
- ↳ Accsense radios will cover point-to-point distances of 25 feet (8 meters) **VERY RELIABLY** in almost any indoor situation, regardless of walls, etc.



**2. Gateway Placement**



**Good**



**So-So**



**Bad**

- ↳ Gateway elevated, clear of obstructions.
- ↳ Cables secured to wall.

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### 3. Pod Placement



Good



So-So



Bad

- Pod elevated, clear of obstructions, especially any metal.
- Pod and power supply wire (if any) secured to wall.
- Probes routed properly and secured.
- Do not place pod right next to gateway as this can overpower the receiver.

### 4. Do You Have Good Wireless Communication?

- a) Log onto your online account.
- b) Click on the Gateway Preferences Icon.
- c) Set both Recording and Alarm Sample Rates to 30 seconds and click OK.
- d) Click the "Pod Preferences" Icon. (See below)
- e) Click the "View" Tab.
- f) Set "Link Quality" to "Visible" and Click OK.
- g) Repeat for all Pods. The main screen will now display "Link Quality" within your "Latest Measurements" table.



Location	Pod Name	Temperature	Link Quality
National Sealants and Lab.	Freezer Bank, Room 317A		
	Jon's New Brunswick Scientific Freezer	-10.94 C	
	Room Temperature	26.23 C	
Lab 202	1) Marie's Cryosafe Cryogenic Freezer	6.52 C	
	2) Marie's LRP Freezer	42.00 F	
	Link Quality	100.00 %	
	Washington State University Pharmacy		
Washington State University Pharmacy	LAN-Wired Pod Model A2-05		
	#119 Matt's So-Low Freezer	-79.39 C	
	#133A Matt's NalAire Freezer	-20.52 C	
	#216 - Matt's Taylor-Wharton Cryo	-183.81 C	

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h) Now, graph your Link Quality



Good

So-So

Bad

- i) If you suspect a pod is having difficulty communicating, verify this with the Link Quality graph described above.
- j) Link Quality is most accurate when taken as a time average, i.e. after the system has been running for 30+ minutes.
- k) If you have poor link quality, see Section 6 to improve your signal strength (or consider Accsense's A2-Series LAN-Wired Pods).

## 5. Symptoms of Poor Wireless Communication

a) **“Pod Communication Loss” Alarms**

If you have Pod Communication Loss Alarms turned on, you may get alarms at surprising times, even when it appears that nothing has changed.

b) **Poor Battery Life**

If your Pods have poor communication, they will have to re-try their communication often, burning up battery power. In extreme situations, batteries can be drained in weeks.

## 6. Tips for Improving Wireless Communication

a) **Tighten All The Antennas**

Antennas can sometimes vibrate loose and lose contact, even though they visually appear okay. Tighten them with your fingers, or better yet, plastic pliers.

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**b) Reposition Pod/Gateway**

Sometimes moving the pod or gateway several inches can make an enormous difference! This is why commercial Wi-Fi routers have two antennas – two antennas spaced a few inches apart significantly increases the chance of getting a good signal.

**c) Add A Repeater Pod**

Add an intermediate (repeater) pod into your mesh, between the Pod having communication problems and the next closest Pod or the Gateway.

**d) Use A Second Gateway**

Gateways are relatively inexpensive. Multiple Gateways can be combined into a single screen on your Online Account.

**e) Use an A2-Series LAN-Wired Sensor Pod**

A2-Series LAN-Wired Sensor Pods plug directly into a LAN connection. A2-Series monitors can be combined into a single screen with Accsense Wireless Gateways on your Online Account.

**f) Call Accsense 24/7 Technical Support**

An experienced Accsense technician is available by phone 24/7. Just call Accsense at 1-866-670-3500.

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