



Simultaneous Talk and Receive Wireless Intercom System

Installation Manual



Patent Pend

A facility needs to be evaluated whether it is suitable for wireless application.
Manufacturer is not responsible for mis-application of this product.
Please read the entire manual before installation.

Antenna installation

1. Make sure Outdoor Unit antenna is installed min **8 feet** above ground. (This ensures good range and avoids antenna vandalism)
2. Ensure antenna is not installed against any metallic surface. To avoid reducing radio range install antenna at least 24" away from steel post or building structure (see Figure 1).
3. After wire installation, ensure enclosure knockouts are properly sealed—to avoid water intrusion.

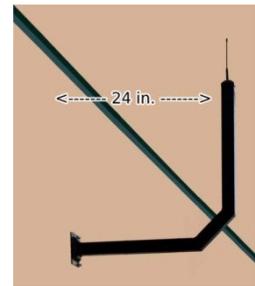


Figure 1

Outdoor Unit installation

1. Open enclosure using key.
2. Disconnect 6-inch antenna extension cable inside enclosure.(Figure 2)
3. Remove the front door by removing the two hinge screws. (Figure 2)
4. Remove knockouts (back or bottom – as necessary) and fish wires through knockout.
5. Mount back enclosure using mounting holes.
6. Re-install front door using two hinge screws.
7. Re-connect 6-inch antenna extension cable inside enclosure.
8. Follow wiring and setup instructions for Outdoor Unit.
9. Run 6-foot antenna extension cable as necessary and mount antenna.
10. Screw 6-foot antenna extension cable on back of enclosure and run cable as necessary to antenna location.
11. Mount antenna and ensure that it is hand tight.

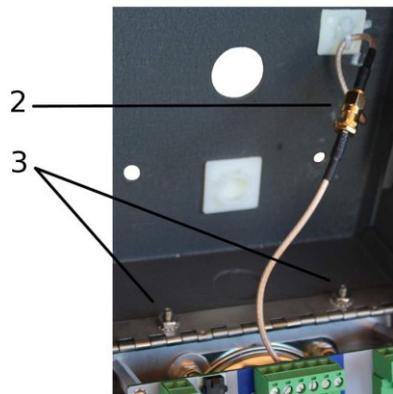


Figure 2

Outdoor Unit Setup

Note: Step numbers correspond to numbers in below.

1. Install *Power Transformer* Provided with system (avoid sharing the power transformers with other devices)
2. Adjust *Speaker Volume*
3. Select *Radio Channel (0-9)*
4. Select *Strike Times* for Relay 1 and Relay 2
5. Select *Access Point Number (1-9 for Outdoor Unit)*
6. To verify radio signal quality, Turn ON *Test Switch*:
 - a) Ensure remote Indoor Unit is powered & turned ON. Set the radio channel of remote Indoor Unit to same channel as Outdoor Unit being tested

- b) Turn ON TEST switch on remote Indoor Unit - Start testing: observe Quality LED bar and position unit to obtain best signal quality - Turn OFF TEST switch after testing
7. Connect screw terminal to *Ground Rod* using 12 AWG wire – to ensure surge protection
 8. Connect dry contact *Inputs*
 - a. "Exit" Switch (Request to Exit-RTE)
 - b. "Call" Switch for vehicle auto call feature
 9. Connect *Relay 1* and *Relay 2* Terminals to gate or door.

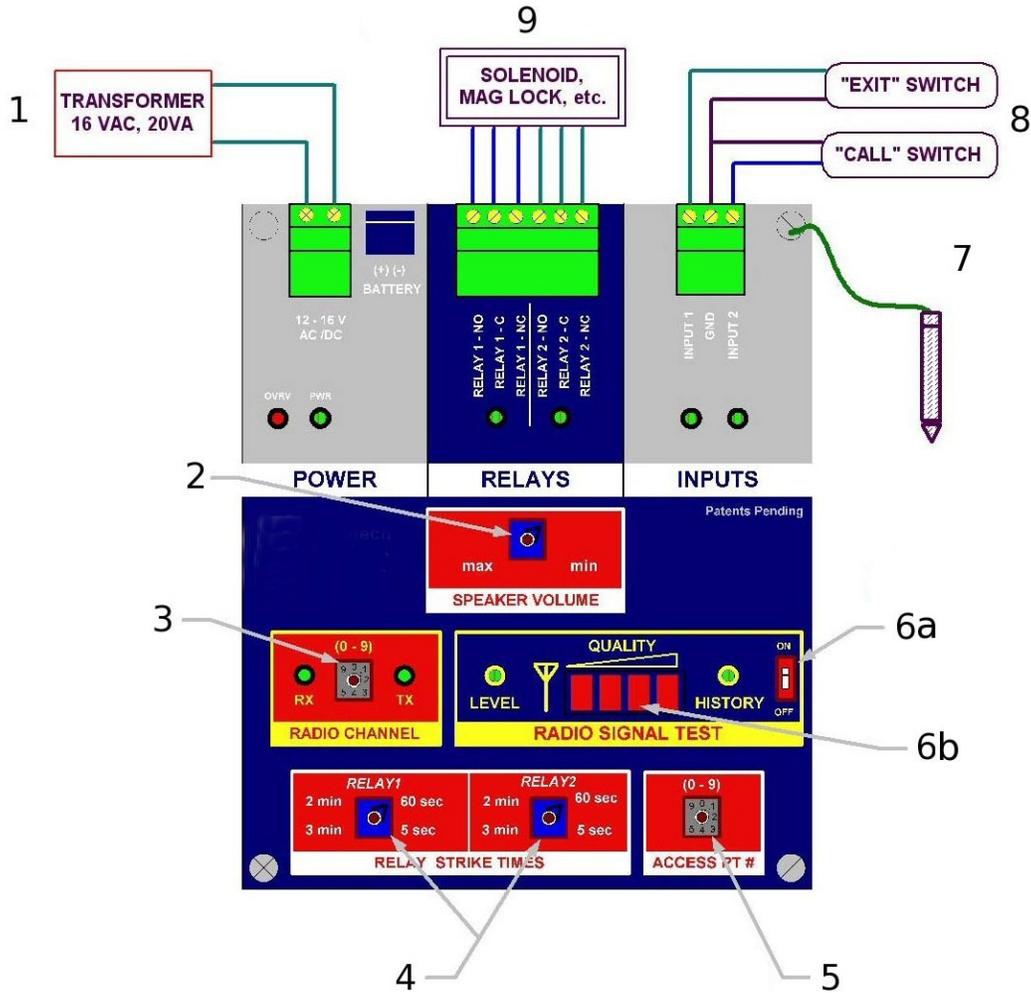
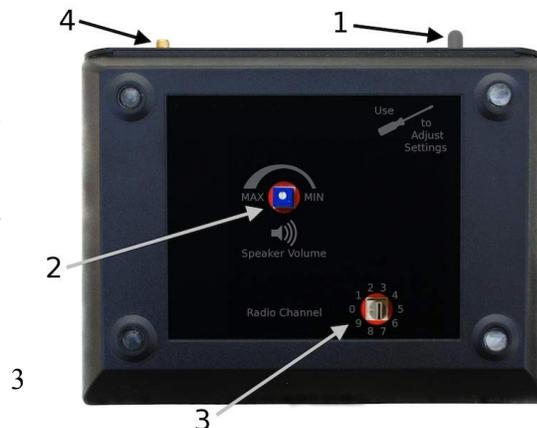


Figure 3

Indoor Unit Setup

Note: Step numbers correspond to numbers in Figure 4.

1. Install *Power Transformer* (avoid sharing the power transformers provided with other devices)
2. Adjust *Speaker Volume*



3. Select *Radio Channel (0-9)*
4. Install antenna, and ensure that it is secure (hand tighten).

Figure 4



Trouble Shooting

Unable to call remote unit (from Indoor or Outdoor intercom):

1. Ensure power is applied (check power input voltage using volt meter – needs to be 12V – 16V AC or DC).
2. Ensure TEST Switch in in OFF position in the “RADIO SIGNAL TEST” section of the board.
Note: Intercom needs to be in Normal operation mode to call.
3. Ensure the RADIO CHANNEL positions on the “Outdoor” and “Indoor” units match
4. Ensure all “Outdoor” Intercom units have their “ACCESS PT” rotary switch set between 1-9 (not 0)
5. Check if the remote unit (Outdoor or Indoor) you are calling is in “Idle” mode and not in “Voice Communication” mode (off-hook).
6. Push the “Call” switch on remote unit to ensure it hangs up (see Figure).
Note: If remote unit is able to call other units, then it is in “Idle” mode.
7. Ensure that the antennas on all units are securely installed (hand tighten) (see Figure).
8. Ensure any antenna extension cables are securely installed (hand tighten)
9. Keep the Intercom units away from any other radio devices, such as handheld radios-to avoid radio interference.
10. If all above is verified, and still unable to call, then perform a “Range Test” (see instructions above).

Figure 5



Poor audio sound:

1. If audio has static (or other) noise, ensure the front doors of the units are shut before initiating audio communication
2. If audio has feedback (static heard after speaking on *local* unit), lower the volume of the *remote* unit. This will reduce the sound echo feedback on the remote unit.

Figure 6

“Range Testing” Procedure

1. Position the pair of intercom units in their respective locations (as close to their final location as possible)
2. Power ON only a single pair of units (one Indoor and one Outdoor Intercom units) to perform a “Range Test”. All other Intercom units need to be turned OFF.
3. Ensure the “Outdoor” unit’s antenna is min 8 feet above ground.
4. Flip the “TEST Switch” to ON position in the “RADIO SIGNAL TEST” section of the board on “Outdoor” unit. The “QUALITY” LED bar graph as well as the “LEVEL” and “HISTORY” LEDs will light up. The unit will now automatically initiate communication with the remote unit and provide the quality of the radio of the radio link between them. Primarily focus on the “QUALITY” LED bar graph for assessing the radio link (see Figure).
6. If the “QUALITY” LED bar graph has more than 2 bars on, then the link is GOOD (Skip next step)



7. If the LED bar has less than 2 bars, then do the following to improve the range: Move the “Outdoor” intercom unit (or its antenna using extensions) to different location and observe the “QUALITY” LED bar graph again to see if the range has improved. Move the “Indoor” Intercom unit (or its antenna using extensions) to different location and observe the “QUALITY” LED bar graph again to see if the range has improved.
8. Note: Repeat the steps above until the ideal location for antennas are determined.
9. If the building walls are metal reinforced and the “Range Test” results are poor, then the antenna of the “Indoor” Intercom unit may need to be mounted near a window – using antenna extension cable(s). For worst-case applications, the antenna may need to be mounted outside of the building (on outer wall) (see Figure 1). Again, utilize the “Range Test” feature to determine optimal position for antenna.
10. In applications where extreme range is required, a high gain antenna may be utilized (see Figure).

Figure 7



Figure 8

Usage Notes

1. The “Call” Switch connections on the Outside unit are used to connect a motion or photo beam sensor. When the sensor is tripped, the unit automatically goes into transmit mode. A ringing tone will sound on the Indoor unit(s) (and Outdoor) and then whichever indoor unit answers the call, the call will become private between those indoor and outdoor units.
2. The “Exit” Switch connections are used like the Call switch, but the sensors are placed on the exit side of a door or gate. When the sensor is tripped, the Inside unit will be alerted.
3. There are two relays or switches inside the Outdoor unit that can be used to activate a gate or door opener, turn on a light, ring a bell, or whatever you want. In Figure 5 you see two key icons on the base station. These are used to activate the relay. If you have multiple Outdoor units, only the relays on the unit calling in are activated.
4. An Indoor unit can only place a call to one Outdoor unit set to Access Point Number 1, but up to 9 Outdoor units can call any number of Indoor units and the Indoor units can respond.
5. If the “Call” button is pressed during communication, the unit will hang up. Otherwise, talk time is 4 minutes (fixed) after which the unit will hang up.

Warranty

The manufacturer warrants for twenty-four (24) months from the date of invoice, this system and other related systems and equipment manufactured by the manufacturer to be free from defects in material and workmanship under normal use and service for which it was intended, provided it has been properly installed and operated.