

Wireless Modem Assembly

Part Number 1815-740



IMPORTANT!

Wireless modems are configured for DoorKing systems. **Do not change the switches on the modems.** Doing so will change their programming and the modems will not function with DoorKing products.

Parts List for P/N 1815-740

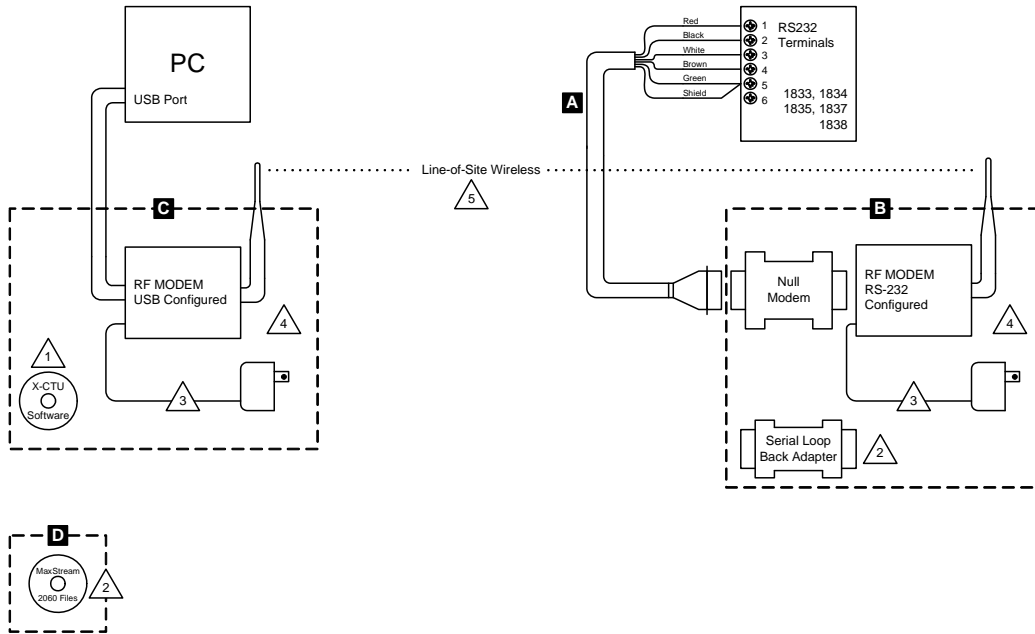
1. P/N 1815-726 - RF Modem USB Configured includes:
 - Quick Start Guide
 - X-CTU software CD
 - Antenna 1/2 Wave Dipole
 - USB Cable, 6-Ft.
 - Power adapter, 9V 1A

2. P/N 1815-725 - RF Modem RS 232 Configured includes:
 - Antenna 1/2 Wave Dipole
 - Serial Loop Back Adapter
 - Null Modem Adapter
 - Power adapter, 9V 1A

3. P/N 1818-040 - RS 232 Cable 6-Ft.
4. P/N 1815-721 – CD MaxStream 2060 Files
5. P/N 1815-760 – Manual

Notes:

- You must install USB driver on your PC using the X-CTU CD.
- The X-CTU software, the MaxStream CD and the **RED** serial loop back adapter are used for trouble shooting only.
- You may cut and splice the wires for the power adapters if necessary. **However, you must observe the polarity! I.E., striped wire to striped wire. Permanent damage will occur to the modem if polarity is incorrect!** For wire runs up to 100 feet, use 22 AWG wire. For wire runs up to 200 feet, use 18 AWG wire.
- If installed outdoors, the modem and power supply must be installed in a rain-tight enclosure.



- Wireless Modem Assembly P/N 1815-740**
- A** RS232 Cable P/N 1818-040
 - B** RF Modem Ass'y RS 232 Configured P/N 1815-725
Dipole Antenna
Serial Loop Back Adapter
Null Modem Adapter
Power Supply 9V 1A
 - C** RF Modem Ass'y USB Configured P/N 1815-726
Dipole Antenna
USB Cable
Power Supply 9V 1A
X-CTU Software CD
Quick Start Guide
 - D** CD MaxStream 2060 Files P/N 1815-721

Notes

- ≡ This assembly will only work with the Remote Account Manager Software version 6.0 or later.
- ≡ 1833, 1834, 1835 and 1837 circuit boards must be REV I or higher.
- ≡ 1838 circuit board must be REV H or higher.

- 1** You must install the USB driver on your PC using the X-CTU CD
- 2** Used for trouble shooting only
- 3** Power wires may be cut and spliced if necessary. **Observe Polarity! I.E. striped wire to striped wire. Permanent damage will occur if polarity is not observed!**
- 4** If mounted outdoors, must be in rain tight enclosure.
- 5** Use high-gain antenna kit (P/N 1815-741) for distances greater than 500 feet.

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|---|---------------------|---------------|
| DOORKING, INC., INGLEWOOD, CA 90301 | | |
| Title: Wireless Modem Assembly Wiring Instructions | | |
| Date: 10/07 | Dwg. No. M-1815-760 | Rev. A |

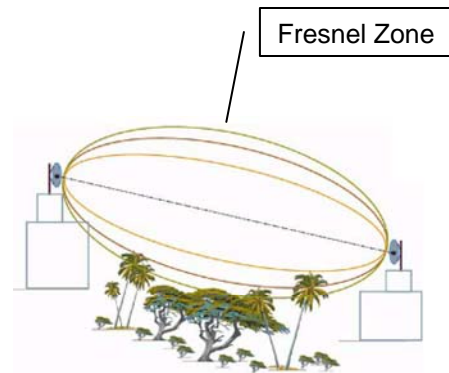
Range Consideration

There are a number of factors that can affect the range of the wireless modems, including:

- The environment or space between the modems
- The types of antennas used.
- The mounting of the antennas.

Environment

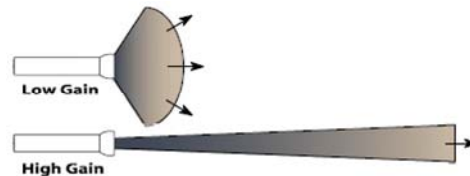
We found that up to about 500 feet, a visual line-of-sight worked fine with the standard dipole antennas that come with the wireless modems. While visual line-of-sight may be fine for many applications, better range can be achieved by observing the Fresnel Zone – the football shaped tunnel between the two sites that provides a path for RF signals.



If the antennas are mounted just barely off the ground, the earth will obstruct half of the Fresnel zone. Buildings, trees (that may grow later) or any other obstructions will further decrease the communication range. For optimum range, set up the antennas to allow a free and clear Fresnel zone. The diameter of the Fresnel zone is typically 16-feet when the antennas are 1000 feet apart.

Antenna Types

We suggest using high-gain antennas (DoorKing P/N 1815-741) when a range of greater than 500 feet is desired. High-gain antennas focus the RF energy in a particular direction. How much energy is focused in the particular direction is referred to as antenna gain. A flashlight whose beam can be adjusted by twisting the lens illustrates this.



A low gain antenna cannot receive signals from a long distance, but they can receive signals from a wider area. High-gain antennas, on the other hand, can receive signals from a longer distance, but the area they receive them from is smaller.

Use high-gain antennas in applications where longer range and more focused transmissions are required.

- P/N 1815-741 High-gain Antenna Kit (includes 20-foot coax cable).

Antenna Mounting

When mounting an antenna, care should be taken to make sure it is as far away from metal objects as possible. If the antenna is mounted too close to nearby metal, the metal has the potential to interfere with the way the antenna radiates the RF signal and thus decrease the range.

In some cases, a coax cable must be used to connect the antenna to the wireless modem. All coax cables add losses to the system. For any given cable, the longer the cable, the greater the loss becomes. Often, a longer serial cable to the DoorKing system or a longer USB cable to the PC can be used to minimize the length of the coax cable.