QUICKSTART for ONE "900 MHz" Wireless Tracker Expansion Board Connection to 1830's Series "RELAY 2"

DKS DOORKING®

120 S. Glasgow Avenue
Inglewood, California 90301
U.S.A.

For MORE installation instructions, refer to the 900 MHz wireless baseboard manual 2333-065 and the HARDwired tracker expansion board manual 2358-065.

900 MHZ Antenna Options

Sold Separately

900 MHZ Wireless Dual Band Repeater P/N 2332-080

Range is Up to **1500 ft** direct-line-of-sight. See instruction sheet for more information.

Cabinet Mounted 900 MHz Antenna Kit P/N 1514-019

Range is Up to **1500 ft** direct-line-of-sight.

Externally Mounted 900 MHz Antenna Kit P/N 1514-079

Range is Up to **1500 ft** direct-line-of-sight.

13 ft of cable out of **bottom** of cabinet

900 MHz Wireless Tracker Expansion Board Enclosure Options

Single Board Enclosure with Built-In Card Reader and Lighting
DK Prox Reader - P/N 1815-333
HID Reader - P/N 1815-392
AWID Reader - P/N 1815-292

Single Board Enclosure P/N 2351-080

Antenna Mount

Antenna Mount

Note: If using a longer coax cable for an externally mounted antenna, always run cable out of the bottom of enclosure and **NEVER** out the top. This would cause the enclosure to leak and damage circuit board.
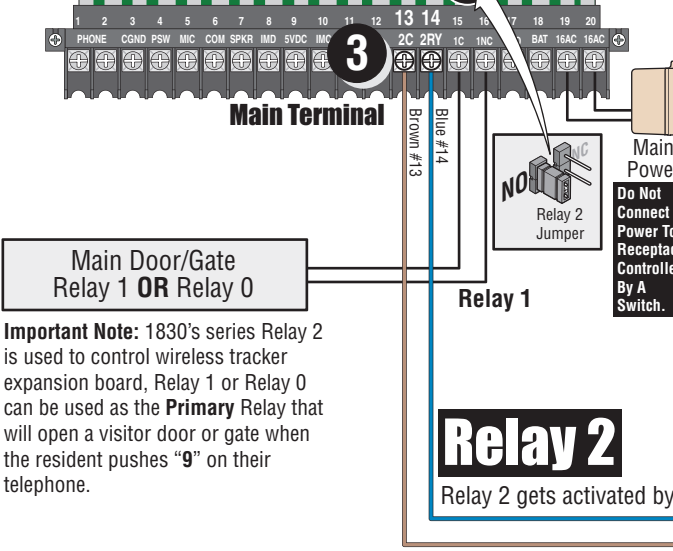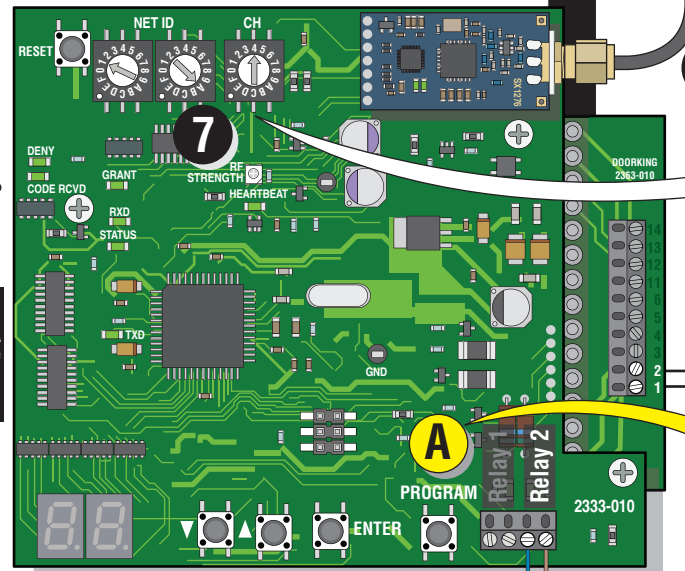
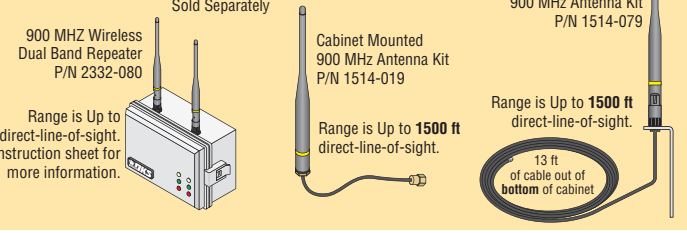## 1830 Series Access Control Board

Antenna Mount
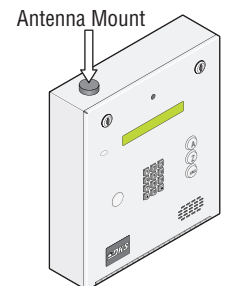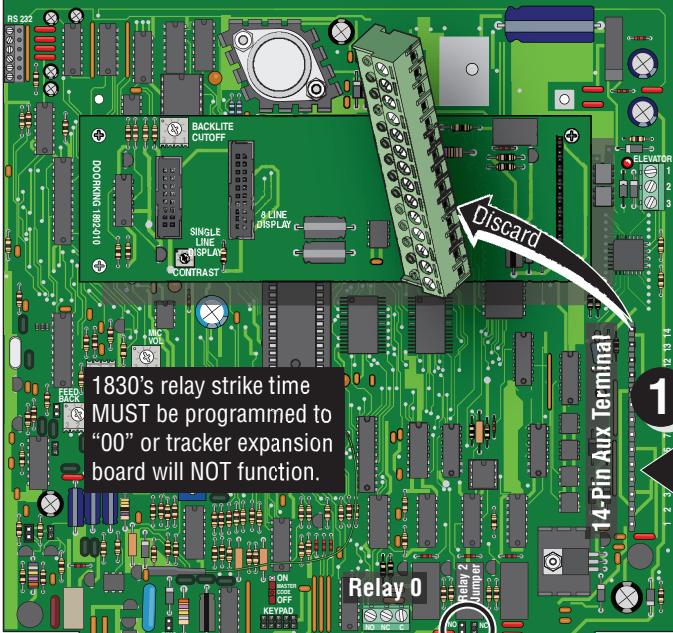
① The 900 MHz wireless baseboard **REPLACES** the 14-pin aux terminal on the access control system's board. The existing 16.5 VAC, 20 VA aux terminal input power transformer is **REQUIRED** and is reconnected to the 10-pin terminal #1-#2. **Antenna is REQUIRED.**

Discard

1830's relay strike time MUST be programmed to "00" or tracker expansion board will NOT function.
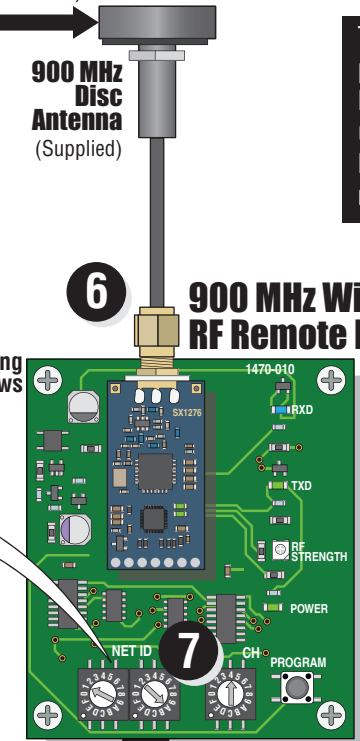
Plug into 14-Pin Aux Terminal
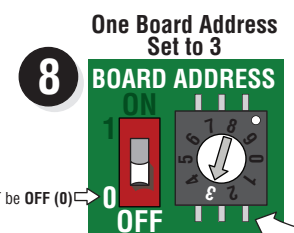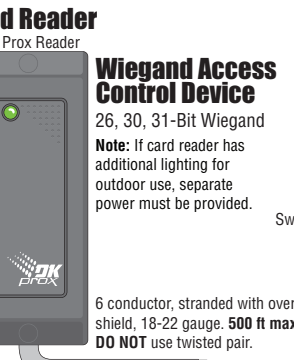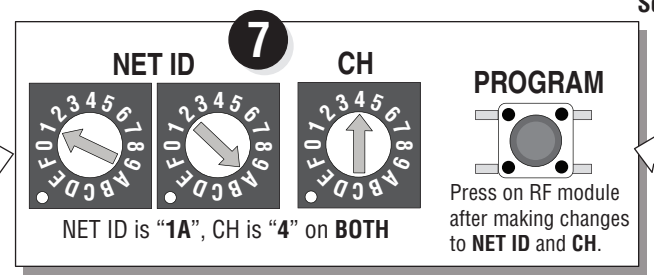
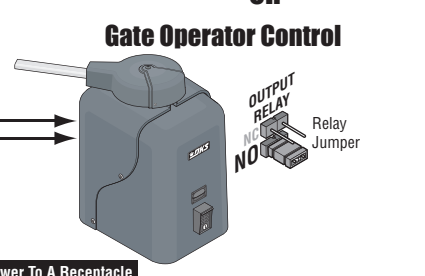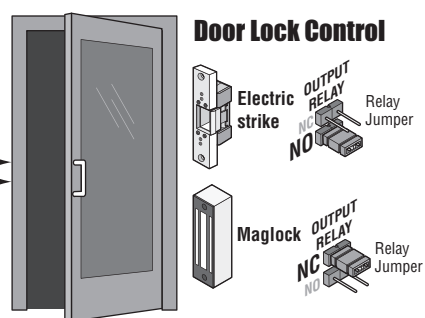Install 900 MHz disc antennas on the top of a selected enclosure (not included).

Approximate range Up to **300 ft** direct-line-of-sight.

900 MHz Disc Antenna (Supplied)

Antenna Note: This 900 MHz wireless system works best when the antennas are in **direct-line-of-sight with each other, in free air as high as possible above the ground.** Many variables can interfere with a wireless signal, some are apparent (trees, buildings etc.) and others are unknown (background signal interference and adverse weather - rain). If a weak signal occurs, a stronger antenna or a dual band repeater may be necessary to achieve a strong signal.
A nearby business that is also using DoorKing's 900 MHz wireless system may interfere with your signal strength. This is rare, but if this occurs, please call DoorKing to help solve this problem.

900 MHz Disc Antenna (Supplied)

⑥ 900 MHz Wireless RF Remote Module

The wireless devices should work with the factory programmed settings for this **BASIC** wireless configuration. More programming may be desired and/or necessary when using more tracker expansion boards. See the back side for **limited** programming or **900 MHz Wireless Baseboard manual** 2333-065 for **ALL** wireless programming.

900 MHz Wireless Baseboard

NET ID   CH
RESET

DENY
GRANT
CODE RCVD
RXD
STATUS
TXD

RF STRENGTH
HEARTBEAT

NET ID   CH

NET ID is "**1A**", CH is "**4**" on BOTH

PROGRAM

Press on RF module after making changes to **NET ID** and **CH**.

4 Securing Screws

Plug the RF remote module onto the wireless connector and secure board with 4 screws to the tracker expansion board. Power transformer must connect to tracker expansion board #33 and #34 (REQUIRED). **Antenna is REQUIRED.**

Main Terminal

Main Power

Do Not Connect Power To A Receptacle Controlled By A Switch.

Relay 2 Jumper

Main Door/Gate Relay 1 OR Relay 0

Relay 1

Important Note: 1830's series Relay 2 is used to control wireless tracker expansion board, Relay 1 or Relay 0 can be used as the **Primary** Relay that will open a visitor door or gate when the resident pushes "**9**" on their telephone.

Relay 2

Relay 2 gets activated by Wiegand 2 input.

Card Reader
DK Prox Reader

Wiegand Access Control Device

26, 30, 31-Bit Wiegand
Note: If card reader has additional lighting for outdoor use, separate power must be provided.

Do Not Connect Power To A Receptacle Controlled By A Switch.

Existing 1830 Aux Power Transformer

One Board Address Set to 3

⑧ BOARD ADDRESS
ON
OFF

Switch MUST be OFF (0)

NET ID   CH   PROGRAM

Door Lock Control

Electric strike   OUTPUT RELAY   Relay Jumper

Maglock   OUTPUT RELAY   Relay Jumper

OR

Gate Operator Control

Power for electric strike or magnetic lock is **NOT provided** by the board. Use separate UL listed power supply.

Set **Output Relay** Jumper

Output Relay #25 & #26

OUTPUT RELAY   Relay Jumper

Wireless Connector

#6-Green = Data 0
#7-White = Data 1
#8-Black = Common
#9-Red = 12 VDC Power

PUSH TO EXIT   To #8 Com   To #18

Request to Exit
(Free Exit)

#20-Card Reader LED or Beeper Control. (Available on certain card readers)

N.O. Blue
Com Brown

6 conductor, stranded with overall shield, 18-22 gauge. **500 ft max. DO NOT** use twisted pair.

Ground #32
Ground 12 GA. Wire
Power #33
Power #34

Do Not Connect Power To A Receptacle Controlled By A Switch.

Board Power 16.5 VAC, 20 VA **Required**
18 GA. Wire 100 ft max
16 GA. Wire 200 ft max

Tracker Expansion Board

Compatible ONLY with Tracker Expansion Board 2358-010 Revision N or higher.

Installation Procedure

- Approximate range between the two units is Up to 1500 ft direct-line-of-sight or less -

① **Unplug ALL power from 1830 series.** Discard removable green aux terminal. Plug baseboard in 14-Pin aux terminal on board.
② Connect existing aux power transformer from discarded green aux terminal into #1 & #2 baseboard terminal.
③ Wire baseboard **RELAY 2** to main terminal #13 & #14 (assuming 1830 series has already been completely setup).
④ Connect antenna to baseboard and install antenna where desired.
⑤ Plug RF remote module onto tracker expansion board and secure with 4 screws (assuming tracker board has already been completely setup and power has been turned **OFF**).
⑥ Connect antenna to RF remote module and install antenna where desired.
⑦ Set **NET ID's** to "**1A**" on baseboard **AND** RF remote module, Set **CH's** to "**4**".
⑧ Set tracker expansion board address to "**3**".
⑨ Power both systems up (1830 series baseboard and tracker expansion board's LEDs will light up).

### After the 9 installation steps have been preformed:

Ⓐ Press **PROGRAM** button on baseboard, then activate the device wired to the tracker expansion board (card reader).
Ⓑ **RF SECURE** LED on tracker expansion board will turn from **RED** to **GREEN** (this may take up to 20 sec.) when communication has been **SUCCESSFULLY** established.
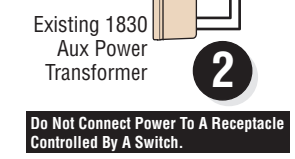
No "Green RF SECURE" LED?

Try changing **NET ID's** and **CH's** on both.
Same NET ID number's and **Same CH** number's MUST be set for **both**.
Press **PROGRAM** button on RF Remote Module after changing **NET ID** & **CH**.
Press **RESET** buttons on each after changing **NET IDs** and **CHs**.
Try a few different **NET ID** and **CH** settings. Still NO Green **RF SECURE** LED?
Relocation of just the antenna or **OPTIONAL** stronger antenna?
Relocation of tracker expansion board?
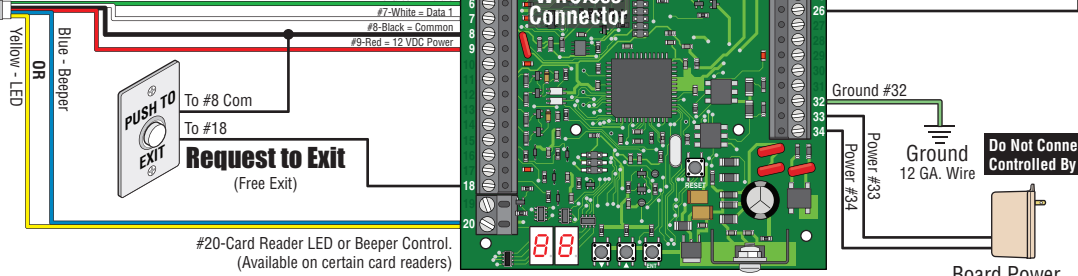
Optional 900 MHz Wireless Test Range Kit: DoorKing offers a 900 MHz wireless signal range kit (sold separately) that is used to easily test the wireless signal between the telephone entry system and any access control device(s) in desired positions **BEFORE** they are permanently installed. This test kit is self-contained and is easily positioned anywhere to quickly confirm wireless signal strength. P/N 1514-140.

Typical 900 MHz Wireless Tracker Expansion Board Wiring Options for an Access Point

See HARDwired tracker expansion board manual 2358-065 manual for more wiring options.

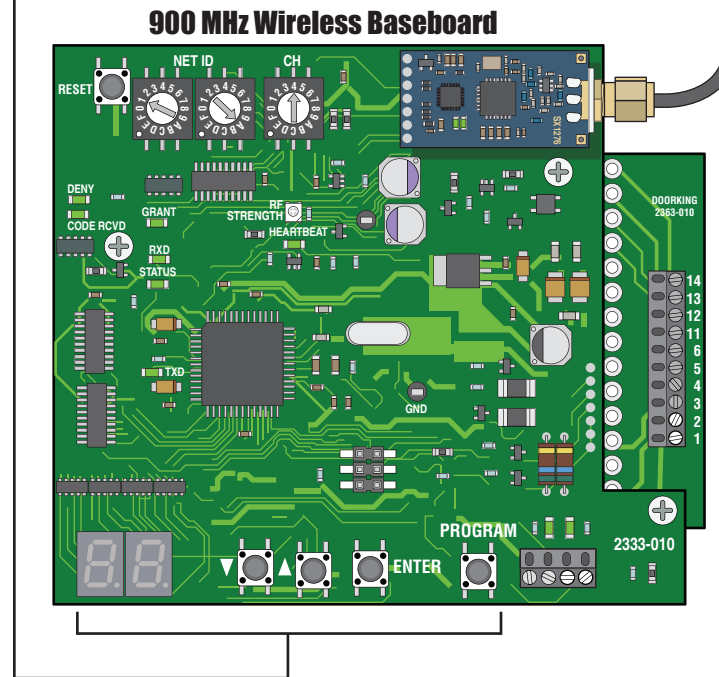2333-066 Issued 11-18
Version F

DKS DOORKING®

Programming Sequence for Wireless Baseboard

Press **PROGRAM** button and then use ▼▲ scroll buttons to display desired "**Program Step**" number from list below.
Press **ENTER** button to enter selected program step number. Enter desired data using ▼▲ buttons. Press **ENTER** button to **enter** data and exit programming.
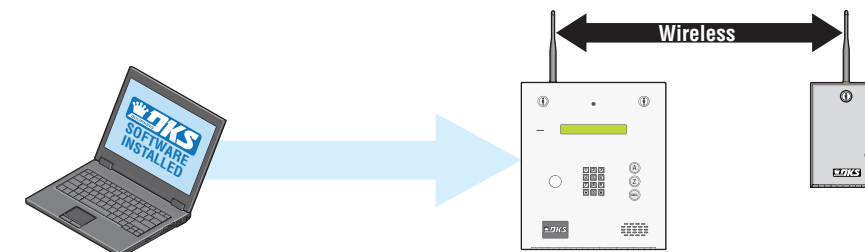
Wireless Baseboard Programming

900 MHz Wireless Baseboard

120 S. Glasgow Avenue
Inglewood, California 90301
U.S.A.

Program Step	Wireless Baseboard ONLY Programming Description and Setting Values
1	Display RF signal strength of tracker board(s) that have been programmed in program step 2. • 80 or lower - **GOOD**. (74-76 or lower preferred) • 81-85 - Unreliable signal strength. • 86-99 - **NO signal**.
2	Select tracker board(s) RF signal strength to be displayed in program step 1. Settable value is 0-18. **0** - signal from **any** tracker board address (**Default value**) **1** - tracker board addresses 3-10 **2** - tracker board addresses 11-18 **3** - tracker board address 3 ONLY **4** - tracker board address 4 ONLY etc… to: **18** - tracker board address 18 ONLY
3	Set the number of minutes to display RF signal strength. **Default value is 5 min.** Settable value is 1-30 min. **Note:** Avoid keeping the baseboard in "display mode" for a long period of time. While in this mode, it can miss the access requests of a busy network. Built in timer exits "display mode" when timer expires. Press **ENTER** button to exit display mode anytime before timer expires.
4	Restore or reset command for the below: **5** - Restore default values for programming steps 2 and 3. **7** - Initialize the RF remote module (reset 2333 baseboard is **required** after this command)
5	Action taken after the RF baseboard detects no traffic from the tracker board for more than number of minutes defined in program step 7. The below values are accepted for this programming step. **0** - Does nothing **1** - count the number of lost communication transactions (**Default value**) **2** - Reboot the RF module only **3** - Set RF module with net ID and channel selected **4** - Initialize RF module then reboot RF remote module **5** - Restore programming value, sets RF remote module net ID and CH, then reboots RF module **6** - Reboot 2333 baseboard **7** - Restore programming value, sets RF remote module net ID and CH, then reboots 2333 baseboard
6	View the number of lost communication transactions with the tracker board. Lost communication transactions is defined as: no RF traffic from tracker boards for two minutes plus the number of minutes set in program step 7. (number will display on screen after activation of wiegand device, card reader)
7	**Preset at Factory. Do Not Change. Contact DoorKing tech support.** Set the number of minutes to define a "no tracker board traffic" condition. **Default value is 11 min**. Settable value is 1-60 min.

Preset at Factory. Do Not Change. Contact DoorKing tech support. (box adjacent to step 5)

Manage the Access Control System from Your PC

Wireless

Refer to the **DKS Remote Account Manager Software** to program and manage the complete system.

Download **REMOTE ACCOUNT MANAGER** Software **FREE** at:
http://www.doorking.com/telephone/software

See the **900 MHz Wireless Baseboard manual** 2333-065
and **Tracker Expansion Board manual** 2358-065
for **ALL** tracker expansion board programming and wiring.

Wireless 1470 RF Remote Module Tracker Expansion Board Programming ONLY

Program Step	Description	Options	Selection Number	Function	Factory Default
17	1835 Checkin Time (Factory Set)	1 - 5	5	**Preset at Factory. Do Not Change. Contact DoorKing tech support.** Period Tracker board checks in with 1835 for schedule hold open (minutes).	5 Minutes
18	Low Byte MAC	1 - 99	5	**Preset at Factory. Do Not Change. Contact DoorKing tech support.** Low Byte Value MAC address used only for 900MHz. Assigned during manufacturing.	5
19	Reset to Factory Defaults	5		Sets all parameters to Factory Default	
20	View RF POT Setting	Adjustable		Sets maximum amount of allowable signal strength loss	
21	View RF Signal Strength	LED Display		Displays current signal strength between Baseboard and Tracker. • 80 or lower - **GOOD**. (74-76 or lower preferred) • 81-85 - Unreliable signal strength. • 86-99 - **NO signal**.	
22	Card Code Forwarding (Factory Set)	0 or 1	0 1	**Sets Wireless Tracker to act as Repeater** **Do Not Change. Contact DoorKing tech support.** Repeater Mode OFF Repeater Mode ON	0: Off
23	Same Zone Address Relay Delay	0 - 20		**Adding relay control delay to Trackers using the same Zone Addresses** If more than one tracker board is set to the same address (zone addresses), then change this value to a unique number. Only program this for tracker boards with the same addresses. Start out with a value of 1 then increase the next board to 2, then the 3rd board to 3 etc... This will prioritize the relay access order of the same zone address boards.	0
24	Lost Wireless Communication Options (Factory Set) **Preset at Factory. Do Not Change. Contact DoorKing tech support.**	0 - 5	0 1 2 3 4 5	**When wireless communication is lost with the base for "X" number of minutes defined in step 17, this step will instruct the tracker board what action to take.** Does nothing Counts the number of lost communication transactions Reboot the RF module only Set RF module with net ID and channel selected Initialize RF module then reboot RF remote module Restore programming value, sets RF remote module net ID and CH, then reboots RF module address boards.	1: counts the number of lost com trans.
25	View the Number of Lost Wireless Communications	0 - 99		**View the number of lost communication transactions with the base.** Use the ▼▲ arrows buttons to change the value.	0
26	Air Busy Wait Time (Factory Set)	0 - 20	2	**Preset at Factory. Do Not Change. Contact DoorKing tech support.** This value is set to 2. No need to adjust.	2

Error codes on LED Displays for Baseboard and Tracker Board

E1 - Relay connected to 4-pin terminal pins 1 & 2 is on for more than 5 seconds. Relay 1 in 1830 should be set for 00 seconds (0.25 second strike time)
E2 - Relay connected to 4-pin terminal pins 3 & 4 is on for more than 5 seconds. Relay 2 in 1830 should be set for 00 seconds (0.25 second strike time)
A1 - Board address is invalid for Tracker. Board address is improperly set as 0, 1, 2 or 19.
A2 - Dual Mode - Bad Address, 18 or 19 not allowed.

Tracker Expansion Board

900 MHz Wireless RF Remote Module

Before beginning any programming, the wireless boards **MUST** have been installed and completely wired. Boards **MUST** have power.
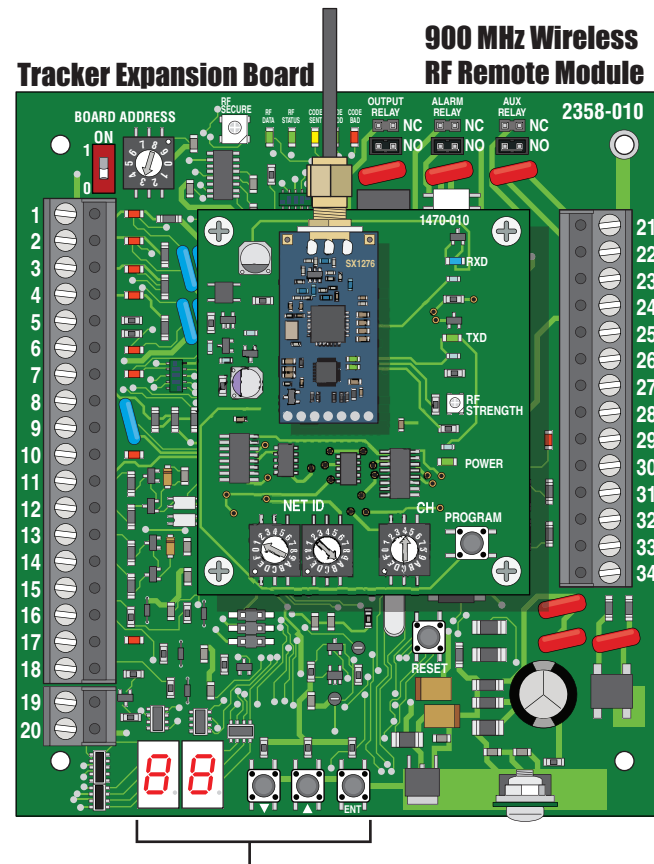
Programming Sequence for Wireless Tracker Expansion Board

Follow these basic steps to perform desired wireless programming. **EACH** tracker expansion board in the system **MUST** be physically programmed.

Compatible ONLY with Tracker Expansion Board 2358-010 Revision N or higher.

1. Press a button to activate LED display.
2. Press **ENT** button and then use ▼▲ scroll buttons to display desired "**Program Step**" number from list below.
3. Press **ENT** button to enter selected program step number.
   (LED display number will blink after **ENT** button has been pressed).
4. Select desired data while in program step using ▼▲ buttons.
5. Press **ENT** button to **enter** selected data. (Function has now been programmed into board).
6. Press **ENT** button **AGAIN** to **EXIT** programming **OR** after 10 seconds, board will **automatically EXIT** programming.

Note: Repeat these steps for all other desired wireless programming functions for **THIS** tracker expansion board.
Each tracker expansion board will have to be **INDIVIDUALLY** programmed with desired functions.