QUICKSTART "BASIC" WIRELESS TRACKER EXPANSION BOARD TO WIRELESS BASEBOARD RELAY 2 GUIDELINES

For COMPLETE installation instructions, please refer to the instruction sheets included with the wireless kits, Wireless Layout and Start-Up Guide and the HARDwired Installation/Owner's manual P/N 2358-065.

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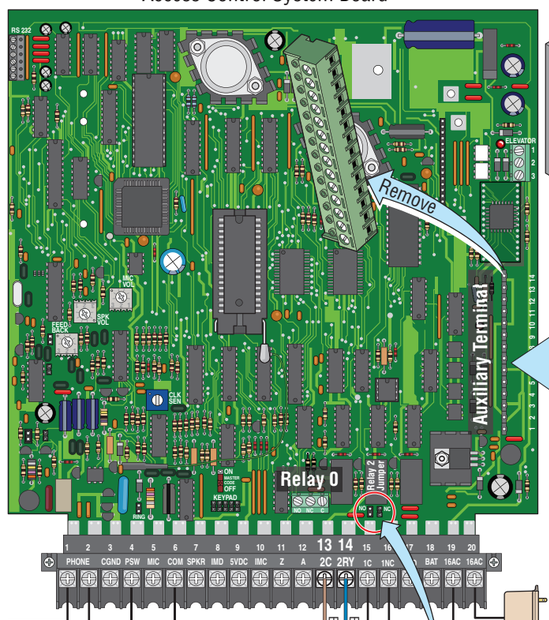
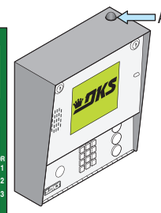
Access Control System Board



Main Door/Gate Relay 1 or Relay 0

Relay 1

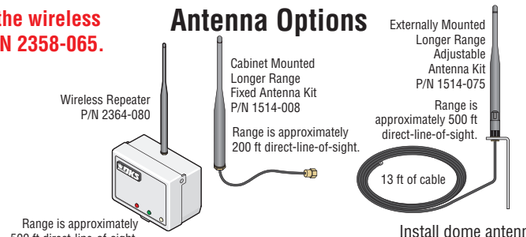
Important Note: Relay 2 is used to control wireless tracker expansion board addresses 3-10, Relay 1 or Relay 0 can be used as the Primary Relay that will open a visitor door or gate when the resident pushes "9" on their telephone.



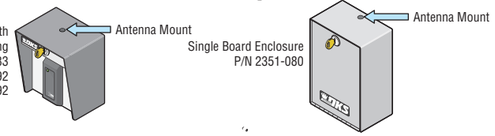
The wireless baseboard **REPLACES** the 14-pin auxiliary terminal on the access control system's board. The existing 16.5 VAC, 20 VA access control system's input power transformer is **REQUIRED** and is reconnected to the 10-pin terminal #1-#2. Antenna is **REQUIRED**.

Plug into 14-Pin Auxiliary Terminal

Antenna Options

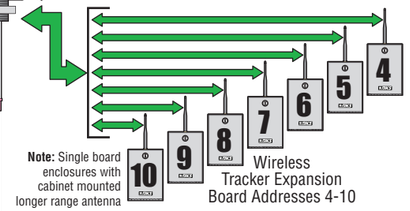


Wireless Tracker Expansion Board Enclosure Options



Install dome antennas in the top of a selected enclosure (not included).
Approximate range is 100 ft direct-line-of-sight.

Dome Antenna (Supplied)



Note: Single board enclosures with cabinet mounted longer range antenna option shown here.

Wireless Tracker Expansion Board Addresses 4-10

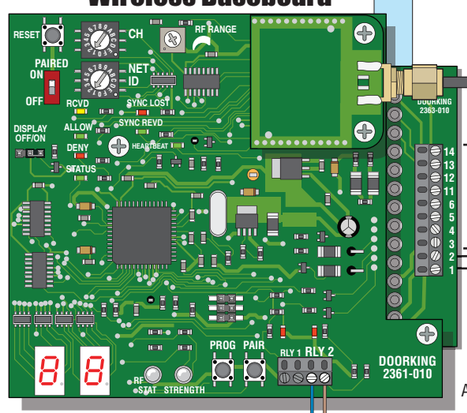
Up to 8 wireless tracker expansion boards can directly communicate with wireless baseboard **RELAY 2** at the access control system. See Layout and Start-Up guide for more information.

Dome Antenna (Supplied)

Antenna Note: This 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. If a weak signal occurs, a stronger antenna or a wireless repeater may be necessary to achieve a strong wireless signal from each access point.

Optional Wireless Test Range Kit: DoorKing offers a wireless test 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 permantly installed. This test kit is self-contained and is easily positioned anywhere to quickly confirm wireless signal loss. P/N 1514-130 or see www.doorking.com for more information about the wireless test range kit.

Wireless Baseboard



NOT used for **WIRELESS** tracker expansion boards.

Card Reader
DK Prox Reader

Existing Aux Power

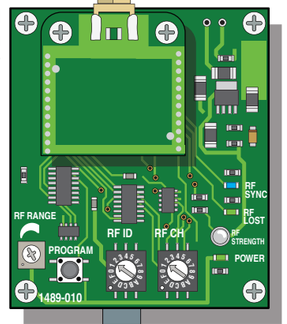
Wiegand Access Control Device
26, 30, 31-Bit Wiegand

Note: If card reader has additional lighting for outdoor use, separate power must be provided.

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

Wireless Tracker Expansion RF Board

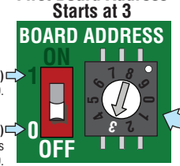
Plug the RF board into the wireless connector and secure board with 4 screws to the tracker expansion board. Power transformer must connect to tracker expansion board #33 and #34 **(REQUIRED)**. Antenna is **REQUIRED**.



Multiple Wireless Tracker Expansion Board Address Note: When using multiple wireless tracker expansion boards, **FIRST** board address **MUST** start at **3** and continue in order thru board address 10 (up to 8 boards) if required.

Board address 10 setting

First Board Address Starts at 3



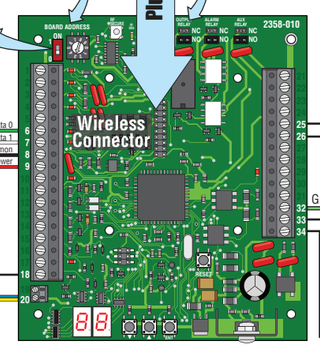
Switch MUST be **ON (1)** for board address 10.

Switch MUST be **OFF (0)** for board addresses 3 thru 9.

Set Board Address

Plug in

Set Output Relay Jumper

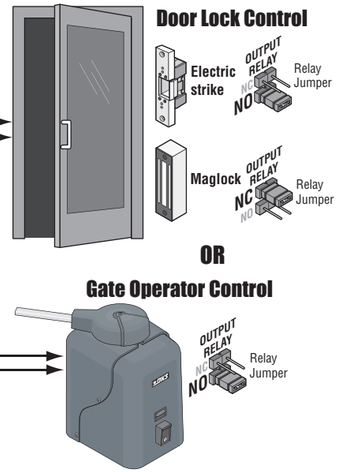


#20-Card Reader LED or Beeper Control. (Available on certain card readers)

Tracker Expansion Board Address 3

Output Relay #25 & #26

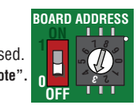
Power for electric strike or magnetic lock is **NOT provided** by the board. Use separate UL listed power supply.



Start-Up Wireless Communication Between Boards after Installation is Complete

Steps 1-4 MUST be performed on **EACH** wireless tracker expansion board used in the entire system. Power down the other wireless tracker expansion boards used in the system while performing these 4 steps on each board. See reverse side for more information.

1) **Channel Number** (CH) and **RF ID Number** (NET ID) must match on baseboard and all tracker expansion boards.
2) **RF Range** adjusted to Max (full clockwise) on each board. (RF RANGE) Board Address must be set correctly on each board used. See "**Multiple Wireless Tracker Expansion Board Address Note**".
3) Press **Program Button** on each board to save settings. (PROGRAM)
4) Press **Reset Button** on each board to reboot boards. (RESET)



After the 4 steps have been preformed:

- **RF SYNC** LED will blink **BLUE** on each board while establishing communication between boards. This may take up to 20 sec.
- **RF SECURE** LED on tracker expansion board will turn steady **RED** when communication has been **SUCCESSFULLY** established. (SECURE)

Relay 2

Relay 2 gets activated by Wiegand 2 input.

N.O. Blue
Com Brown

Typical Wireless Tracker Expansion Board Wiring Options for Access Point

NO "optional" tracker features or battery back-up wiring shown, see manual for details.

Multiple Wireless Tracker Expansion Board Wiring Note: All wireless tracker expansion boards can be wired with desired options for their access points like shown on wireless tracker expansion board address 3.

QUICKSTART ADJUSTMENTS AND PROGRAMMING OPTIONS FOR WIRELESS BOARDS GUIDELINES

For COMPLETE programming and adjustment instructions, please refer to the instruction sheets included with the wireless kits, Wireless Layout and Start-Up Guide and the HARDwired Installation/Owner's manual (P/N 2358-065).

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IMPORTANT
CH All tracker expansion boards **MUST** be set to **SAME** channel number as wireless baseboard.

IMPORTANT
NET ID All tracker expansion boards **MUST** be set to **SAME** NET ID number as wireless baseboard.

RESET Button - Press to reboot board.

ON - Only accepts card codes from **PAIRED** tracker boards.

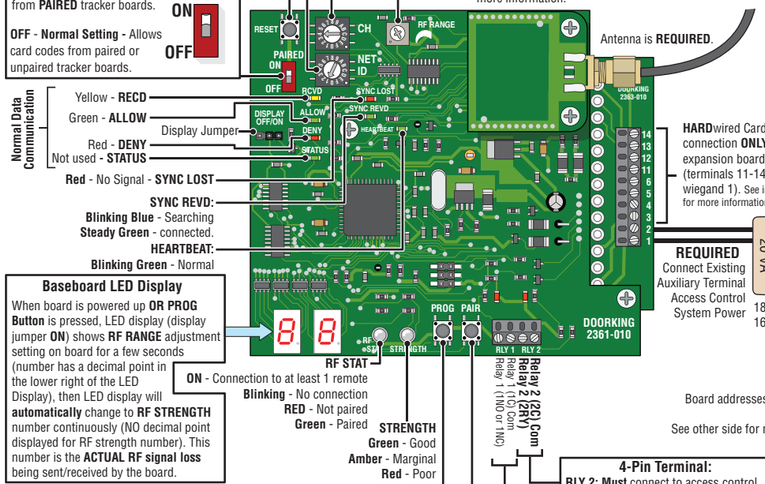
OFF - Normal Setting - Allows card codes from paired or unpaired tracker boards.

PAIRED ON / OFF

Wireless Baseboard

RF RANGE
Set to max (full clockwise). This may need to be changed when using a repeater. See Repeater instruction sheet and Wireless Start-Up guide for more information.

DO NOT connect **HARDwired** tracker expansion boards to wiegand 1 (terminals 11-14) if **WIRELESS** boards will be using wiegand 1).



Antenna is **REQUIRED**.

Normal Data Communication
- Yellow - **RECD**
- Green - **ALLOW**
- Display Jumper
- Red - **DENY**
- Not used - **STATUS**

Red - No Signal - **SYNC LOST**

SYNC REVD:
Blinking Blue - Searching
Steady Green - connected.

HEARTBEAT:
Blinking Green - Normal

Baseboard LED Display
When board is powered up **OR PROG Button** is pressed, LED display (display jumper **ON**) shows **RF RANGE** adjustment setting on board for a few seconds (number has a decimal point in the lower right of the LED Display), then LED display will **automatically** change to **RF STRENGTH** number continuously (NO decimal point displayed for RF strength number). This number is the **ACTUAL RF signal loss** being sent/received by the board.

RF STAT
ON - Connection to at least 1 remote
Blinking - No connection
RED - Not paired
Green - Paired

STRENGTH
Green - Good
Amber - Marginal
Red - Poor

Program Button - Press after adjustment is made to **RF RANGE, RF ID** or **RF CHANNEL** before changes will take effect.

PAIR Button - Press and hold 3 sec. to **PAIR** with all wireless tracker boards. Press to display **RF RANGE** and **RF STRENGTH** on LED Display.

HARDwired Card Reader or Relay 1/Wiegand 1 connection **ONLY. DO NOT** connect **HARDwired** tracker expansion boards or card reader to wiegand 1 (terminals 11-14) if **WIRELESS** boards will be using wiegand 1). See instruction sheet with wireless baseboard kit for more information.

REQUIRED
Connect Existing Auxiliary Terminal Access Control System Power

16.5 VAC 20 VA

Power Transformer
18 AWG 100 ft max
16 AWG 200 ft max

Relay 2 (2D) Com
Relay 2 (2RY)
Relay 1 (1D) Com
Relay 1 (1NO or 1NC)

4-Pin Terminal:
RLY 2: Must connect to access control system's **Relay 2** for **wireless** tracker expansion board addresses **3-10**. Access control system's relay 2 jumper MUST be set to NO or NC.

RLY 1: Must connect to access control system's **Relay 1** for **wireless** tracker expansion board addresses **11-18**. See instruction sheet with wireless baseboard kit for more information.

Access Control Device 26, 30, 31-Bit Wiegand
- Data 0
- Data 1
- Com
- 12 VDC

Wireless Tracker Expansion Board

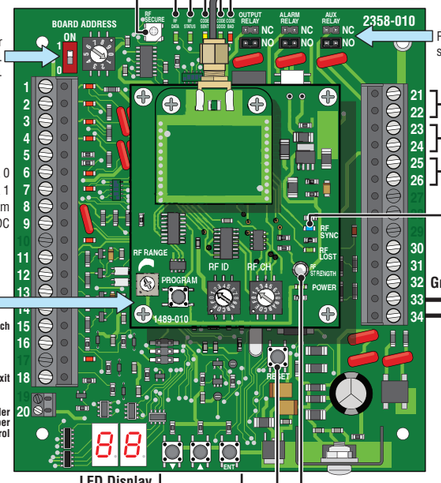
RF SECURE:
UNPAIRED MODE:
Steady Red – Board **is** communicating with **unpaired** wireless baseboard.
Blinking Red – Board is **NOT** communicating with **unpaired** wireless baseboard.
PAIRED MODE:
Steady Green - Board **is** communicating with **paired** wireless baseboard.
Blinking Green - Board is **NOT** communicating with **paired** wireless baseboard.

RF DATA – (Green) Reply from baseboard.
RF STATUS – (Green) Not used.
CODE SENT – (Yellow) Card code is sent to baseboard.
CODE GOOD – (Green) Access granted.
CODE BAD – (Red) Access denied or card code **not** in database.

Antenna is **REQUIRED**.

Board addresses **MUST** be set for each board used. See other side for more information.

Relay jumpers **MUST** be set for each relay used.



- 21 22 **Aux Relay**
- 23 24 **Alarm Relay**
- 25 26 **Output Relay**

RF SYNC:
Slowly Blinking Blue
Sync to baseboard.

Ground - REQUIRED

REQUIRED
16.5 VAC 20 VA

Power Transformer
18 AWG 100 ft max
16 AWG 200 ft max

Door Contact Switch
Request to Exit
Card Reader LED/Beeper Control

LED Display

RF STRENGTH
Green - Good
Amber - Marginal
Red - Poor

RESET Button -
Press to reboot board.

Wireless Tracker Expansion RF Board Adjustments

RF Range
Set to max (full clockwise). This may need to be changed when using a repeater. See Repeater instruction sheet and Wireless Start-Up guide for more information.

Program Button:
- Press after adjustment has been made to **RF RANGE, RF ID** or **RF CH** before changes will take effect.
- Press and hold for 3 sec. to **PAIR** to wireless baseboard, may take up to 20 sec. (**RF SECURE** LED **Paired** - steady **GREEN**).
- Press and hold **again** for 3 sec. to **UNPAIR** from wireless baseboard if necessary (**RF SECURE** LED **Unpaired** - steady **RED**).

Channel and ID

IMPORTANT
RF CH All tracker expansion boards **MUST** be set to **SAME** channel number as wireless baseboard.

IMPORTANT
RF ID All tracker expansion boards **MUST** be set to **SAME** NET ID number as wireless baseboard.

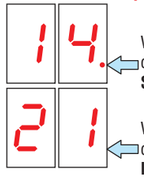
Basic Programming Sequence on EACH Wireless Tracker Expansion Board

Follow these basic steps to perform desired programming, See programming options table for **PROGRAM STEPS**.

1. Press ▼▲arrow buttons or **ENT** button to **ACTIVATE** LED display.
2. Press ▼▲arrow buttons again to **CHOOSE** desired **PROGRAM STEP**.
3. Press **ENT** button to **ENTER** desired **PROGRAM STEP**. (LED display number will blink after **ENT** button has been pressed).
4. Press ▼▲arrow buttons to choose **SELECTION NUMBER** for desired function of program step.
5. Press **ENT** button to program **SELECTION NUMBER** for desired function of program step. (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 programming functions. **Each** tracker expansion board will have to be **INDIVIDUALLY** programmed with desired functions. After all tracker expansion boards have been programmed.....

IMPORTANT Display Decimal Point Note



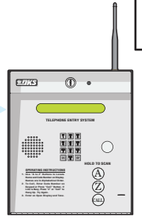
When decimal point is displayed: Indicates you are **SELECTING** a program step.

When decimal point is **NOT** displayed: Indicates you are **IN** a program step.

Manage the Complete Access Control System from Your PC

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

Your PC connected to the access control system. Either IM Server **OR** TCP/IP **OR** RS-232 **OR** Modem to Modem Connection. See **PC Programmable Telephone Entry and Access Control Systems Installation/Owner's manual** for more information about connection options.



Programming Options on EACH Wireless Tracker Expansion Board

Rev-E 1-13-14

Program Step	Description	Options	Selection Number	Function	Factory Default
1	**Door Strike Timer**	00 - 99		**Sets Strike Time for output relay (term 25 & 26)**	
			00	0.25 second strike time	01 - 1 second
			01 - 99	Strike time in 1-second increments	
2	**Free Exit Timer, Strike Time**	00 - 99		**Set Strike Time for RX (Request to Exit) of output relay (input at term 18)**	
			00	0.25 second Egress Strike time	01 - 1 second
			01 - 99	Egress Strike time in 1-second increments	
3	**Door Ajar Timer**	00 - 99		**Timer starts when valid access has been granted.**	
			00	1 second Door Ajar Timer	12 - 60 secs
			01 - 99	Timer set in 5-second increments: 01 = 5 seconds, 10 = 50 seconds	
4	**Aux Relay Timer**	00 - 99		**Timer setting for Aux Relay activation in 5-second increments**	
			00	1 second Door Ajar Timer	12 - 60 secs
			01 - 99	Timer set in 5-second increments: 01 = 5 seconds, 10 = 50 seconds	
5	**Free Exit Timer, Aux Relay**	00 - 99		**Set Strike Time for RX (Request to Exit) of Aux relay (ONLY available if Dual Door Mode step 12 is ON)**	
			00	0.25 second Egress Strike time	01 - 1 second
			01 - 99	Egress Strike time in 1-second increments	
6	**Free Exit, No Strike**	0 or 1		**Set RX (Request to Exit) function. Activate Output Relay or do not Activate Output Relay**	
			0	Do Not Activate Output Relay or Reader Beeper/LED when RX input is received	1 - Activate
			1	Activate Output Relay and Reader Beeper/LED for Free Exit Strike Time when RX received	
7	**Not Used**				
8	**Door Contact Switch Logic**	0 or 1		**Sets type of Door Switch contacts**	
			0	N.O. contact from door switch with Door Closed (Circuit Open - CO)	0 - N.O.
			1	N.C. contact from door switch with Door Closed (Circuit Close - CC)	
9	**Auto Relock**	0 or 1		**Turns on Auto Relock function (not available if Dual Door Mode, step 12 is ON)**	
			0	Output Relay is activated for Strike Time	0 - Disabled
			1	Door Contact Switch required. If door returns to closed position during Strike Time door will "relock" after 1 second, even if strike time has not expired.	
10	**Beeper / LED Hold Open**	0 or 1		**Sets how BEEPER or LED will function during Hold Open**	
			0	When Hold Open occurs, Beeper or LED is active only during Strike Timer	0
			1	When Hold Open occurs, Beeper or LED will remain active during Hold Open	
11	**Hold Open or Hold Egress functions**	0 or 1		**Sets how Aux & Alarm Relay responds during Hold Open or Hold Egress situation**	
			0	No Aux Relay functions. Alarm will be in "Reset". If Alarm Relay is set for "integral" mode, Alarm relay will not activate. If Alarm Relay set for "Bypass" mode, Alarm Relay will activate for Hold Open period or Extended Egress Hold.	0 - No relay functions
			1	Aux Relay will function for all settings. If Alarm Relay is set for "integral" mode, Alarm relay will not activate. If Alarm Relay set for "Bypass" mode, Alarm Relay will activate for Hold Open period or Extended Egress Hold.	
12	**Dual Door Mode**	0 or 1		**Sets Tracker to function as 2 Access Points (2 tracker addresses)**	
			0	Disabled, Tracker functions as single access point	0 - Disabled
			1	Dual Mode: Tracker functions as set board address and next sequential address Card Read will be sent to controller as set board address, access is granted or denied Card then sent as set address +1, access granted or denied. Aux Relay becomes 2nd output relay. All other Aux Relay functions disabled. Door Contact switch becomes RX (Request to Exit) for 2nd address.	
13	**Not Used**				
14	**Not Used**				
15	**Aux Relay Functions**	0 - 12		**Sets function for Aux Relay**	
			0	Aux Relay Disabled	0 - Disabled
			1	No Door Ajar Timer: Requires Door Contact Switch. Aux Relay activates when Door Not Closed.	
			2	No Door Ajar Timer, Pulse: Requires Door Contact Switch. Aux Relay "pulses" when Door Not Closed.	
			3	Door Ajar Timer: Requires Door Contact Switch. When door opens, start Door Ajar Timer. When timer expires Aux Relay activates for Aux Relay timer or until door closes, whichever occurs first.	
			4	Door Ajar, Pulse: Requires Door Contact Switch. When door opens, start Door Ajar Timer. When timer expires Aux Relay Pulses for Aux Relay timer or until door closes, whichever occurs first.	
			5	Door Ajar, Pulse warning the ON: Requires Door Contact Switch. When door opens, Pulse Aux Relay and start Door Ajar Timer. When timer expires Aux Relay ON for Aux Relay timer or until door closes, whichever occurs first.	
			6	Door opens for any reason, Start Door Ajar timer and pulse Aux Relay. When Door Ajar timer expires, start Aux Timer and continue Pulsing Aux Relay. When Door Closes or both timers expire, turn off Aux Relay	
			7	Aux Relay as 2nd Alarm Relay. Aux Relay will mirror Alarm Relay functions.	
			8	Aux Relay as 2nd Alarm Relay, PULSE. Aux relay will Pulse during any Alarm Relay activation.	
			9	Good Card: Aux Relay will activate for Aux Relay timer for any Access Granted Card	
			10	Any Card: Aux Relay will activate for Aux Relay Timer when any card has been presented.	
			11	Bad Card: Aux Relay will activate for Aux Relay timer when a card has been denied	
			12	Warn before Hold Open or Release of Hold Open: Aux relay will activate for Aux Relay timer when scheduled Hold Open begins or ends. Output Relay will be delayed until Aux Timer expires. **DO NOT** set Aux Timer above 60 seconds in this mode.	
16	**Alarm Relay Functions** **Door Operation Note:** **PROPER Condition:** The access control system **OR** request to exit device **HAS** activated the **OUTPUT RELAY** on the tracker expansion board and the door contact switch is **CLOSED** (Door is OPEN). This indicates that the door has been **PROPERLY OPENED**. **FORCED Condition:** The access control system **OR** request to exit device has **NOT** activated the **OUTPUT RELAY** on the tracker expansion board and the door contact switch is **CLOSED** (Door is OPEN). This indicates that the door has been **FORCED OPENED**.	0 - 4		**Sets function for Alarm Relay**	
			0	Aux Relay Disabled	0 - Disabled
			1	**Bypass Mode:** Alarm Relay provides "Bypass" to Alarm Door Switch. With proper door input (access or egress) activate Alarm Relay, start Strike timer and Door Ajar timer. When Door Ajar timer expires, deactivate Alarm Relay. If second Door Contact Switch is provided, generate transaction for Door Ajar and Door Closed following Door Forced condition. Also generate transaction for Door Forced condition.	
			2	**Integral Mode, Door Ajar Timer:** Door Contact Switch connected to Tracker, Alarm Relay provides connection directly to Alarm System. When door is opened for any reason, start Door Ajar timer. When Door Ajar timer expires and Door is still OPEN, activate Alarm Relay. Reset when door closes. Send Door Ajar and Door Close transactions.	
			3	**Integral Mode, Proper and Forced condition:** Door Contact Switch connected to Tracker, Alarm Relay provides connection directly to Alarm System. With proper door input (access or egress) start Strike timer and Door Ajar timer. When Door Ajar timer expires and Door is still OPEN, activate Alarm Relay. Reset when door closes. If door is opened without proper condition, activate alarm relay. When door closes deactivate Alarm Relay. Send Door Ajar, Door Close and Door Forced transactions.	
			4	**Gate Alarm Function:** Alarm Relay will activate for 1 second when tracker board receives a "Gate Forced" or "Gate Obstructed" transaction from the operator control board.	
17	**Not Used**				
18	**Not Used**				
19	**Reset to Factory Defaults**	5	5	**Sets all parameters to Factory Default**	
20	**View RF POT Setting**	Adjustable Setting		**Sets maximum amount of allowable signal strength loss**	
21	**View RF Signal Loss**	Displays on LED		**Displays current signal loss between Base and Tracker.**	
22	**Card Code Forwarding**	0 or 1		**Sets Wireless Tracker to act as Repeater** ONLY USE AS DIRECTED BY DOORKING TECH SUPPORT 0=Repeater Mode OFF 1=Repeater Mode ON	0 - Off

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