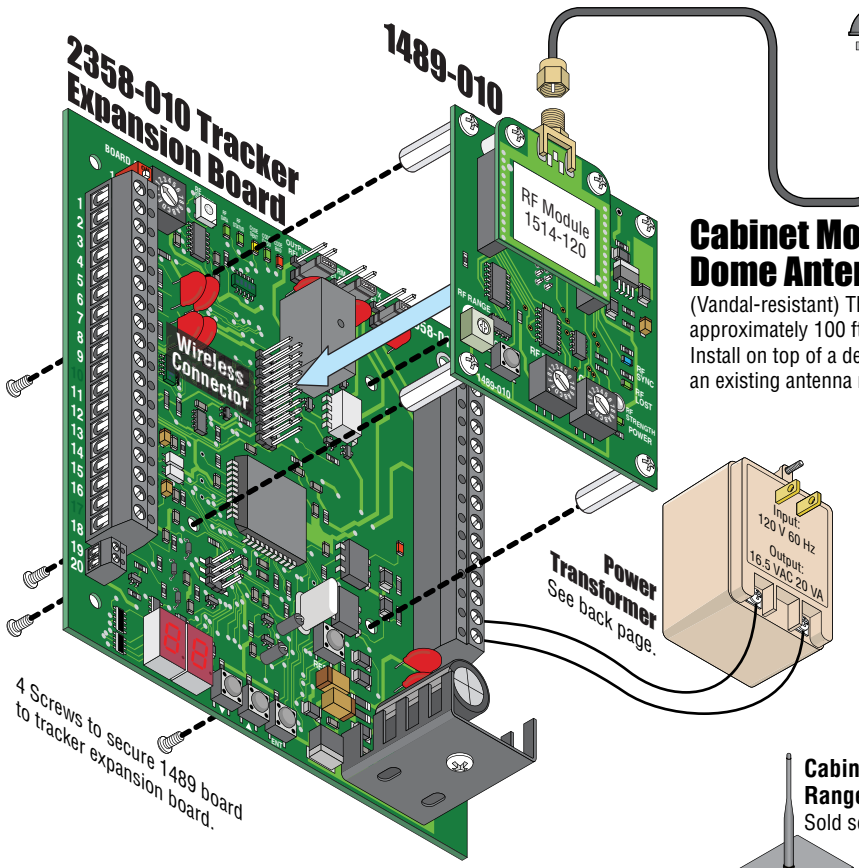
WIRELESS TRACKER EXPANSION BOARD RF KIT

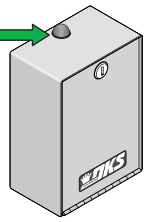
DoorKing Part Number
1489-080

This wireless kit provides wireless communication for a 2358-010 tracker expansion board to a wireless baseboard in a access control system. Use wireless tracker expansion boards **ONLY** with DoorKing: 1833, 1835, 1837 and 1838 multi-door access controller access control systems. **DO NOT** use with 1838 Access Plus model.

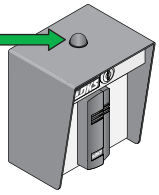
Installation

Plug the 1489-010 board into the wireless connector and secure boards with 4 screws to the tracker expansion board. See the HARDwired tracker expansion board manual to connect desired options to terminals #1- #34 to manage a remote access point. **DO NOT CONNECT ANY WIRES TO TERMINALS #10, #17, #27, #28 or #29 (Used for HARDwire communication line ONLY).** Power transformer must connect to tracker expansion board #33 and #34 **(REQUIRED)**. Antenna is **REQUIRED**, see below for antenna options.





Single Board Enclosure
Sold separately
P/N 2351-080



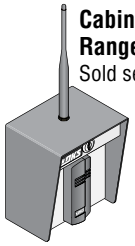
Single Board Enclosure with Built-In Card Reader
Sold separately
P/N 1815-231

Cabinet Mounted Dome Antenna Included
(Vandal-resistant) The range is approximately 100 ft direct-line-of-sight. Install on top of a desired enclosure in an existing antenna mounting hole.

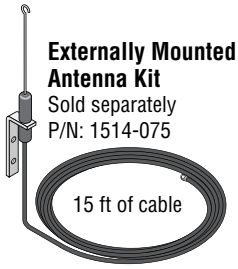
Important Antenna Note: Antenna range **WILL VARY GREATLY** depending on individual setup (Antenna height above the ground, background signal interference, physical obstructions (trees, buildings etc.) and what antenna you choose). Adverse weather (rain) **CAN** also affect antenna range.

Range testing is HIGHLY recommended before FINAL installation.

Other Antenna Options



Cabinet Mounted Longer Range Antenna
Sold separately, P/N: 1514-002
Range is approximately 200 ft direct-line-of-sight. Install on top of the cabinet.
NOT vandal-resistant.

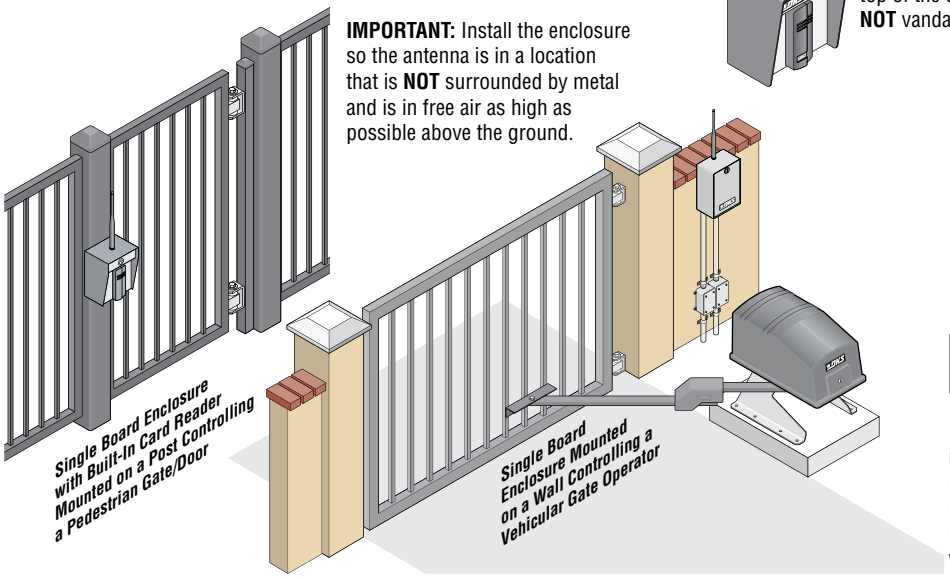


Externally Mounted Antenna Kit
Sold separately
P/N: 1514-075

Range is approximately 500 ft direct-line-of-sight. Install as high as possible in free air above tracker expansion board.

Typical Remote Access Point Installations

IMPORTANT: Install the enclosure so the antenna is in a location that is **NOT** surrounded by metal and is in free air as high as possible above the ground.



Wireless Repeater
Sold separately, P/N 2364-080

May be necessary to increase the wireless communication range between the access control system and the tracker expansion board(s). It is located between the wireless antennas. It will receive a signal sent to it by one wireless system and repeat that signal to the next wireless system. The range is approximately 500 ft direct-line-of-sight with no signal interference or physical obstructions.

Board Reference

DoorKing Part Number
1489-080

See "**Wireless System Layout and Start-Up Procedure**" for system layout limitations.

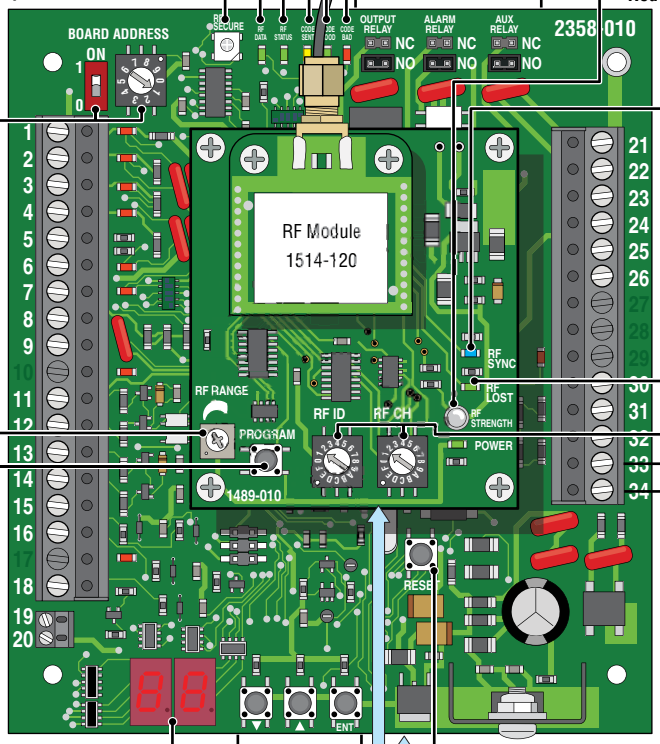
RF SECURE LED
UNPAIRED MODE:
Steady Red – Board **is** communicating with **unpaired** wireless baseboard.
Blinking Red – Board is **NOT** communicating with **unpaired** wireless baseboard.
PAIRED MODE:
Steady Green - Board **is** communicating with **paired** wireless baseboard.
Blinking Green - Board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

RF Data LED – Blinks when receiving a reply from wireless baseboard after a card code is sent.
RF Status LED – Not used.
Code Sent LED – Blinks after a card code has been sent to wireless baseboard.
Code Good LED – Blinks if the card code **is** in the database (access granted).
Code Bad LED – Blinks if the card code is **not** in the database (access denied).

Antenna is **REQUIRED**.

Board Relay Jumpers

RF Strength LED:
Updated every time a **RF SYNC** signal is received.
Green - Strong signal - **Normal**
Yellow - Marginal signal - May lose communication.
Red - Poor signal - Unreliable



Board Address (REQUIRED)
Connection to Wiegand 2: Addresses 03-10
Connection to Wiegand 1: Addresses 11-18
See HARDwire tracker expansion board manual for more information.

RF SYNC LED:
Blinking Blue - Connected with wireless baseboard.
Blinking Rapidly - Pairing with wireless baseboard.
OFF - **No** signal with wireless baseboard.
Note: If LED lights for a couple of seconds after the reset button or program button is pressed, this indicates this board has been programmed to forward card codes for other boards (See program table).

RF Range Adjustment
Set to max (full clockwise) for most applications. This may need to be dialed back to limit the range when using a repeater.

RF LOST LED:
ON - Lost communication with wireless baseboard.
OFF - Communication is established with wireless baseboard.
Blinking Rapidly - Pairing with wireless baseboard.

RF ID **RF CH**

Important
MUST be set to **SAME** ID number and channel number as the wireless baseboard.

Program Button:
- Press after adjustment has been made to the **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 seconds to **PAIR.** (**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**).

Power Transformer
16.5 VAC 20 VA
Power transformer is **REQUIRED** and is wired to terminals #33 and #34, wire polarity does not matter.
18 GA. Wire 100 ft max
16 GA. Wire 200 ft max

IMPORTANT Wiring and LED Note:
See HARDwire tracker expansion board manual for terminal #1 - #34 connections and LED descriptions. **DO NOT** connect any wires to terminals #10, #17, #27, #28 and #29.

LED Display

Programming Buttons

Press ▼▲ buttons or **ENT** button to activate LED display.

RESET Button - Press to reboot tracker expansion board **AND** the 1489 wireless board.

2358 Tracker Expansion Board

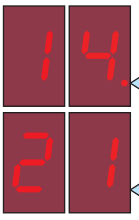
1489 Wireless Board

Programming

Basic Programming Sequence on EACH Board

Follow these basic steps to perform desired programming, See programming options table for **PROGRAM STEPS** on next page. **EACH** tracker expansion board in the system **MUST** be physically 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.

1. Press ▼▲ arrow buttons or **ENT** button to **ACTIVATE** LED display.
2. Press ▼▲arrow buttons again to **SELECT** 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 select **SELECTION NUMBER** for desired program step.
5. Press **ENT** button to program **SELECTION NUMBER** for desired 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 for **THIS** tracker expansion board.
Each tracker expansion board will have to be **INDIVIDUALLY** programmed with desired functions.

Programming Options on EACH Wireless Tracker Expansion Board

Program Step	Function	Options	Selection Number	Function Description	Factory Default
1	**Door Strike Timer**	00 - 99 MIN MAX		**Sets Strike Time for Output Relay (term #25 & #26)**	01 (1 second)
			00	0.25 second strike time - MINIMUM	
			01 - 99	Strike time in 1-second increments: 01 = 1 second, 99 = 99 seconds - MAXIMUM	
2	**Free Exit Timer, Strike Time**	00 - 99 MIN MAX		**Set Strike Time for RX of Output Relay (input at term #18)**	01 (1 second)
			00	0.25 second Egress Strike time - MINIMUM	
			01 - 99	Egress Strike time in 1-second increments: 01 = 1 second, 99 = 99 seconds - MAXIMUM	
3	**Door Ajar Timer**	01 - 99 MIN MAX		**Timer starts when valid access has been granted**	12 (60 seconds)
			00	1 second Door Ajar Timer - MINIMUM	
			01 - 99	Timer set in 5-second increments: 01 = 5 seconds, 10 = 50 seconds, 99 = 495 seconds - MAXIMUM	
4	**Aux Relay Timer**	00 - 99 MIN MAX		**Timer setting for Aux Relay activation**	12 (60 seconds)
			00	1 second Door Ajar Timer - MINIMUM	
			01 - 99	Timer set in 5-second increments: 01 = 5 seconds, 10 = 50 seconds, 99 = 495 seconds - MAXIMUM	
5	**Not Used**				
6	**Not Used**				
7	**Not Used**				
8	**Door Contact Switch Logic**	0 or 1		**Sets Door Contact Switch for the type Door Lock connected to Output Relay**	0 (N.O. w/door closed)
			00	N.O. - Normally Open: contact from door lock with Door Closed (typical - electric strike)	
			01 - 99	N.C. - Normally Closed: contact from door lock with Door Closed (typical - maglock)	
9	**Not Used**				
10	**Not Used**				
11	**Hold Open or Hold Egress functions**	0 or 1		**Sets how Aux & Alarm Relays respond during Hold Open or Hold Egress situation**	0 (No Aux relay functions)
			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.	
			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	**Not Used**				
13	**Not Used**				
14	**Not Used**				
15	**Aux Relay Functions**	0 - 5		**Sets function for Aux Relay (term #21 & #22)**	0 (Disabled)
			0	Aux Relay 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 Timer, 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.	
16	**Alarm Relay Functions**	0 - 4		**Sets function for Alarm Relay (term #23 & #24) See Door Operation Note below.**	0 (Disabled)
			0	Aux Relay Disabled	
			1	**Bypass Mode:** Alarm Relay provides "Bypass" to Alarm Door Contact 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 Defaults.**	
20	**View RF POT Setting**	Displays on LED Display		Sets maximum amount of allowable signal strength loss	
21	**View RF Signal Loss**	Displays on LED Display		Displays current signal loss between Base and Tracke	
22	**Card Code Forwarding**	0 or 1		Sets Wireless Tracker to act as Repeater ONLY USE AS DIRECTED BY DOORKING TECH SUPPORT	0 (Off)
			0	Repeater Mode OFF	
			1	Repeater Mode ON	

Important Notice Due to the nature of wireless communications, transmission and reception of data can never be guaranteed. Data may be delayed, corrupted (i.e., have errors) or be totally lost. Although significant delays or losses of data are rare when wireless devices are used in a normal manner with a well-constructed network, DoorKing wireless products should not be used in situations where failure to transmit or receive data could result in damage of any kind to the user or any other party, including but not limited to personal injury, death, or loss of property. DoorKing, Inc. accepts no responsibility for damages of any kind resulting from delays or errors in data transmitted or received using DoorKing wireless products, or for failure of DoorKing wireless products to transmit or receive such data.

Safety and Hazards Do not operate DoorKing wireless products in areas where cellular modems are not advised without proper device certifications. These areas include environments where cellular radio can interfere such as explosive atmospheres, medical equipment, or any other equipment which may be susceptible to any form of radio interference. DoorKing wireless products can transmit signals that could interfere with this equipment. Do not operate DoorKing wireless products in any aircraft, whether the aircraft is on the ground or in flight. In aircraft, DoorKing wireless products **MUST BE POWERED OFF.** When operating, DoorKing wireless products can transmit signals that could interfere with various onboard systems.

Note: Some airlines may permit the use of cellular phones while the aircraft is on the ground and the door is open. DoorKing wireless products may be used at this time.

The driver or operator of any vehicle should not operate DoorKing wireless products while in control of a moving vehicle. Doing so will detract from the driver or operator's control and operation of that vehicle. In some states and provinces, operating such communications devices while in control of a vehicle is an offence.

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