WyRELESS ACCESS

PRELIMINARY

CONFIGURING & OPERATING INSTRUCTIONS

WYRELESS ACCESS™ SYSTEM

(WAS)

RECOGNITION SOURCE

3820 Stern Avenue
St. Charles, IL 60174
Phone: 630-762-4450
Fax: 630-762-4455
P/N: M053-xxx-x001.1

CONFIGURING & OPERATING INSTRUCTIONS

NOTE: This manual is intended to be used after the Wyreless Access™ Modules have been installed. Each Wyreless Access™ module has its own installation manual. Use this manual to configure and operate your system.

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1. Wyreless Access™ System (WAS)

Every access control system that uses Wyreless Access™ contains two different types of modules (Figure 1-1):

- at least one Wyreless Panel Interface Module (WPIM), and
- at least one Wyreless Access Point Module (WAPM)

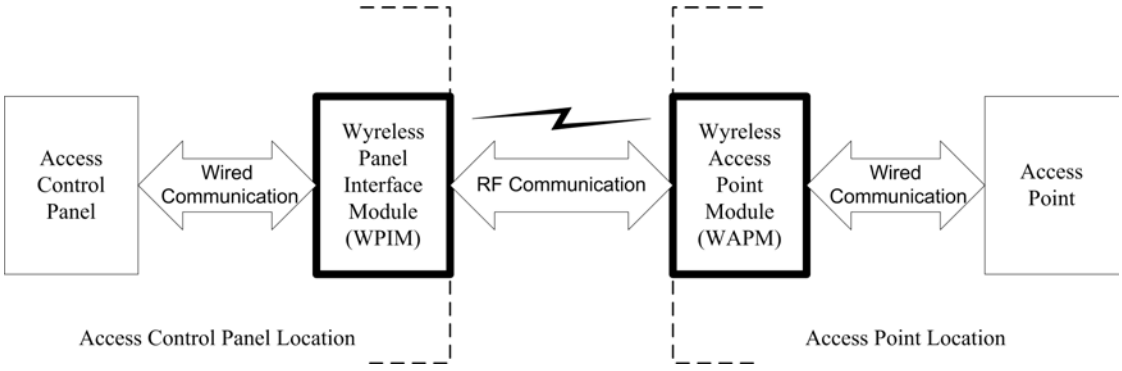

Figure 1-1 – Wyreless Access System Block Diagram

Recognition Source's product line contains several different expressions of each module (Table 1-1).

Wyreless Access™ Module			Manual	
Name	**Acronym**	**Type**	**Section**	**Page**
Panel Interface Module	PIM	WPIM	2	5
Panel Interface Module Expander	PIME	WPIM	3	12
Modular Integrated Reader Lock	MIRL	WAPM	4	13
Wireless Reader Interface	WRI	WAPM	5	18
Wireless Integrated Strike Interface*	WISI	WAPM	6	22
Wireless Universal Strike Interface	WUSI	WAPM	7	27
Wireless Portable Reader*	WPR	WAPM	8	31
Wireless Contact Monitor*	WCM	WAPM	9	36

*Not evaluated by UL.

Table 1-1 – Recognition Source Wyreless Access™ Product Line

The WPIM is wired to the access control panel and ideally is installed very close to the access control panel. The WPIMs installation location is determined by the location of the WAPMs with which it will communicate using RF.

The WAPM is installed at the access point where access will be controlled and/or monitored. Depending on the application and which WAPM is used, some wiring at the access control point may be required.

Regardless of which WPIM or WAPM module is used, the communication link between the WPIM and WAPM is always RF.

This manual describes the configuration and operation of all the WPIMs and WAPMs in the Recognition Source Wyreless Access™ Product Line.

2. Panel Interface Module (PIM)

The Panel Interface Module (PIM) is a product in the Recognition Source's Wyreless Panel Interface Module (WPIM) category. The PIM is the wireless interface to an access control panel. Table 2-1 & Table 2-2 show all the PIM sales models and their major specifications.

Sales Model	PIM-OTD
Closed Enclosure	
Opened Enclosure	
Extender	PIME-OTD
Antenna	internal "c" or remote (ANT-REMOTE) (ANT-6DB-FLAT)

Table 2-1 – PIM Enclosure Variations

MODEL	ENCLOSURE	MAXIMUM NUMBER OF WAPMs	LOCATION	ACCESS CONTROL PANEL INTERFACE/DESCRIPTION
PIM-OTD	plastic	2	indoor	Magnetic (clock & data) or Wiegand (data1/data0)
PIM-OTD-485	plastic	16	indoor	RS485
PIME-OTD	n/a	2	indoor	Magnetic (clock & data) or Wiegand (data1/data0)
ANT-REMOTE	plastic	n/a	indoor outdoor	Optional remote omni-directional antenna (0 DB gain)
ANT-6DB-PANEL	plastic	n/a	indoor outdoor	Optional remote directional panel antenna (6 DB gain)

Table 2-2- PIM Sales Model Table

2.1 How to determine the version of PIM PCB

There are two versions of the PIM printed circuit board (PCB): RS232 (Figure 2-1) and RS485 (Figure 2-2).

The version of PIM PCB being installed can be identified by observing which connectors are installed on the PCB. Compare the board being installed to Figure 2-1 and Figure 2-2.

2.1.1 RS232 PIM PCB (Figure 2-1)

If the RS232, 9-pin connector, J5, is installed and the RS485, 5-pin terminal block, J7, is missing then it is a RS232 PIM PCB

2.1.2 RS485 PIM PCB (Figure 2-2)

The RS485 PIM PCB can be uniquely identified in one of two ways:

- If the RS232, 9-pin connector, J5, is installed and the RS485, 5-pin terminal block, J7, is installed it is a RS485 PIM PCB
- If the Access Point A, 8-pin panel connector, J3 and the Access Point B, 8-pin panel connector, J4, are missing it is a RS485 PIM PCB

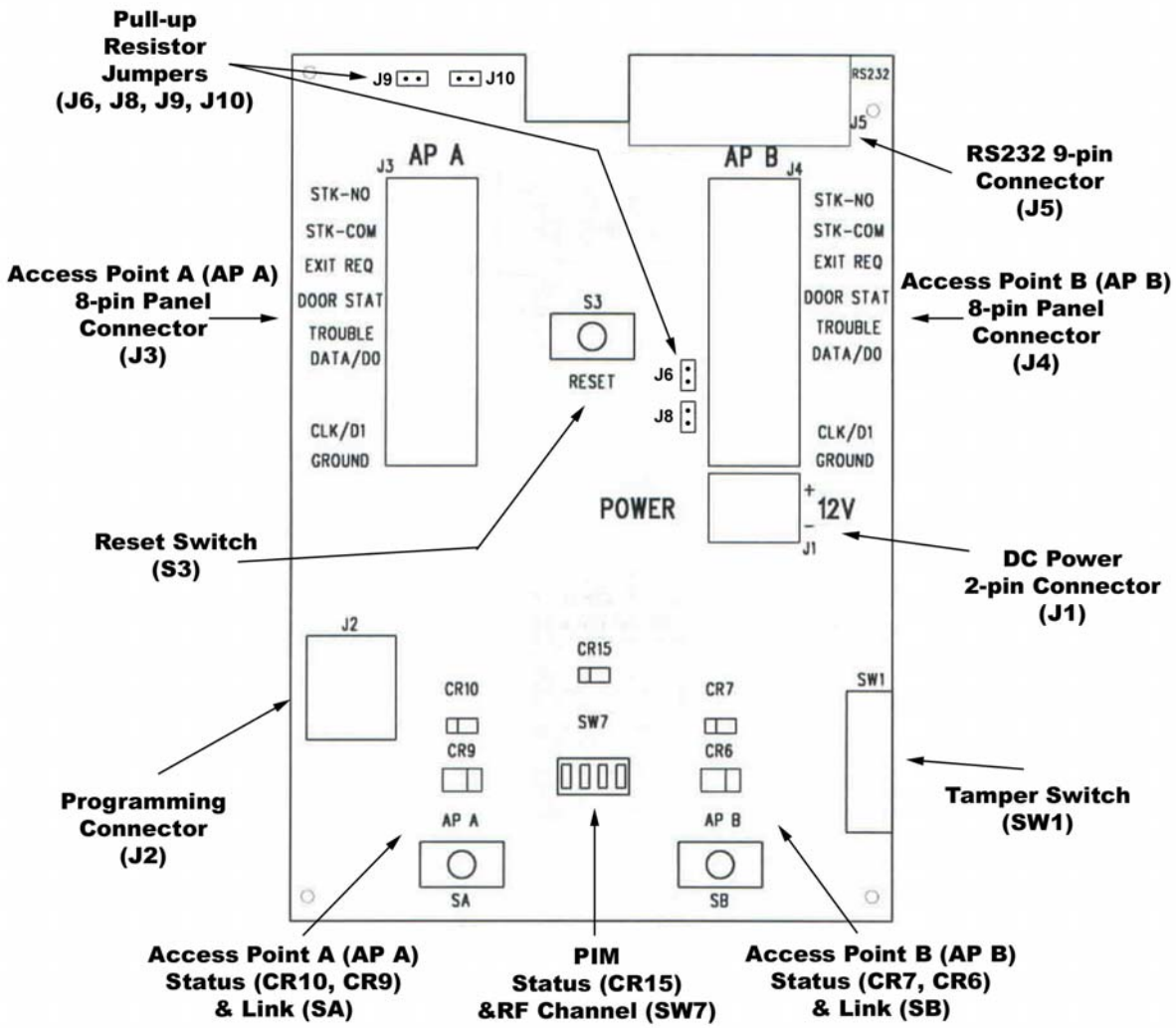

Figure 2-1 – RS232 PIM & PIME Printed Circuit Board (PCB)

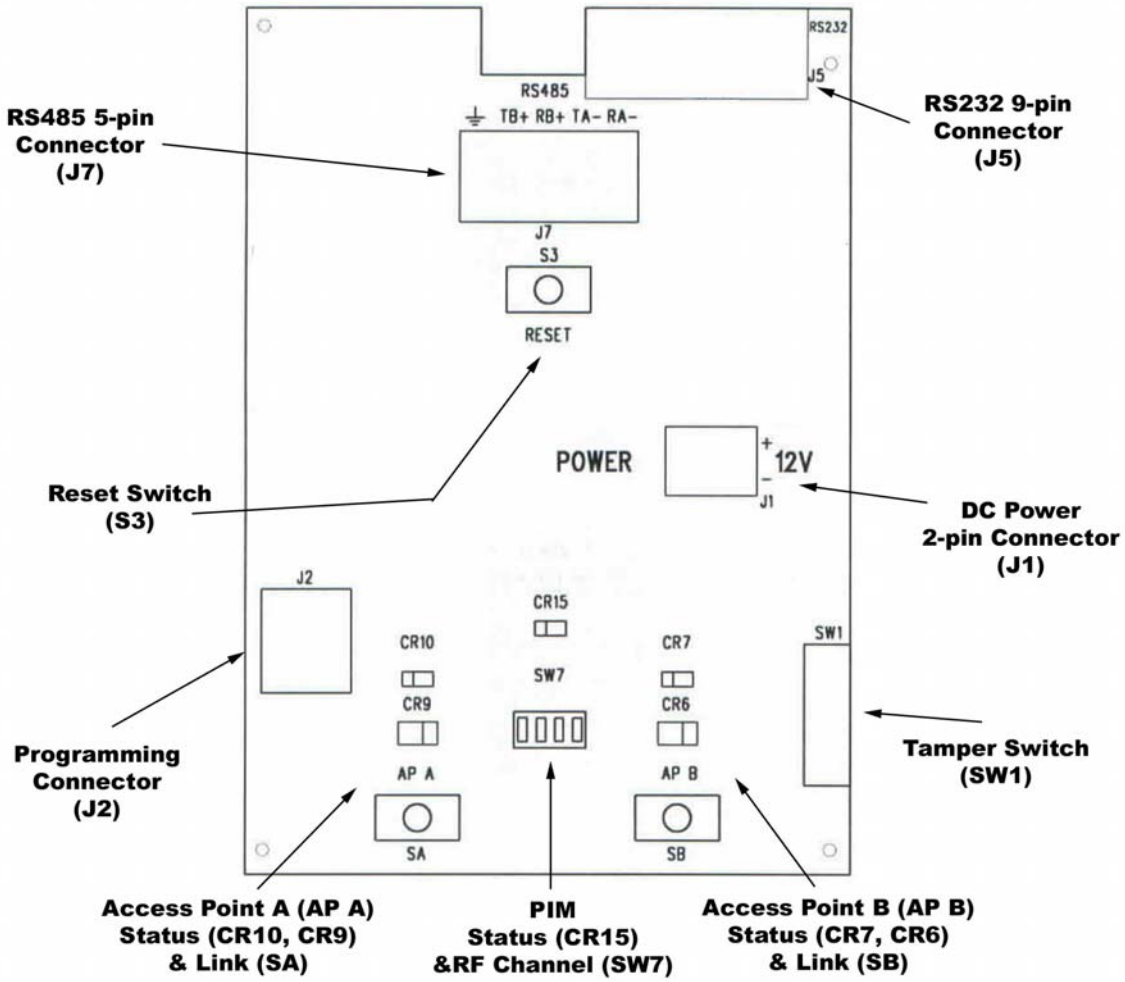

Figure 2-2 – RS485 PIM & PIME Printed Circuit Board (PCB)

2.2 The PIM Indicators

There are five LEDs on the PIM PCB: CR15 (green), CR7 and CR10 (red), CR6 and CR9 (green and red). These LEDs indicate the current status of the PIM (Table 2-3) and the WAPMs linked to it.

	Condition		LED Indication		
			CR 15 (green)	CR7, 10 (red)	CR6, 9 (green – red)
1	Normal operation, PIM is powered & the microprocessor is running	Tamper On (Door Open)	blinking	NA	green
		Tamper Off	on	NA	green
2	PIM is not powered or PIM is defective		off	NA	NA
3	WAPM Trouble: Low Battery		on	1 blink	NA
	WAPM Trouble: No Communication			2 blinks	
	WAPM Trouble: Reader Tamper			3 blinks	
	WAPM Trouble: Lock Motor Stall			4 blinks	
4	Link Access Point A		blinking	NA	CR9 flash green & red
5	Link Access Point B		blinking	NA	CR6 flash green & red
6	Packet-Error-Rate test during linking		blinking	NA	Green flash on every good transmission- Red flash on any bad transmission. Goes on for about 20 seconds.
7	PIM Transmitting a Message		blinking	NA	1 red flash per transmission
8	PIM Receiving a Message		blinking	NA	blinks off momentarily

Table 2-3 – PIM LED Indicators

2.3 How to Set an RF Channel

One of fifteen RF channels can be set using DIP switch SW7 on the PIM (Figure 2-1 or Figure 2-2). Table 2-4 shows how to set SW7 to select the desired RF channel:

Channel	Switch 1	Switch 2	Switch 3	Switch 4
1	up	up	up	up
1	up	up	up	down
2	up	up	down	up
3	up	up	down	down
4	up	down	up	up
5	up	down	up	down
6	up	down	down	up
7	up	down	down	down
8	down	up	up	up
9	down	up	up	down
10	down	up	down	up
11	down	up	down	down
12	down	down	up	up
13	down	down	up	down
14	down	down	down	up
15	down	down	down	down

Table 2-4 – DIP Switch Setting to Select the RF Channel

NOTE: The first two switch settings select Channel 1.

When the PIM is wired to the panel, power is applied, and the RF Channel is set, the PIM is ready to enter Link Mode.

2.4 Putting the PIM into Link Mode

The Link Mode allows 2 WAPMs to be linked to a PIM.

Only one WAPM can be linked at a time.

2.4.1 Once the RF Channel has been set (Section 2.3) on the PIM, press and release switch S1 to link Access Point A (AP A) or switch S2 to link Access Point B (AP B).

2.4.2 The corresponding PIM LED (CR9 for S1; CR6 for S2) flashes red and green. This indicates that the PIM is in Link Mode. To abort Link Mode, press the same switch again.

When the PIM is powered, the RF Channel is set, and the PIM is in Link Mode, the system is ready for the WAPM to initiate linking.

Now, proceed to the appropriate section of this manual to link the desired WAPM to this PIM.

2.5 What Happens if the PIM Loses DC Power

All of the configuration and linking information is stored in non-volatile memory in the PIM. Therefore if PIM DC power is lost or cycled, upon restoring DC power, the PIM will continue operation with the same configuration and linking information. **There is no need to re-configure or re-link.**

2.6 Using the PIM Reset Switch

The Reset Switch, S3 (Figure 2-1 or Figure 2-2), is used if the PIM does not seem to be working properly. Pressing the Reset Switch has the same effect as cycling DC power to the PIM.

2.7 PIM Tamper Switch Operation

The PIM Tamper Switch, SW1 (Figure 2-1 or Figure 2-2), senses if the PIM enclosure door is open or closed.

PIM Enclosure Door	PIM LED CR15	PIM Access Point A Trouble Signal *	PIM Access Point B Trouble Signal *	Extended Unlock for Access Point A & Access Point B
closed (i.e. no tamper)	constant green	inactive	inactive	works if enabled
open (i.e. tamper)	blinking green	active	active	does not work even if enabled

* this assumes that no other trouble is present from either Access Point

Table 2-5 – PIM Tamper Switch Operation

The Trouble signal is asserted (activated) for both PIM Access Points when a PIM enclosure door is opened. Any PIM enclosure door opening, even if for maintenance, is considered a tamper condition.

When the PIM enclosure door is open the Extended Unlock feature (section 10.3) will not work (i.e. temporarily disabled) even if the feature is configured to be enabled under normal operation (i.e. no PIM tamper). This was done to makes system testing, maintenance, and commissioning easier.

2.8 Using the PIM Programming Connector

The PIM Programming Connector, J2 (Figure 2-1 or Figure 2-2) is used to install a new version of the PIM firmware into the PIM. If a new firmware version is required, please refer to the "Wyreless Access™ System Firmware Programming" manual for further details.

3. Panel Interface Module Expander (PIME)

The Panel Interface Module Expander (PIME) is a product in the Recognition Source's Wyreless Panel Interface Module (WPIM) category. The PIME installs in a PIM-OTD enclosure and provides the ability to interface 1 to 16 additional Wyreless Access Point Modules (WAPM) to an Access Control Panel.

Figure 3-1 shows the PIM-OTD enclosure with PIME-OTD installed.

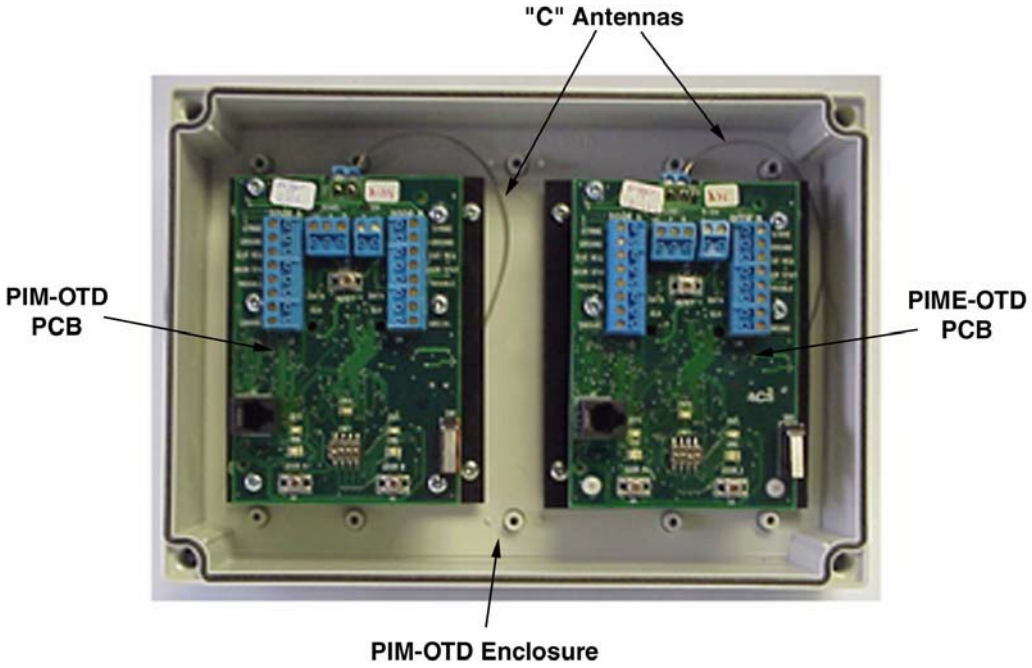

Figure 3-1 – PIME-OTD PCB Location in a PIM-OTD

Since configuration and operation of a PIME-OTD is identical to a PIM-OTD use Section 2 and replace PIM with PIME where ever found.

4. Modular Integrated Reader Lock (MIRL)

The Modular Integrated Reader Lock (MIRL) is a product in the Recognition Source's Wyreless Access Point Module (WAPM) category.

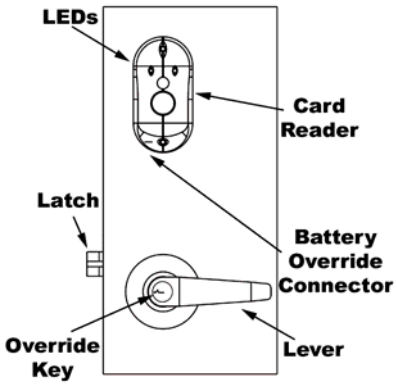

Figure 4-1 – MIRL Locked Side (Outside)

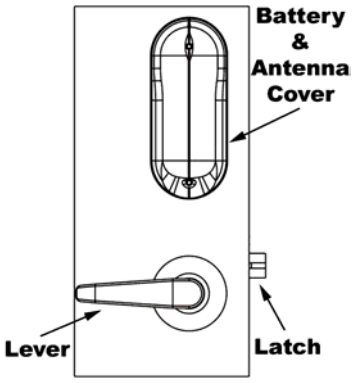

Figure 4-2 – MIRL Unlocked Side (Inside)

4.1 The MIRL Audio/Visual Indicators

Action		LED Indications	MIRL Sounder
1	MIRL is powered and then displays software version number	X red flashes then Y green flashes*	none
2a	MIRL Relocks (motor runs)	1 red flash	1 beep
2b	If linking, MIRL sends a link request (up to 3 times per RF channel) looking for a WPIM in link mode	1 green flash; then 1 red flash once for each link request sent	none
2c	If linking, MIRL & WPIM do an Packet-Error-Rate test for about 20 seconds	flashes for each RF transmission: green flash for a good transmission red flash for a bad transmission	none
2d	If linking, MIRL linked successfully and indicates the RF Channel on which it linked	Z green flashes*	Z beeps*
2e	Or if linking, MIRL not linked successfully	2 red flashes	1 long beep
3	Card swiped and not read	none	none
4	Card swiped and read	none	1 beep
5	No communications with card swipe	1 red flash – immediate	none
6	Access denied	2 red flashes – delayed about 1-15 seconds	1 beep
7	Access granted, MIRL unlocks (motor runs)	1 green flash	none
8	MIRL Relocks (motor runs)	1 red flash	1 beep

* X = major software version number (any number is possible)
Y = minor software version number (any number is possible)
Z = RF channel number that the MIRL linked on (1-15)

Table 4-1 – MIRL Indicators

4.2 Linking the MIRL to a WPIM

NOTE: Only one MIRL can be linked at a time.

4.2.1 If the MIRL does not have a Battery Pack installed, install one now (section 4.4).

4.2.2 Make certain that the WPIM to be linked to is in the Link Mode (Section 2.4).

4.2.3 To initiate the linking process:

4.2.3.1 Open the door.

4.2.3.2 Activate and hold down the inside lever to create a Request to Exit Condition.

4.2.3.3 While holding down the lever (Request to Exit), present a card to the card reader.

4.2.3.4 Continue to hold down the lever (Request to Exit) until the MIRL LED's start to blink indicating that the link process has begun (approximately 8 seconds), then release the lever.

4.2.3.5 Close the door.

4.2.4 During linking, the WPIMs LED (CR6 or CR9, depending on the door (IRL) being linked) and the MIRL LED blink green (some intermittent red may be seen) for about 20 seconds while the MIRL & WPIM determine the integrity of the selected RF channel.

4.2.5 If the MIRL & WPIM determine that the RF channel can be used, then the linking is completed successfully and the WPIMs LED (CR6 or CR9, whichever was flashing) turns solid green. The MIRL LED then blinks green and the sounder beeps. The number of green blinks and beeps indicates the linked RF channel number. If this occurs go to the next step, section 4.2.6.

If the MIRL & WPIM determine that the RF signal quality is not acceptable then the link fails and the MIRL LED blinks red twice and the sounder beeps once (Table 4-1). The WPIM will stay in the Link Mode and the WPIM LED (CR6 or CR9) returns to alternating green and red. If this happens, move either the PIM, or change RF channels and try the link process again (Section 4.2).

4.2.6 The MIRL is now ready to be tested for normal operation.

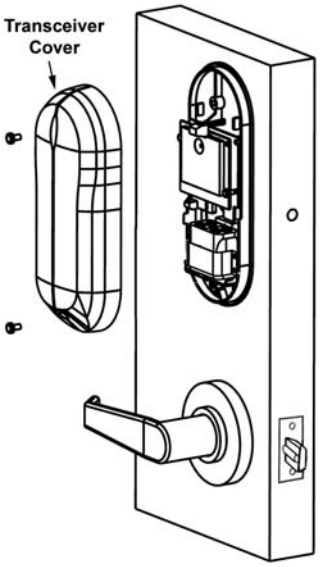

Figure 4-3 – MIRL Transceiver Cover

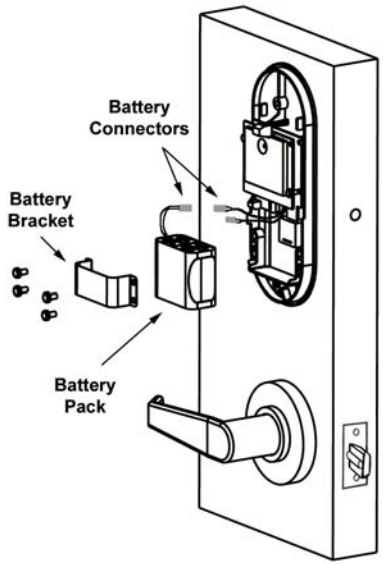

Figure 4-4 – MIRL Battery Pack Removal/Installation

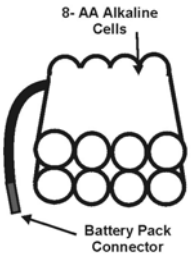

Figure 4-5 – MIRL Battery Pack

4.3 Testing the MIRL

4.3.1 Proximity Card Reader Models

4.3.1.1 Place the card flat to and within one-quarter inch of the upper part of the Proximity Reader (Figure 4-6). The reader sounder beeps.

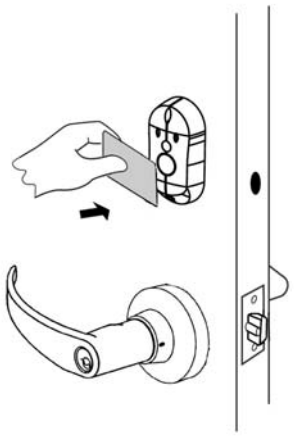

Figure 4-6 - Presenting a Proximity Card

4.3.1.2 The green LED flashes and the lock will unlock.

4.3.1.3 Turn the Lever and open the door.

4.3.1.4 Shortly after the green flash, there is a red flash and sounder beep signifying relock.

4.3.2 Indication of an Unsuccessful Card Swipe

The best indication of an unsuccessful valid card swipe is when the MIRL's internal sounder does not beep, indicating that the card was not read.

If an invalid card is swiped, the MIRL's red LED flashes twice and the internal sounder beeps once.

In both cases the MIRL remains locked.

4.4 Installing/Replacing the MIRL Battery Pack

NOTE: If you want to re-link when changing the MIRL Battery Pack, follow the procedure in section 4.2, page 14.

Approximately one month prior the end of the MIRL Elite Battery Pack life, a Low Battery Trouble signal is indicated at the WPIM (Table 2-3) and a Trouble signal will be sent to the access control panel. To install or replace the MIRL Elite Battery Pack, remove the MIRL Transceiver Cover (Figure 4-3). IF replacing, disconnect the old MIRL Battery Pack. If installed, remove the Battery Bracket. If replacing, remove the old Battery Pack (Figure 4-4). Install the new Battery Pack, install the Battery Bracket, and connect the Battery Pack (Figure 4-5). Install the MIRL Transceiver Cover (Figure 4-3). Depending on how long the Battery Pack was disconnected, the MIRL may or may not go through its power-up sequence. In either case the MIRL will stay linked to its WPIM. **There is no need to re-link.**

NOTE: No other WPIM can be in Link Mode during this process.

4.5 Battery Override

If the MIRL Battery Pack fails, a standard 9.0V battery, 522 or equivalent, may be used together with a Battery Override Supply Cable (9VBOC) to power the MIRL so the door can be opened with a valid card. The Battery Override Cable plugs to the Battery Override Connector found on the lower part Card Reader Base Plate after removing the Card Reader Cover (Figure 4-7).

NOTE: If the Card Reader Base Plate has a Tamper Switch that is activated when the Reader Cover is removed, then the Card Reader is disabled. Tamper Switch must be manually held closed (simulating the cover being installed) for the Card Reader to operate.

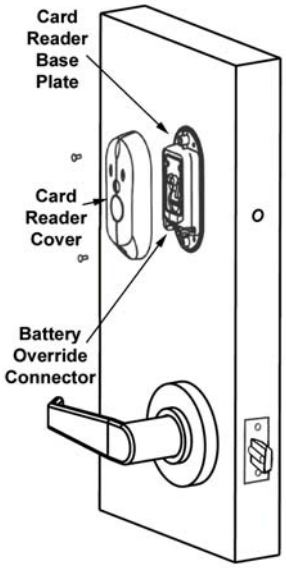

Figure 4-7 – MIRL Battery Override

4.6 Re-linking an MIRL and WPIM

To re-link a MIRL and WPIM, follow the instructions in Section 4.2.

4.7 Changing the RF Channel

At the WPIM, change DIP switch SW7 to the desired new RF channel (Section 2.3), place the PIM in Link Mode (see Section 2.4), then re-link the desired MIRL (Section 4.6).

NOTE: The WPIMs RF channel DIP switch (SW7) is read when the WPIM enters the Link Mode. If the DIP switch is changed while the WPIM is in the Link Mode, then the WPIM must be taken out of Link Mode and put back into Link Mode for the new RF channel to be selected. The WPIM is taken out of Link Mode by pressing the switch associated with the Access Point that is in the Link Mode (S1 or S2).

NOTE: Changing the RF channel will require all WAPMs linked to the PIM to be re-linked.

5. Wireless Reader Interface (WRI)

The Wireless Reader Interface (WRI) is a product in the Recognition Source's Wyreless Access Point Module (WAPM) category.

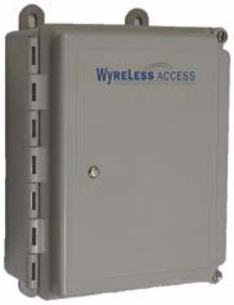

Figure 5-1 – Front of the WRI

Figure 5-2 – Inside the WRI

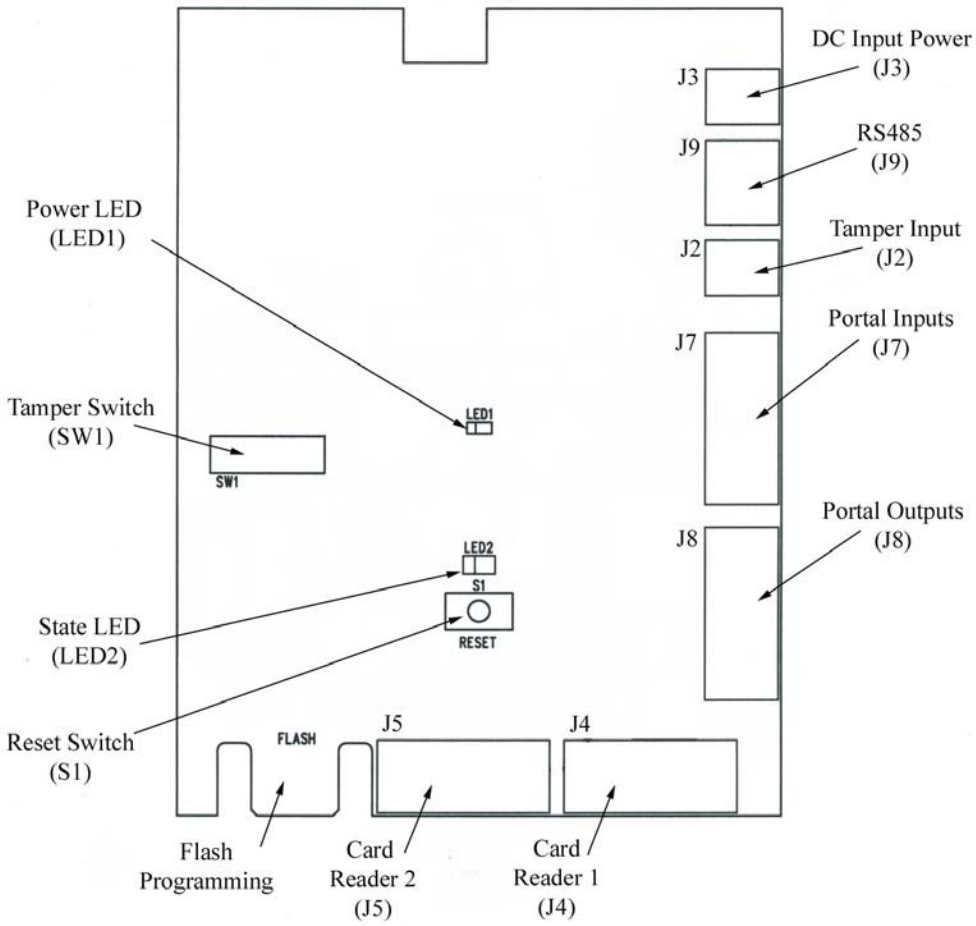

Figure 5-3 – WRI Printed Circuit Board (PCB)

5.1 The WRI Visual Indicators

There are two LEDs on the WRI PCB: a red Power LED (LED1, Figure 5-3) and a green/red State LED (LED2, Figure 5-3). These LEDs indicate the current status of the WRI (Table 5-1).

	Condition		LED Indication	
			LED1 (green)	LED2 (green – red)
1	Normal operation, WRI is powered & the microprocessor is running	Tamper On (WRI door open or external tamper)	blinking	off
		Tamper Off	on	off
2	PIM is not powered or PIM is defective		off	NA
3	WRI is powered and then displays software version number		on	X red flashes then Y green flashes*
4	WRI sends a link request (up to 3 times per RF channel) looking for a WPIM in link mode		on	1 green flash; then 1 red flash once for each link request sent
4a	If linking, WRI & WPIM do an Packet-Error-Rate test for about 20 seconds		on	flashes for each RF transmission: green flash for a good transmission, red flash for a bad transmission
4b	If linking, WRI linked successfully and indicates the RF Channel on which it linked		on	Z green flashes*
4c	Or, if linking, WRI not linked successfully		on	2 red flashes
5	Card swiped and not read		blinking	off
6	Card swiped and read		blinking	off
7	No communications with card swipe		blinking	1 red flash – immediate
8	Access denied		blinking	2 red flashes – delayed about 1-15 seconds
9	Access granted, WRI activates Strike & Auxiliary Relays		blinking	green stays on as long as the Strike Relay is activated

* X = major software version number (any number is possible)
Y = minor software version number (any number is possible)
Z = RF channel number that the WRI linked on (1-15)

Table 5-1 – WRI LED Indicators

5.2 Linking to the WPIM by Powering or Resetting the WRI

NOTE: Only one WRI can be linked at a time.

5.2.1 Make certain that that WPIM to be linked to is in the Link Mode (Section 2.4).

5.2.2 Reset the WRI by either cycling the WRI power (J3, Figure 5-3) or by pressing and releasing the WRI Reset Switch (S1, Figure 5-3). After displaying the firmware version number on LED2, the WRI attempts to link with a WPIM.

5.2.3 During linking, the WPIMs LED (CR6 or CR9, depending on the portal (WRI) being linked) blinks green (some intermittent red may be seen) and the WRI LED2 blinks green (some intermittent red may be seen) for about 20 seconds while the WRI & WPIM determine the integrity of the selected RF channel.

5.2.4 If the WRI & WPIM determine that the RF channel can be used, then the linking is completed successfully and the WPIMs LED (CR6 or CR9, whichever was flashing) turns solid green. LED2 of the WRI then blinks green. The number of green blinks indicates the linked RF channel number.

If the WRI & WPIM determine that the RF signal quality is not acceptable then the link fails and the WPR LED2 blinks red twice (Table 5-1). The WPIM will stay in the Link Mode. If this happens, move either the WRI, PIM, or change RF channels and try the link process again (Section 5.2.1).

5.2.5 Close and secure the WRI enclosure cover.

5.2.6 The WRI is now ready to be tested for normal operation.

5.3 Testing the WRI

If the WRI was installed with all of its peripherals then there are 8 tests that need to be run before commissioning the WRI for operation. If a WRI peripheral was not installed, then that particular test can be skipped.

5.3.1 Tamper Switch

The WRI Tamper Switch (SW1, Figure 5-3) monitors the WRI enclosure door position. If the WRI enclosure door is open a tamper condition is generated. To test the operation of this switch, open the WRI enclosure door, if an External Tamper is wired, make certain the circuit is open or remove the Tamper Input (J2, Figure 5-3) connection, the WRI LED1 should be flashing green. Press SW1 using a finger or non-conductive tool. The WRI LED1 should be a constant green for as long as the switch is pressed.

If it was removed, remember to replace the Tamper Input (J2, Figure 5-3) connection.

NOTE: The External Tamper Input is wired in parallel with the WRI Tamper Switch (SW1), therefore in order to test the WRI Tamper Switch (SW1), the Tamper Input (J3) must be in the non-Tamper (pressed) state (i.e. open circuit).

5.3.2 External Tamper

Do this test if an external tamper switch is wired to the WRI Tamper Input (J2, Figure 5-3). Open the WRI enclosure door. Press and hold SW1 using a finger or non-conductive tool. When the external tamper switch is closed, the WRI LED1 should be flashing green. When the external tamper switch is open, the WRI LED1 should be a constant green.

NOTE: The External Tamper Input is wired in parallel with the WRI Tamper Switch (SW1), therefore in order to test the External Tamper, the WRI Tamper Switch must be in the non-Tamper (pressed) state.

5.3.3 Request to Exit

Do this test if a Request to Exit device is wired to the WRI Portal Inputs (J7-3 & 4, Figure 5-3). Using either the Recognition Source's Configuration and Demonstration Tool (CDT) or the Access Control Panel's software (ACP Software), verify that activating the Request to Exit device causes a request to exit to be sent to the CDT or ACP software. Also verify that the request to exit is removed when the Request to Exit device goes inactive.

5.3.4 Door Position

Do this test if a Door Position device is wired to the WRI Portal Inputs (J7-5 & 6, Figure 5-3). Using either the Recognition Source's Configuration and Demonstration Tool (CDT) or the Access Control Panel's software (ACP Software), verify that the CDT or ACP software can monitor the door's position by opening and closing the door.

5.3.5 Strike Relay

Do this test if an electrical lock or load is connected to the Strike Portal Output (J8-1, 2, and/or 3, Figure 5-3). Using either the Recognition Source's Configuration and Demonstration Tool (CDT) or the Access Control Panel's software (ACP Software), verify that Strike Portal Output can control the electrical lock or load.

5.3.6 Auxiliary Relay

Do this test if an electrical lock or load is connected to the Auxiliary Portal Output (J8-4, 5, and/or 6, Figure 5-3). Using either the Recognition Source's Configuration and Demonstration Tool (CDT) or the Access Control Panel's software (ACP Software), verify that Auxiliary Portal Output can control the electrical lock or load.

5.3.7 Card Reader 1

Do this test if a card reader or keypad is connected to the Card Reader 1 (J4, Figure 5-3) connector. Using either the Recognition Source's Configuration and Demonstration Tool (CDT) or the Access Control Panel's software (ACP Software), verify that the card reader or keypad is sending the correct data.

5.3.8 Card Reader 2

Do this test if a card reader or keypad is connected to the Card Reader 2 (J5, Figure 5-3) connector. Using either the Recognition Source's Configuration and Demonstration Tool (CDT) or the Access Control Panel's software (ACP Software), verify that the card reader or keypad is sending the correct data.

5.4 Re-linking a WRI and WPIM

To re-link a WRI and WPIM, follow the instructions in Section 5.2.

5.5 Changing the RF Channel

At the WPIM, change DIP switch SW7 to the desired new RF channel (Section 2.3), place the WPIM in Link Mode (see Section 2.4), then re-link the desired WRI (Section 5.2).

NOTE: The WPIMs RF channel DIP switch (SW7) is read when the WPIM enters the Link Mode. If the DIP switch is changed while the WPIM is in the Link Mode, then the WPIM must be taken out of Link Mode and put back into Link Mode for the new RF channel to be selected. The WPIM is taken out of Link Mode by pressing the switch associated with the Access Point that is in the Link Mode (S1 or S2).

NOTE: Changing the RF channel will require all WAPMs linked to the WPIM to be re-linked.

6. Wireless Integrated Strike Interface (WISI)

The Wireless Integrated Strike Interface (WISI) is a product in the Recognition Source's Wyreless Access Point Module (WAPM) category.

Figure 6-1 – WISI Components

Figure 6-2 – WISI Battery Pack

Figure 6-3 – Control Transceiver with Cover Removed

6.1 The WISI Audio/Visual Indicators

	Action	Card Reader LED Indication	WISI Sounder
1	WISI is powered and then displays software version number	X red flashes then Y green flashes*	none
2a	WISI Relocks (motor runs)	1 red flash	1 beep
2b	If linking, WISI sends a link request (up to 3 times per RF channel) looking for a WPIM in link mode	1 green flash; then 1 red flash once for each link request sent	none
2c	If linking, WISI & WPIM do an Packet-Error-Rate test for about 20 seconds	flashes for each RF transmission: green flash for a good transmission red flash for a bad transmission	none
2d	If linking, WISI linked successfully and indicates the RF Channel on which it linked	Z green flashes*	Z beeps*
2e	Or if linking, WISI not linked successfully	2 red flashes	1 long beep
3	Card swiped and not read	none	none
4	Card swiped and read	none	1 beep
5	No communications with card swipe	1 red flash – immediate	none
6	Access denied	2 red flashes – delayed about 1-15 second	1 beep
7	Access granted, WISI unlocks (motor runs)	1 green flash	none
8	WISI Relocks (motor runs)	1 red flash	1 beep

* X = major software version number (any number is possible)
Y = minor software version number (any number is possible)
Z = RF channel number that the WISI linked on (1-15)

Table 6-1 – WISI Indicators

6.2 Linking to the WPIM by Powering the WISI

NOTES: Only one WISI can be linked at a time.

The WISI Battery Pack must be installed before linking (Section 6.4).

6.2.1 Make certain that that WPIM to be linked to is in the Link Mode (Section 2.4).

6.2.2 If the WISI cover is installed, use a Phillips screwdriver to remove WISI cover. There are 4 cover screws, one in each corner (Figure 6-3).

6.2.3 Find, press, and release the WISI Reset Switch located below and to the left side of J4 (Figure 6-3).

6.2.4 During linking, the WPIMs LED (CR6 or CR9, depending on the door (WISI) being linked) blinks green (some intermittent red may be seen) and the WISI Card Reader LED blinks green (some intermittent red may be seen) for about 20 seconds while the WISI & WPIM determine the integrity of the selected RF channel.

6.2.5 If the WISI & WPIM determine that the RF channel can be used, then the linking is completed successfully and the WPIMs LED (CR6 or CR9, whichever was flashing) turns solid green. The WISI Card Reader LED then blinks green and the sounder beeps. The number of green blinks and beeps indicates the linked RF channel number.

If the WISI & WPIM determine that the RF signal quality is not acceptable then the link fails and the WISI LED blinks red twice and the sounder beeps once (Table 6-1). The WPIM will stay in the Link

Mode. If this happens, move either the WISI, PIM, or change RF channels and try the link process again (Section 6.2.1).

6.2.6 Re-install the WISI cover, making certain that no wires are pinched. The cover should go on easy with no interferences. Replace the 4 cover screws, one in each corner (Figure 6-1).

6.2.7 The WISI is now ready to be tested for normal operation.

6.3 Testing the WISI

NOTE: The WISI Card Reader will not work as long as the WISI Enclosure Cover is removed (i.e. the WISI Card Reader will not work if there is a WISI Tamper).

6.3.1 Magnetic Stripe or Wiegand Card Reader Models

6.3.1.1 Insert the card and slide it down the slot keeping its back edge against the back of the reader's slot throughout the entire swipe. The reader sounder beeps.

6.3.1.2 The WISI Card Reader LED flashes green and the strike unlocks.

6.3.1.3 Shortly after the green flash, there is a red flash and sounder beep signifying relock.

6.3.2 Proximity Card Reader Models

6.3.2.1 Place the card flat to and within one-quarter inch of the upper part of the Proximity Reader. The reader sounder beeps.

6.3.2.2 The WISI Card Reader LED flashes green and the strike unlocks.

6.3.2.3 Shortly after the green flash, there is a red flash and sounder beep signifying relock.

6.3.3 Indication of an Unsuccessful Card Swipe

The best indication of an unsuccessful valid card swipe is when the WISI's internal sounder does not beep, indicating that the card was not read.

If an invalid card is swiped, the WISI Card Reader LED flashes red twice and the internal sounder beeps once.

In both cases the WISI's strike remains locked.

6.4 Replacing the WISI Battery Pack, BP12V-001

Approximately one month prior the end of the WISI's Battery Pack life, a Low Battery Trouble signal is indicated at the WPIM (Table 6-1), a Trouble signal will be sent to the access control panel.

NOTE: Make certain no WPIMs are in the Link Mode when replacing the WISI Battery Pack or the WISI may inadvertently link to the wrong WPIM.

6.4.1 Use a Phillips screwdriver to remove WISI cover. There are 4 cover screws, one in each corner (Figure 6-3).

6.4.2 Locate the used Battery Pack (Figure 6-4), disconnect the used Battery Pack, and remove the used Battery Pack from its Velcro Strips.

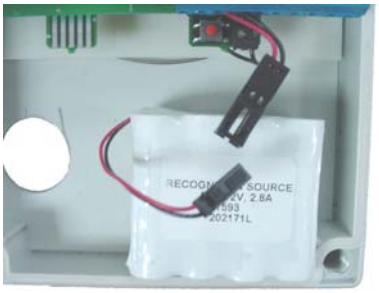

Figure 6-4 – Removing the Used Battery Pack

6.4.3 Install the Battery Pack into the Transceiver Control Module enclosure using the Velcro provided AND connect the Battery Pack Connector to its mating connector that is factory connected to J4 (Figure 6-5).

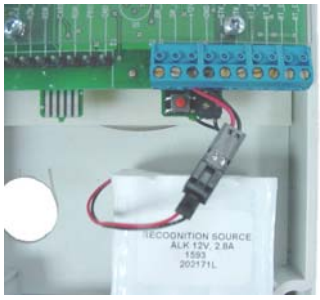

Figure 6-5 – New Battery Pack Installed

6.4.4 To continue to use the WISI on the same RF channel and with the same WPIM, make certain that no WPIMs are in the Link Mode, then press and release the WISI Reset Switch located below and to the left side of J4 (Figure 6-5). This insures that the WISI has started properly. Re-install the WISI cover, making certain that no wires are pinched. The cover should go on easy with no interferences. Replace the 4 cover screws, one in each corner (Figure 6-1).

If the WPR needs to be re-linked or the RF channel needs to be changed, before re-installing the WISI cover, follow the instructions in Section 6.2 or Section 6.7.

NOTE: No other WPIM can be in Link Mode during this process.

6.5 Battery Override

If the WISI Battery Pack fails, a standard 9.0V battery, 522 or equivalent, may be used together with a Battery Override Supply Cable (9VBOC) to power the WISI so the door can be opened with a valid card. The Battery Override Cable plugs to the Battery Override Connector found on the underside of the card reader.

6.6 Re-linking an WISI and WPIM

To re-link a WISI and WPIM follow the instructions in Section 6.2.

6.7 Changing the RF Channel

At the WPIM, change DIP switch SW7 to the desired new RF channel (Section 2.3), place the PIM in Link Mode (see Section 2.4), then re-link the desired WISI (Section 6.6).

NOTE: The WPIMs RF channel DIP switch (SW7) is read when the WPIM enters the Link Mode. If the DIP switch is changed while the WPIM is in the Link Mode, then the WPIM must be taken out of Link Mode and put back into Link Mode for the new RF channel to be selected. The WPIM

is taken out of Link Mode by pressing the switch associated with the Access Point that is in the Link Mode (S1 or S2).

NOTE: Changing the RF channel will require all WAPMs linked to the PIM to be re-linked.

7. Wireless Universal Strike Interface (WUSI)

The Wireless Universal Strike Interface (WUSI) is a product in the Recognition Source's Wyreless Access Point Module (WAPM) category.

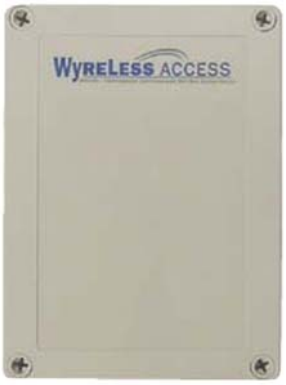

Figure 7-1 – Front of the WUSI

Figure 7-2 – Inside the WUSI

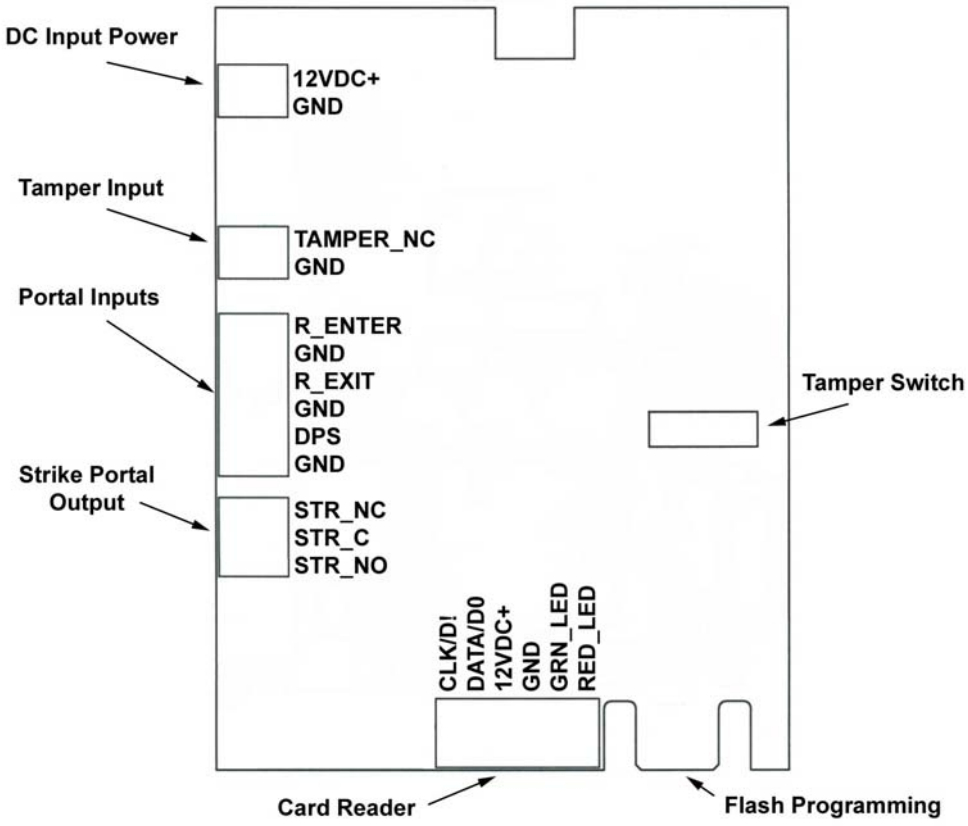

Figure 7-3 – WUSI Printed Circuit Board (PCB)

7.1 The WUSI Visual Indicators

Depending on how the Card Reader is interfaced to the WUSI, the LED on the Card Reader may display some WUSI status conditions (Table 7-1).

	Condition	Card Reader LED
1	WUSI is powered and then displays software version number	Y green flashes*
2	WUSI sends a link request (up to 3 times per RF channel) looking for a WPIM in link mode	1 green flash each link request sent
3a	If linking, WUSI & WPIM do an Packet-Error-Rate test for about 20 seconds	flashes for each RF transmission: green flash for a good transmission, red flash for a bad transmission
3b	If linking, WUSI linked successfully and indicates the RF Channel on which it linked	Z green flashes*
3c	Or, if linking, WUSI not linked successfully	2 red flashes
4	Card swiped and not read	solid red
5	Card swiped and read	red to green to red
6	No communications with card swipe	red to green to red
7	Access denied	red to green to red
8	Access granted, WUSI activates Strike & Auxiliary Relays	green stays on as long as the Strike Relay is activated

* Y = minor software version number (any number is possible)
Z = RF channel number that the WUSI linked on (1-15)

Table 7-1 – WUSI LED Indicators

7.2 Linking to the WPIM by Powering the WUSI

NOTE: Only one WUSI can be linked at a time.

7.2.1 Make certain that that WPIM to be linked to is in the Link Mode (Section 2.4).

7.2.2 Reset the WUSI by cycling the WUSI power (Figure 7-3). The WUSI attempts to link with a WPIM.

7.2.3 During linking, the WPIMs LED (CR6 or CR9, depending on the portal (WUSI) being linked) blinks green (some intermittent red may be seen) and the WUSI Card Reader LED may blink green (some intermittent red may be seen) for about 20 seconds while the WUSI & WPIM determine the integrity of the selected RF channel.

7.2.4 If the WUSI & WPIM determine that the RF channel can be used, then the linking is completed successfully and the WPIMs LED (CR6 or CR9, whichever was flashing) turns solid green. The WUSI Card Reader LED may then blink green. The number of green blinks indicates the linked RF channel number.

If the WUSI & WPIM determine that the RF signal quality is not acceptable then the link fails and the WUSI Card Reader LED may blink red twice (Table 7-1). The WPIM will stay in the Link Mode. If

this happens, move either the WUSI, PIM, or change RF channels and try the link process again (Section 7.2.1).

7.2.5 Close and secure the WUSI enclosure cover.

7.2.6 The WUSI is now ready to be tested for normal operation.

7.3 Testing the WUSI

If the WUSI was installed with all of its peripherals then there are 6 tests that need to be run before commissioning the WUSI for operation. If a WUSI peripheral was not installed, then that particular test can be skipped.

7.3.1 Tamper Switch

The WUSI Tamper Switch (Figure 7-3) monitors the WUSI enclosure cover position. If the WUSI enclosure cover is open a tamper condition is generated. To test the operation of this switch, make certain that the WUSI is linked to a PIM, open the WUSI enclosure cover, if an External Tamper is wired, make certain the circuit is open or remove the Tamper Input (J2, Figure 7-3) connection, the PIM's Trouble LED (CR7 or CR10) should be flashing 3 red blinks. Install the WUSI cover. The PIM's Trouble LED (CR7 or CR10) should not be flashing 3 red blinks for as long as the WUSI's cover in installed. Note: The Trouble LED may be flashing other trouble codes, just make certain it is not flashing the Tamper error code: 3 red blinks.

If it was removed, remember to replace the Tamper Input (Figure 7-3) connection.

NOTE: The External Tamper Input is wired in parallel with the WUSI Tamper Switch (SW1), therefore in order to test the WUSI Tamper Switch, the Tamper Input must be in the non-Tamper (pressed) state (i.e. open circuit).

7.3.2 External Tamper

Do this test if an external tamper switch is wired to the WUSI Tamper Input (Figure 7-3). Make certain that the WUSI is linked to a PIM. Install the WUSI enclosure cover. When the external tamper switch is closed, the PIM's Trouble LED (CR7 or CR10) should be flashing 3 red blinks. When the external tamper switch is open, the PIM's Trouble LED (CR7 or CR10) should not be flashing 3 red blinks for as long as the switch is pressed. Note: The Trouble LED may be flashing other trouble codes, just make certain it is not flashing the Tamper error code: 3 red blinks.

NOTE: The External Tamper Input is wired in parallel with the WUSI Tamper Switch, therefore in order to test the External Tamper, the WUSI Tamper Switch must be in the non-Tamper (pressed) state.

7.3.3 Request to Exit

Do this test if a Request to Exit device is wired to the WUSI Portal Inputs (Figure 7-3). Using either the Recognition Source's Configuration and Demonstration Tool (CDT) or the Access Control Panel's software (ACP Software), verify that the activating the Request to Exit device causes a request to exit to be sent to the CDT or ACP software. Also verify that the request to exit is removed when the Request to Exit device goes inactive.

7.3.4 Door Position

Do this test if a Door Position device is wired to the WUSI Portal Inputs (Figure 7-3). Using either the Recognition Source's Configuration and Demonstration Tool (CDT) or the Access Control Panel's software (ACP Software), verify that the CDT or ACP software can monitor the door's position by opening and closing the door.

7.3.5 Strike Relay

Do this test if an electrical lock or load is connected to the Strike Portal Output (Figure 7-3). Using either the Recognition Source's Configuration and Demonstration Tool (CDT) or the Access Control

Panel's software (ACP Software), verify that Strike Portal Output can control the electrical lock or load.

7.3.6 Card Reader

Do this test if a card reader or keypad is connected to the Card Reader (Figure 7-3) connector. Using either the Recognition Source's Configuration and Demonstration Tool (CDT) or the Access Control Panel's software (ACP Software), verify that the card reader or keypad is sending the correct data.

7.4 Re-linking a WUSI and WPIM

To re-link a WUSI and WPIM, follow the instructions in Section 7.2.

7.5 Changing the RF Channel

At the WPIM, change DIP switch SW7 to the desired new RF channel (Section 2.3), place the WPIM in Link Mode (see Section 2.4), then re-link the desired WUSI (Section 7.2).

NOTE: The WPIMs RF channel DIP switch (SW7) is read when the WPIM enters the Link Mode. If the DIP switch is changed while the WPIM is in the Link Mode, then the WPIM must be taken out of Link Mode and put back into Link Mode for the new RF channel to be selected. The WPIM is taken out of Link Mode by pressing the switch associated with the Access Point that is in the Link Mode (S1 or S2).

NOTE: Changing the RF channel will require all WAPMs linked to the WPIM to be re-linked.

8. Wireless Portable Reader (WPR)

The Wireless Portable Reader (WPR) is a product in the Recognition Source's Wyreless Access Point Module (WAPM) category.

Figure 8-1 – Wireless Portable Reader (WPR) with Proximity Reader

8.1 The WPR Audio/Visual Indicators

Action		LED Indication	WPR Sounder
1	WPR is powered and then displays software version number	X red flashes then Y green flashes*	none
2a	If linking, WPR sends a link request (up to 3 times per RF channel) looking for a WPIM in link mode	1 green flash; then 1 red flash once for each link request sent	none
2b	If linking, WPR & WPIM do an Packet-Error-Rate test for about 20 seconds	flashes for each RF transmission: green flash for a good transmission red flash for a bad transmission	none
2c	If linking, WPR linked successfully and indicates the RF Channel on which it linked	Z green flashes*	Z beeps*
2d	Or if linking, WPR not linked successfully	2 red flashes	1 long beep
3	Card swiped and not read	none	none
4	Card swiped and read	none	1 beep
5	No communications	1 red flash – immediate	none
6	Invalid card swiped	1 long red flash – delayed about 1-15 seconds	1 beep
7	Valid card swiped	W seconds long green flash*	none
8	Low WPR Battery	1 long red flash	3 beeps

* X = major software version number (any number is possible)
Y = minor software version number (any number is possible)
Z = RF channel number that the WPR linked on (1-15)
W = green LED stays on for the door unlock time

Table 8-1 – WPR Indicators

8.2 Turning the WPR On

The WPR is turned On & Off using the On/Off switch located on the WPR cover (Figure 8-1). When the WPR is turned on, Action 1, Table 8-1 occurs. Actions 2a, 2b, 2c, and/or 2d will only occur if the WPR is being linked (Section 8.3).

8.3 Linking or Re-Linking to the WPIM by Powering the WPR

NOTE: Only one WAPM can be linked at a time.

8.3.1 Make certain that that WPIM to be linked to is in the Link Mode (Section 2.4).

8.3.2 Make certain that the WPR is turned off using the On/Off switch (Figure 8-1).

8.3.3 With the WPR turned off, swipe or present a card at the WPR card reader (Figure 8-1) (Section 10.4).

8.3.4 Use the Phillips screwdriver to remove WPR cover. There are 4 cover screws, one in each corner (Figure 8-1).

8.3.5 Locate the Door Position Switch Connector on the WPR PCB (Figure 8-2, DPS1). Temporarily short the two terminals of the Door Position Switch Connector. While keeping these two terminals shorted, turn on the WPR using the On/Off switch (Figure 8-1). Keep the two terminals shorted until the WPR enters the Linking Mode (Table 8-1, actions 2a or 2b). Once the WPR is in the Linking Mode, remove the short.

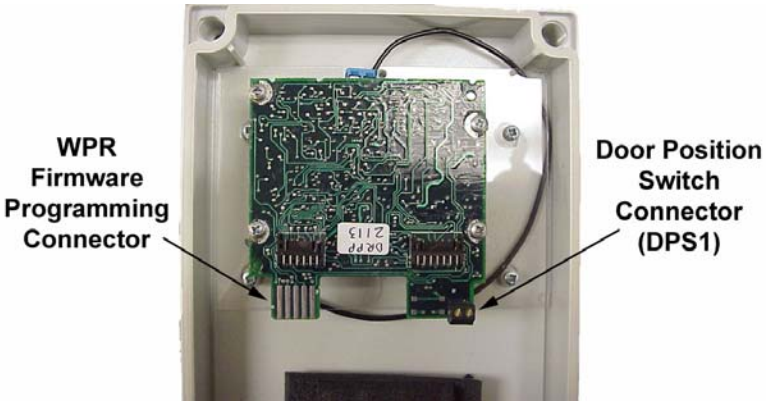

Figure 8-2 – WPR PCB Connectors

8.3.6 During linking, the WPIMs LED (CR6 or CR9, depending on the WPR being linked) blinks green (some intermittent red may be seen) and the WPR LED (Figure 8-1) blinks green (some intermittent red may be seen) for about 20 seconds while the WPR & WPIM determine the integrity of the selected RF channel.

8.3.7 If the WPR & WPIM determine that the RF channel can be used, then the linking is completed successfully and the WPIMs LED (CR6 or CR9, whichever was flashing) turns solid green. The WPR LED blinks green and the sounder beeps, the number of which indicate the RF channel linked.

If the WPR & WPIM determine that the RF signal quality is not acceptable then the link fails and the WPR LED blinks red twice and the sounder beeps once (Table 8-1). The WPIM will stay in the Link Mode. If this happens, move either the WPR, PIM, or change RF channels and try the link process again (Section 8.3.1).

8.3.8 Re-install the WPR cover, making certain that no wires are pinched. The cover should go on easy with no interferences. Replace the 4 cover screws, one in each corner (Figure 8-1).

8.3.9 The WPR is now ready to be tested for normal operation.

8.4 Testing the WPR

8.4.1 Magnetic Stripe or Wiegand Card Reader Models

8.4.1.1 Insert a valid card and slide it down the slot keeping its back edge against the back of the reader's slot throughout the entire swipe. The reader sounder beeps.

8.4.1.2 The green LED will flash.

8.4.2 Proximity Card Reader Models

8.4.2.1 Place a valid card flat to and within one-quarter inch of the upper part of the Proximity Reader. The reader sounder beeps.

8.4.2.2 The green LED will flash.

8.4.3 Indication of an Unsuccessful Card Swipe

The best indication of an unsuccessful valid card swipe is when the WPR's internal sounder does not beep, indicating that the card was not read correctly.

If an invalid card is swiped, the WPR's red LED displays a long flash and the internal sounder beeps once.

8.5 Replacing the WPR Battery Pack, BP12V-001

Approximately one month prior the end of the WPR's Battery Pack life, a Low Battery Trouble signal is indicated at the WPIM (Table 2-3), a Trouble signal will be sent to the access control panel, and the WPR will provide a visual and audible indication (Table 8-1, action 7) consisting of a long red LED flash and three sounder beeps.

The WPR's low battery indication (Table 8-1, action 7) will occur whenever the WPR's battery is low and:

- the WPR is turned on (after action 1, Table 8-1),
- the WPR transmits a Heartbeat, or
- any card is swiped at the WPR's reader.

It is then time to replace the WPR's Battery Pack:

8.5.1 Use the Phillips screwdriver to remove WPR cover. There are 4 cover screws, one in each corner (Figure 8-1).

8.5.2 Locate the used Battery Pack (Figure 8-6), disconnect the used Battery Pack (Figure 8-4), remove the used Battery Pack from its Velcro Strips (Figure 8-3)

8.5.3 Attach a new Battery Pack to the housing using the Velcro strips (Figure 8-3& Figure 8-4).

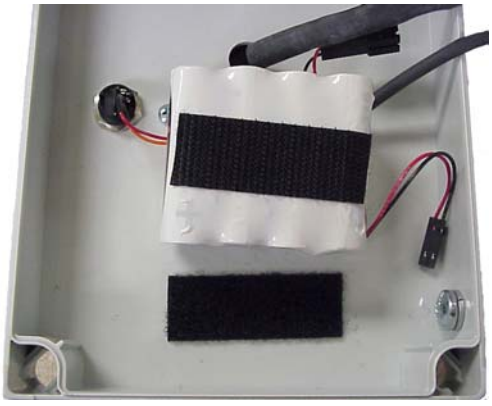

Figure 8-3 – WPR Battery Pack Velcro Strips

Figure 8-4 – WPR Battery Pack Positioned

8.5.4 Connect the battery connector to the mating connector coming from the transceiver board (Figure 8-5 & Figure 8-6).

Figure 8-5 – WPR Battery Connector

Figure 8-6 – WPR Battery Pack Connected

8.5.5 To continue to use the WPR on the same RF channel and with the same WPIM, re-install the cover, making certain that no wires are pinched. The cover should go on easy with no interferences. Replace the 4 cover screws, one in each corner (Figure 8-1).

If the WPR needs to be re-linked or the RF channel needs to be changed, before re-installing the WPR cover, follow the instructions in Section 8.2 or Section 8.6.

8.6 Changing the RF Channel

At the WPIM, change DIP switch SW7 to the desired new RF channel (Section 2.3), place the WPIM in Link Mode (see Section 2.4), then re-link the desired WPR (Section 8.2).

NOTE: The WPIMs RF channel DIP switch (SW7) is read when the WPIM enters the Link Mode. If the DIP switch is changed while the WPIM is in the Link Mode, then the WPIM must be taken out of Link Mode and put back into Link Mode for the new RF channel to be selected. The WPIM is taken out of Link Mode by pressing the switch associated with the Access Point in the Link Mode (S1 or S2).

NOTE: Changing the RF channel will require all WAPMs linked to the PIM to be re-linked.

9. Wireless Contact Monitor (WCM)

The Wireless Contact Monitor (WCM) is a product in the Recognition Source's Wyreless Access Point Module (WAPM) category.

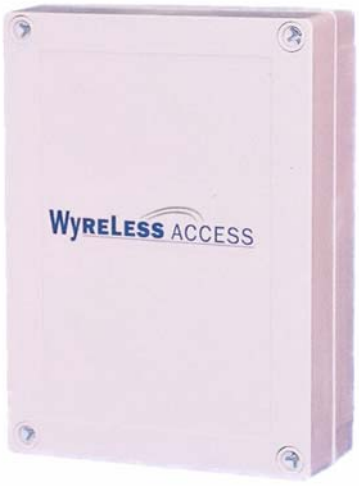

Figure 9-1 – Wireless Contact Monitor

Figure 9-2 – WCM Battery Pack

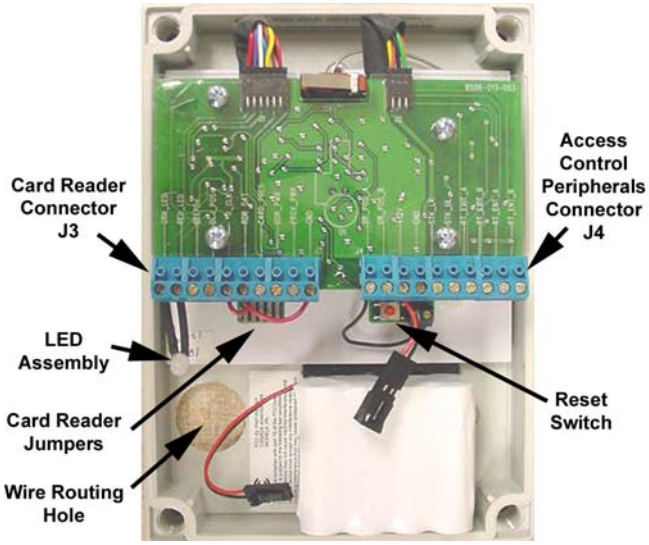

Figure 9-3 – Transceiver Control Module with Cover Removed

9.1 The WCM Visual Indicators

NOTE: LED assembly XXX-XXX-XXX must be installed on the GRN_LED & RED_LED connections of J3 in order for any visual indicators to be seen.

	Action	LED Assembly on J3
1	WCM is powered and then displays software version number	X red flashes then Y green flashes*
2a	WCM is ready to start linking	1 red flash
2b	If linking, WCM sends a link request (up to 3 times per RF channel) looking for a WPIM in link mode	1 green flash; then 1 red flash once for each link request sent
2c	If linking, WCM & WPIM do an Packet-Error-Rate test for about 20 seconds	flashes for each RF transmission: green flash for a good transmission red flash for a bad transmission
2d	If linking, WCM linked successfully and indicates the RF Channel on which it linked	Z green flashes*
2e	Or if linking, WCM not linked successfully	2 red flashes

*
X = major software version number (any number is possible)
Y = minor software version number (any number is possible)
Z = RF channel number that the WCM linked on (1-15)

Table 9-1 – WCM Visual Indicators

9.2 Linking to the WPIM by Resetting the WCM

NOTES:

- **Only one WCM can be linked at a time.**
- **The WCM Battery Pack must be installed before linking (Section 9.3).**
- ***Leaving the WCM cover off for extended periods of time with the Battery Pack connected will shorten the expected battery life.***

9.2.1 Make certain that that WPIM to be linked to is in the Link Mode (Section 2.4).

9.2.2 If the WCM cover is installed, use a Phillips screwdriver to remove WCM cover. There are 4 cover screws, one in each corner (Figure 9-3).

9.2.3 Find, press, and release the WCM Reset Switch located below and to the left side of J4 (Figure 9-3).

9.2.4 During linking, the WPIMs LED (CR6 or CR9, depending on the WAPM being linked) blinks green (some intermittent red may be seen) and the LED Assembly blinks green (some intermittent red may be seen) for about 20 seconds while the WCM & WPIM determine the integrity of the selected RF channel.

9.2.5 If the WCM & WPIM determine that the RF channel can be used, then the linking is completed successfully and the WPIMs LED (CR6 or CR9, whichever was flashing) turns solid green. The LED Assembly then blinks green. The number of green blinks indicates the linked RF channel number.

If the WCM & WPIM determine that the RF signal quality is not acceptable then the link fails and the LED blinks red twice (Table 9-1). The WPIM will stay in the Link Mode. If this happens, move either the WCM, PIM, or change RF channels and try the link process again (Section 9.2).

9.2.6 Re-install the WCM cover, making certain that no wires are pinched. The cover should go on easy with no interferences. Replace the 4 cover screws, one in each corner (Figure 9-1).

9.2.7 The WCM is now ready for normal operation.

9.3 Replacing the WCM Battery Pack, BP12V-001

Approximately one month prior the end of the WCM's Battery Pack life, a Low Battery Trouble signal is indicated at the WPIM (Table 2-3), a Trouble signal will be sent to the access control panel.

NOTE: Make certain no WPIMs are in the Link Mode when replacing the WCM Battery Pack or the WCM may inadvertently link to the wrong WPIM.

NOTE: Leaving the WCM cover off for extended periods of time with the Battery Pack connected will shorten the expected battery life.

9.3.1 Use a Phillips screwdriver to remove WCM cover. There are 4 cover screws, one in each corner (Figure 9-1).

9.3.2 Locate the used Battery Pack (Figure 9-4), disconnect the used Battery Pack, and remove the used Battery Pack from its Velcro Strips.

Figure 9-4 – Removing the Used Battery Pack

9.3.3 Install the Battery Pack into the Transceiver Control Module enclosure using the Velcro provided AND connect the Battery Pack Connector to its mating connector that is factory connected to J4 (Figure 9-5).

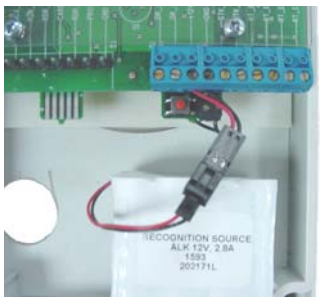

Figure 9-5 – New Battery Pack Installed

9.3.4 To continue to use the WCM on the same RF channel and with the same WPIM, make certain that no WPIMs are in the Link Mode, then press and release the WCM Reset Switch located below and to the left side of J4 (Figure 9-5). This insures that the WCM has started properly. Re-install the WCM cover, making certain that no wires are pinched. The cover should go on easy with no interferences. Replace the 4 cover screws, one in each corner (Figure 9-1).

If the WPR needs to be re-linked or the RF channel needs to be changed, before re-installing the WCM cover, follow the instructions in Section 9.1 or Section 9.4.

NOTE: No other WPIM can be in Link Mode during this process.

9.4 Re-linking an WCM and WPIM

To re-link a WCM and WPIM follow the instructions in Section 9.1.

9.5 Changing the RF Channel

At the WPIM, change DIP switch SW7 to the desired new RF channel (Section 2.3), place the PIM in Link Mode (see Section 2.4), then re-link the desired WCM (Section 9.4).

NOTE: The WPIMs RF channel DIP switch (SW7) is read when the WPIM enters the Link Mode. If the DIP switch is changed while the WPIM is in the Link Mode, then the WPIM must be taken out of Link Mode and put back into Link Mode for the new RF channel to be selected. The WPIM is taken out of Link Mode by pressing the switch associated with the Access Point that is in the Link Mode (S1 or S2).

NOTE: Changing the RF channel will require all WAPMs linked to the PIM to be re-linked.

10. Other Important Information

10.1 Knowing When to Change the RF Channel

The RF Channel should be changed if the system encounters interfering transmissions (most noticeably when the system attempts to Link and cannot or when a card swipe results in a "no communication" indication at the Access Point).

Try re-linking on a different RF channel. If the WAPM and WPIM do not re-link on the new channel, try another channel. For more detailed information, see Wyreless Access ™ Troubleshooting Guide, available from Recognition Source.

If the WAPM and WPIM do not re-link, the WAPM reverts to the RF channel it was set at prior to disconnecting the WAPM power. However, the WAPM will not communicate with the WPIM on the original RF channel until the WPIMs DIP switch SW7 is reset to the original RF channel and the WPIM is taken into and out of Link Mode.

10.2 Configuring the Wyreless Access™ System

There are several configurable features in each WAPM & WPIM. These are programmed through the WPIM using a PC and the Recognition Source Configuration & Demonstration Tool.

The configurable features are:

- Heartbeat time (default: 10 minutes)
- Relock time (default: 3 seconds)
- Re-latch on: timer, door opening, or door closing (default: timer)
- Card conversion (default: none)
- Polarity of the Request-to-Exit (RTE) signal (default: low = RTE)
- Polarity of Trouble signal (default: low = trouble)
- Polarity of Door Position Switch (DPS) signal (default: low = closed)
- Extended Unlock: enabled or disabled (default: enabled)

10.3 Extended Unlock

Extended unlock is a feature that permits a Wyreless Access™ Point Module (WAPM) to stay in an indefinite unlock state. Normally a card is swiped at a WAPM and if it is a valid card, the Access Point will unlock for a short period of time (seconds) and then automatically relock. This is considered a momentary unlock.

A WPIM and WAPM can be configured (section 10.2) to respond to extended unlocks from an access control panel. The WPIM monitors the state of the access control panel's strike relay. When the strike relay is energized without the WPIM presenting card data (i.e. no card swipe has occurred) to the access control panel, then the next time the WAPM communicates with the WPIM (card swipe, door state change, request to exit, or heartbeat), the WPIM will tell the WAPM to unlock its portal (door, gate, etc.) indefinitely.

When the WPIM detects that the strike relay is de-energized, then the next time the WAPM communicates with the WPIM (card swipe, door state change, request to exit, or heartbeat), the WPIM will tell the WAPM to lock its portal (door, gate, etc.) indefinitely.

The extended unlock feature is most likely to be used to implement a timed unlock. For instance, wanting a business' main entry doors unlocked during normal business hours (i.e. 8-5).

Note: The exact time that the Access Point will be unlocked or locked depends on the frequency of RF activity between the WAPM and the WPIM. Generally the WAPM is in a low power mode (i.e. sleeping) and therefore the WPIM can only communicate with the WAPM when the WAPM initiates the communication. The Heartbeat time will determine the maximum time that it will take for a WAPM to respond to the start or end of an extended unlock. For instance, let's say that the Heartbeat time is set to 10 minutes and that we want the Access Point to be unlocked from 8-5. We would program the access control panel to unlock the Access Point at 7:50 and lock it at 5:00. The WAPM would unlock sometime between 7:50 & 8:00 and would lock sometime between 5:00 & 5:10.

10.4 Why Swipe a Card When the Power Is Disconnected?

When linking or re-linking, the instructions say to swipe a card after the power has been removed from the WAPM that will be linked or linked, why?

Most of the time a WAPM is in a very lower power mode to conserve energy and extend battery life. Therefore when power is removed, if a WAPM is in its low power mode, it will stay powered for several minutes due to capacitance in the DC regulator on the PCB. Swiping a card will cause the WAPM to go to a high power mode which will collapse any residual power. This will insure that the WAPM will start from reset when power is reapplied.

If a card is not swiped and power is reapplied, no damage is done, but if power has only been removed for a short time, the WAPM (specifically the WPR) will not reset. The WAPM will just continue to operate as if power had never been removed. If the WAPM does not reset when power is reapplied, then the WAPM link mode will not be entered, which may have been the primary reason for cycling power.

11. Contacting Recognition Source

For questions regarding Wyreless Access™:

(630) 762-4450
(630) 762-4444 fax

12. FCC Compliance & Warnings

12.1 FCC Compliance

- This device has been authorized by the FCC Rules and Industry Canada.
- This device complies with the limits for a Class B digital device and a Class B intentional radiator, pursuant to Part 15 of the FCC Rules and with RSS-210 of Industry Canada. Operation is subject to the following two conditions: (1) This device may cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- The Wyreless Access System Component must be installed by qualified professionals or contractors in accordance with FCC part 15.203, Antenna Requirements.
- Do not use any antenna other than the one provided with the unit.

12.2 Warnings

- RF Exposure - To comply with FCC RF exposure requirements for mobile transmitting devices this transmitter should only be used or installed at locations where there is normally at least a 20 cm separation between the antenna and all persons.
- Do not co-locate and operate in conjunction with any other antenna or transmitter.
- Use only the Battery Pack specified in this instruction manual.
- Do not subject Battery Pack to fire or high temperatures.
- Do not attempt to recharge, short out or disassemble Battery Pack.
- Follow local regulations for alkaline battery disposal.
- Immediately remove the batteries and discontinue use if:

  - the product is impacted after which the interior is exposed, or

  - the product emits a strange smell, heat, or smoke.
- Changes or modifications not expressly approved by Recognition Source could void the users authority to operate the equipment.

13. Revision History

Version	Date	Changes
x001	09/09/03	preliminary in house release for comments
x001.1	12/08/03	deleted PIM & PIM-OTD sales models, deleted IRL section, added WRI, WISI, WUSI, WPR, & WCM sections