RC-PRO
Wireless Receiver for HUNTER-PRO
Installation Manual

FOR BETTER PROTECTION

PIMA Electronic Systems Ltd.
5 Hatzoref Street, Holon 58856, Israel
☎ +972-3-5587722 🖷 +972-3-5500442
support@pima-alarms.com http://www.pima-alarms.com

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All efforts have been made to ensure that the content of this manual is accurate. Pima retains the right to modify this manual or any part thereof, from time to time, without serving any prior notice of such modification.

Please read this manual in its entirety before attempting to program or operate your system. Should you misunderstand any part of this manual, please contact the supplier or installer of this system.

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PIMA Electronic Systems Ltd.
5 Hatzoref Street, Holon 58856, Israel
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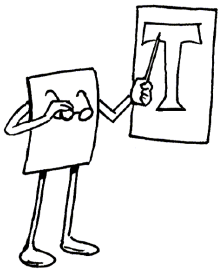

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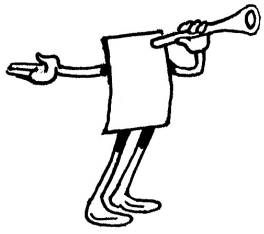


Congratulations on your purchase of the RC-PRO, Wireless Add-On Receiver for the HUNTER-PRO intruder alarm system. Much care has been taken in developing the RC-PRO, which will provide you with unprecedented peace of mind. The RC-PRO's user-friendly operation and programming will professionally help you with HUNTER-PRO Intruder Alarm System installation. The RC-PRO expands the HUNTER-PRO capability up to 16 wireless zones.

It is important to familiarize yourself with the RC-PRO in order to take full advantage of the complete range of its features. To assure optimum safety and security, you should test the overall Intruder Alarm System operation once a week.

Features

- Simple Installation (Install & Forget)
- Code Hopping Remote Control Technology (remote devices can not be copied by scanning or code grabbing)
- Remote Functions include Arm/Disarm & Panic
- Ability to quickly add/delete wireless devices to/from your system
- Up to 16 wireless zones
- Wireless Detector Supervision Output
- Low Battery Warning Output (Intelligent 1 trigger only until batteries replaced)
- Detector Tamper Warning Output
- Intelligent Detector Learning Program to prevent accidental code duplication
- Wireless detector's status is displayed on the system's LCD keypad
- Receiver Signal Strength Indication (RSSI) is displayed on the LCD keypad
- Radio signal blocking/jamming indication
- Advanced FLASH microprocessor enables future firmware updates

- Available Wireless Detectors include: PIR, Internal or External Reed Switch, Impact Sensor, Smoke Sensor, and Wireless Emergency Pendants

RC-PRO Panel Description

The RC-PRO (seen in Figure 1) is a state- of- the-art Narrow-Band wireless receiver, designed to operate with the HUNTER-PRO control panel via its serial interface.

This wireless receiver supports up to 16 zones with wireless detectors (i.e., PIR, Reed Switch, etc.) and up to 18 remote control units (used to arm/disarm the system, activate accessories and send a panic signal).

The RC-PRO turns the HUNTER-PRO into an hybrid system that can be connected to wired and wireless detectors.

The HUNTER-PRO can be configured as follows:

- Eight to sixteen wired zones (with or without an expansion card)
- Eight wired plus eight wireless zones (using only zones 1 to 8 in the RC-PRO)
- Sixteen wireless zones

The receiver has the unique ability to "learn" the wireless devices' codes. Installing and programming wireless devices is easily done. The detectors transmit Alarm, Supervision, Low Battery and Tamper signals.

The RC-PRO has the following inputs, outputs, indications and buttons:

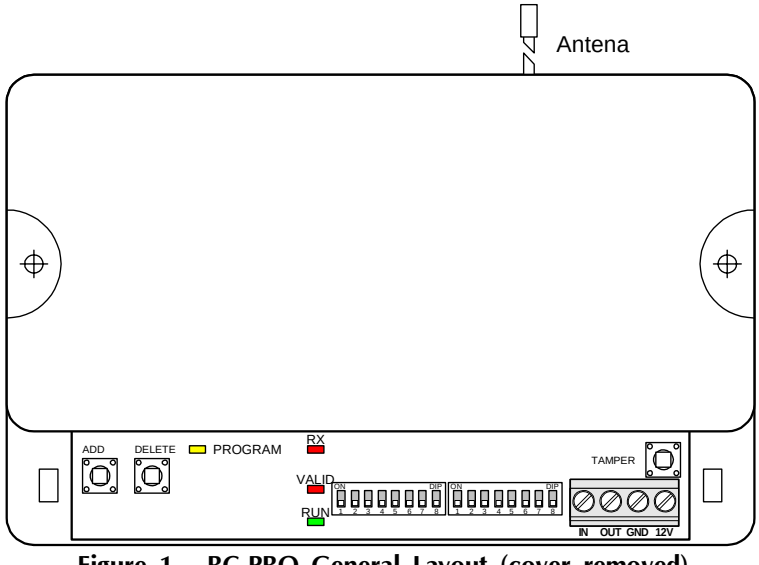


Figure 1 - RC-PRO General Layout (cover removed)

Input and Outputs

- IN — Communication channel from HUNTER-PRO
- OUT — Communication channel to HUNTER-PRO
- GND — Operating ground input
- 12V — Operating power input

LEDs

There are four indication LEDs used in normal operation and during wireless devices programming. The LEDs indicate the following:

- PROGRAM (YELLOW) — Turns ON when any of the switches (in the two eight dipswitch banks) is in the 'ON' position;
  Flashes when more than one switch is in the 'ON' position
- RX – Receive (RED) — Turns ON when data packets are received (data can be either valid or not valid, in line with programming)
- VALID (RED) — Turns ON while valid data is decoded e.g., a PIR is transmitting a data packet (i.e., the packet is from a device that was programme the receiver)
  Flashes six times when in program mode and valid data is receiv storage
- RUN (GREEN) — Normally flashes at 0.5 Hz indicates that the microprocessor is r

Buttons and Switches

There are three visible switches on the PCB.

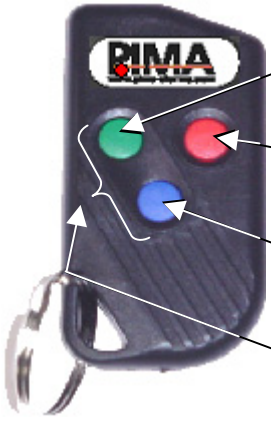
- ADD — In programming mode:
  Used to add a wireless devices to the receiver
- DELETE — In programming mode:
  Used to delete a detector or remote from the receiver
- TAMPER — In normal operation mode:
  Used to alert when the receiver box is tampered with

Remote Control Functions

The REM-3 has three buttons and is used to arm/disarm the alarm system, activate HOME mode, and send a panic signal.

The remote is a Code-Hopping type (i.e., the code is changed with each operation and thus prevents "code stealing") with a key holder for carrying with ones keys.

REM-3



- ARM:
  To arm the alarm system, press the GREEN button on the remote control.
- DISARM:
  To disarm the alarm system, press the RED button on the remote control.
- HOME MODE:
  To activate the alarm system in a Home Mode, press the BLUE button.
- PANIC:
  To send a panic signal to the alarm system, press the BLUE and GREEN buttons together.

PAN-W Wireless Emergency Pendant

The PAN-W code is selected with its internal dipswitch (see Figure 2). Each RC-PRO can be triggered by several Panic Buttons with the same code.

- PANIC:
  The PAN-W is used to send a panic signal to the receiver. This signal triggers the designated programmed zone.

See the PAN-W manual for more information.

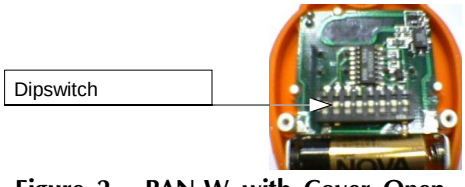


Figure 2 - PAN-W with Cover Open

PIR-W Wireless PIR Detector

The PIR-W is a high quality infrared body movement sensor, which is battery operated and communicates with the receiver via Radio Frequency (RF) transmission. This detector is easy to install, provides excellent detection sensitivity and has a long battery life span (approximately 3 years). This sensor can transmit four different codes to the Receiver:

- Alarm:
  Sent when a valid movement is detected

- **Tamper:**
  Sent when the detector is tampered with (i.e., case is opened)
- **Supervision:**
  Sent every 3 hours to the receiver
- **Low-Battery:**
  Sent when the batteries need replacing

See the PIR-W manual for more information.

RS-W Wireless Reed Switch

The RS-W is a wireless reed switch for doors or windows and with a built-in option to be used, alternatively, as a universal transmitter.

- **Reed Open:**
  Transmitted when the magnet is moved away from the main unit or when the universal transmitter input is opened (i.e. not connected)
- **Reed Close:**
  Transmitted when the magnet is moved next to the main unit or when the universal transmitter input is shorted
- **Low-Battery:**
  Transmitted when battery voltage drops below 4.5V
- **Supervision:**
  Transmitted at least once every 3 hours
- **Tamper:**
  Transmitted when either the top case of the main unit is removed, or the main unit is removed from the wall.

See the RS-W manual for more information.

The Universal Transmitter terminals are serially connected with the reed switch. To "seal" this zone, the Universal Tansmitter terminals must be shorted and the magnet must be next to the main unit.

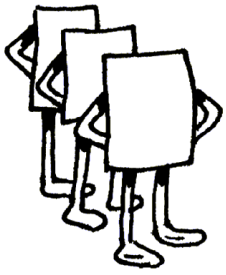
If only the Universal Transmitter terminals are required to operate, the magnet should be fixed next to the RS-W unit.

If you wish to use both Reed and Universal Transmitter terminals then the connections to the terminals should be Normally Closed as on alarm conditions

when either the reed or the terminal become open, the "open" signal will be sent and "close" when they are both sealed again.

NOTE:

The Universal Transmitter connections must not have anything other than a switched contact connected to it (i.e., nothing that supplies power or draws current). Common connections would be to the alarm output wires from a hardwired sensor (to make it wireless) or any reed / push button switch / other alarm sensor etc.



INSTALLING RC-PRO

Connecting with the HUNTER-PRO

Figure 3 illustrates how simple it is to connect the RC-PRO to the control panel (HUNTER-PRO). The two are connected via the supplied serial connection cable. Connect the Molex end to JP4 on the HUNTER-PRO card and the other end connect to the RC-PRO as described in the following table and Figure:

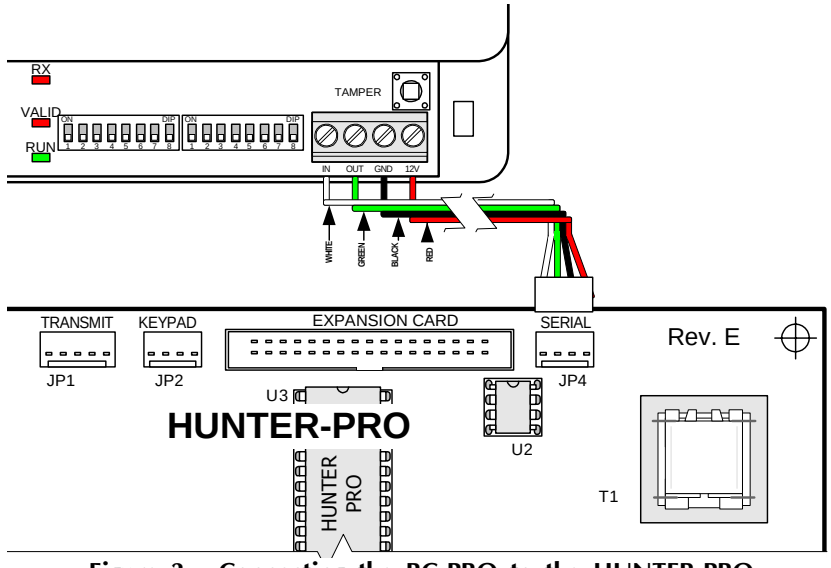


Figure 3 - Connecting the RC-PRO to the HUNTER-PRO

Cable Color	Connected to (in RC-PRO terminal block)
RED	12V
BLACK	GND
GREEN	OUT
WHITE	IN

Table 1 - Connecting the RC-PRO to the HUNTER-PRO

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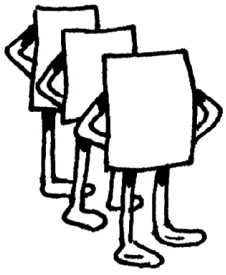


PROGRAMMING THE RC-PRO

Initializing the Receiver

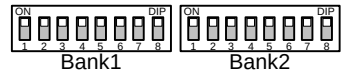
IMPORTANT!

It is recommended to initialize the receiver before the primary installation.

To completely erase all previous programming from the Receiver and restore factory default settings, do the following:

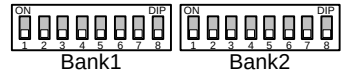
1,2,3...

- Set all switches in dipswitch Bank1 & Bank2 to ON



- Press and hold the DELETE button for at least three seconds

- Set all switches in dipswitch Bank1 & Bank2 back to OFF



Programming Detectors

The wireless detectors that can be connected to the RC-PRO are: Wireless PIR (PIR-W), Wireless Reed Switch (RS-W)[1], and Wireless Panic Button (PAN-W).

[1] The Wireless Reed Switch can also be used as a Universal Transmitter. Various wired detectors (i.e., smoke detectors, window braking detectors, etc.) can be connected to it via its built-in NO/NC input.

Adding a Detector / Panic Button

IMPORTANT!

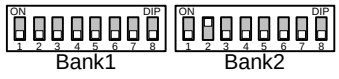
When adding a detector to a zone that was previously programmed with a different one, the new detector shall override the old one.

When adding a detector that was previously programmed with a different zone, the old, duplicate, programming shall be automatically erased.

To add more then one Panic Button to a single zone, the first should be programmed as a standard detector and all other Panic Buttons' code should be set with theirs internal dipswitch (see Figure 2).

1,2,3...

- Set a switch according to the zone to be programmed in dipswitch Bank1 & Bank2 to ON. E.g., for programming zone 6, set switch #6 in Bank1; for programming zone 10, set switch #2 in Bank2 (see opposite figure)



- The YELLOW PROGRAM LED should turn ON

NOTE:

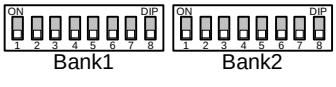
If the YELLOW LED flashes, check that only one switch (in both dipswitch Banks) was set to ON.

- Press the ADD button

- The RED VALID LED should start flashing

- Trigger the wireless detector[2]
- Once the receiver successfully learned the detector's code, the RED VALID LED stops flashing

- Set the switch in dipswitch Bank1 and Bank 2 back to OFF

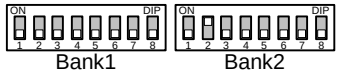


[2] The PIR is triggered by pressing and releasing the TAMPER switch, the PANIC button is simply pressed, and the Reed Switch is triggered by bringing the two parts close together and apart again.

Deleting a Detector / Panic Button

1,2,3...

- Set a switch according to the zone to be deleted in dipswitch Bank1 & Bank2 to ON. E.g., for deleting zone 6, set switch #6 in Bank1; for deleting zone 10, set switch #2 in Bank2 (see opposite figure)



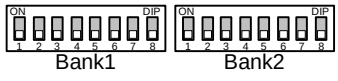
- The YELLOW PROGRAM LED should turn ON

NOTE:

If the YELLOW LED flashes, check that only one switch (in both dipswitch Banks) was set to ON.

- Press the DELETE button

- Set the switch in dipswitch Bank1 and Bank 2 back to OFF



NOTE:

Detector removal can be tested by triggering its sensor while no indication is displayed on the keypad and/or the VALID LED stays OFF.

Setting Detector Supervision Reporting

Each of the individual wireless detectors (i.e. wireless PIR, wireless Reed Switch, etc.) can send a Supervision Report to the receiver to confirm that they are fully functional.

When the Supervision Mode is enabled, the receiver is expecting to receive a Supervision Report from each individual detector with intervals as programmed in the HUNTER-PRO (see

Enabling and Setting Jamming Indication and Supervision on page 21).

The default setting of the Supervision Mode is OFF.

IMPORTANT!

When using Panic Buttons, the Supervision Mode should be set to OFF (i.e., set 0 (zero) as the **SuperVsn** time as described on page 21).

Low Battery and Tamper Reports

Low Battery Report

The wireless detectors automatically transmit a Low Battery report to the RC-PRO wireless receiver when the batteries voltage level is low (i.e., batteries are nearly dead). The Low Battery report code is transmitted immediately after a standard supervision code, or, if the tamper switch is triggered (i.e., the detector casing was opened).

Low Battery Restore is transmitted after the tamper switch is triggered on the wireless detector. This is done regardless of the battery voltage level. However, the detector immediately after, checks the voltage level and when below the threshold, transmits the Low Battery report code again.

Tamper Report

The state of the tamper switch (open/closed) in a wireless detector is transmitted on power-up.

The Tamper Open code is sent whenever the front case is removed and the switch is released. The receiver Tamper Closed code is sent whenever the front case is closed and the switch is depressed again.

Programming Remote Controls

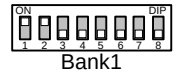
IMPORTANT!

When programming remotes / panic buttons, make sure that there are no detectors transmitting, as they will interfere with the programming procedure.

Adding a Remote

1,2,3...

- Set switches 1 & 2 in dipswitch Bank1 to ON

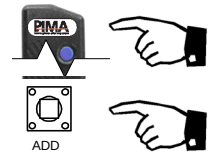


- The YELLOW PROGRAM LED should turn ON

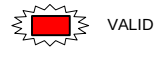
NOTE:

If the YELLOW LED flashes, check that only these two switches (in both dipswitch Banks) were set to ON.

- (A) Press and hold the remote button
- (B) Press the ADD button

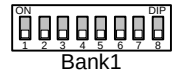


- (C) The RED VALID LED should start flashing



- (D) Release the remote button; the RED VALID LED stops flashing

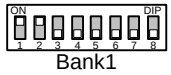
- Repeat steps A to D for any extra remote button to be enabled
- Set the switches in dipswitch Bank1 back to OFF



Deleting all Remote Controls

1,2,3...

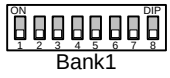
- Set switches 1 & 2 in dipswitch Bank1 to ON

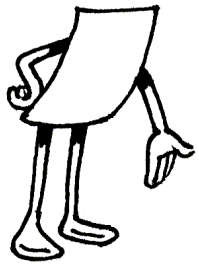


- The YELLOW PROGRAM LED should turn ON

- Press the DELETE button

- Set the switches in dipswitch Bank1 back to OFF





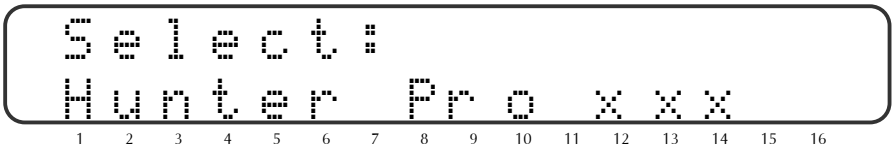
PROGRAMMING THE HUNTER-PRO

Entering Service Mode

1,2,3...

To program the HUNTER-PRO, first enter the Service Mode. To enter the Service Mode, do as follows:

➢ ☞ *Master Code* → **SERVICE** **NEXT** → ☞ *Service Code*



NOTE:

The factory defaults for the Master and Service codes are:

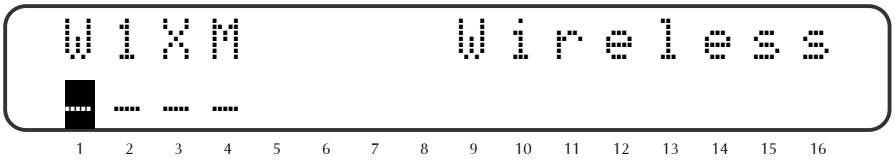
Master Code: **5555**

Service Code: **1234**

Enabling and Setting Wireless Zones

1,2,3...

- ☞ *Master Code* → **NEXT** (SERVICE) → ☞ *Service Code*
- → **7** (HOME 2) → **ENTR** eight times until you see the following display:



- A plus ("+") should be set under the W. This indicates that a wireless receiver (i.e., RC-PRO) is connected to the system
- Under the 1, set a plus ("+") or a minus ("-") as follows:
  - \+ when all 16 zones are wireless
  - \- when 8 zones (1 to 8) are wired and 8 (9 to 16) are wireless

NOTE:

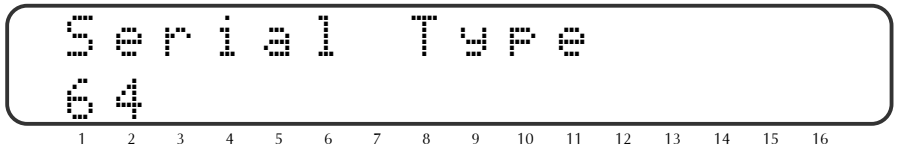
The parameters are set (i.e., changing from + to – and vise versa) is done by pressing the **#** (RESET).

To move back and forth between parameters use the **BACK** and **NEXT** (SERVICE) keys.

IMPORTANT!

When installing eight wired and eight wireless zones, the receiver should be programmed with zones 1 through 8 while in the control panel these zones are represented as zones 9 through 16 respectively (i.e., zone 1 in the receiver is zone 9 in the control panel, zone 2 is zone 10 and so forth).

- → **ENTR** twice until you see the following display:



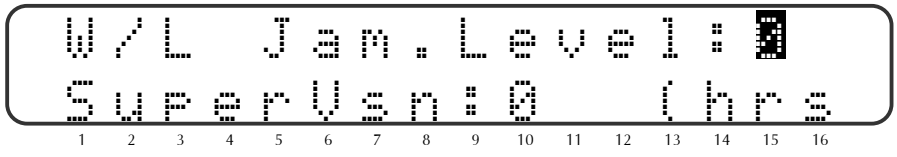
➢ Set the serial type to 66 (if not so)

Enabling and Setting Jamming Indication and Supervision

1,2,3...

➢ ☞ *Master Code* → SERVICE **NEXT** → ☞ *Service Code*

➢ → HOME 2 **7** → **ENTR** 11 times until you see the following display:



W/L Jam. Level is the minimum Receiver Signal Strength Indication (RSSI) of the jamming signal that the system shall respond to and report to a Central Monitoring Station (CMS).

There are 11 levels to choose from (0 to 10), where 0 (zero) means this feature is disabled and 1 to 10 is the minimum required levels. Please note that for the system to response to any jamming signal, this signal should be present for at least one minute.

SuperVsn is the interval (in hours) that the control panel is expecting to receive a supervision signal from each of the wireless detectors. If a signal is not received within this time frame, a failure shall be recorded in the system's history log (memory) and a System Response is issued (as programmed in Response to Zone Failure - see the HUNTER-PRO installation manual).

NOTE:
As wireless PIR transmit supervision signal approximately every 3 hours, the programmed interval should be more then 3 hours.

Setting 0 (zero) as the supervision interval shall disables this feature.

NOTE:
When the supervision interval is set to anything but 0 (zero), all "empty zones" (i.e., zones which are not linked to wireless devices) must be permanently bypassed in the zone characteristic programming. Failing to do so will cause a Supervision Lost indication and reporting.

Example1:
Installing 8 wired zones with 8 wireless zones. Zones 9,10,11,12 and 13 are linked to wireless detectors. Zones 14, 15, and 16 are left unlinked and thus must be bypassed.

Example2:
Installing 16 wireless zones. Zones 1 to 12 are linked to wireless detectors. Zones 13 to 16 are left unlinked and thus must be bypassed.

- Press **ENTR** followed by **END** until the clock is displayed on the LCD (i.e., normal user operation mode)

TROUBLESHOOTING AND TESTS

Test Modes

There are two Test Modes. The first is a Walk Test, designed for testing all the detectors; the second is a Tamper Test, designed for a single detector test.

1,2,3...

➢ To enter the Test Modes: ☞ *Master Code* → RESET #

The display shall show:

```
Entr=Test WL all
NEXT=Tamper Only
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
```

Walk Test

➢ → ENTR to start the Walk Test Mode

When activating the Walk Test mode, the wireless detectors' messages are displayed on the LCD with each valid message received by the RC-PRO. The message is displayed along with the detector's name and RSSI level. In addition, the buzzer in the keypad is activated, and its audible frequency is proportional to the RSSI level.

NOTES:

While in Walk Test mode, a blinking 'W' is displayed on the LCD.
This mode is only valid for 10 minutes. Should Walk Test be repeated, the above procedure must be carried out again.

To stop this mode press and hold the END key.

Pressing ENTR will end with the system displaying each valid message. This mode is frequently used to check all installed detectors. The detectors are

triggered one by one and after 'walking through' all of them, the history log (memory) holds all their signals along with their measured RSSI level.

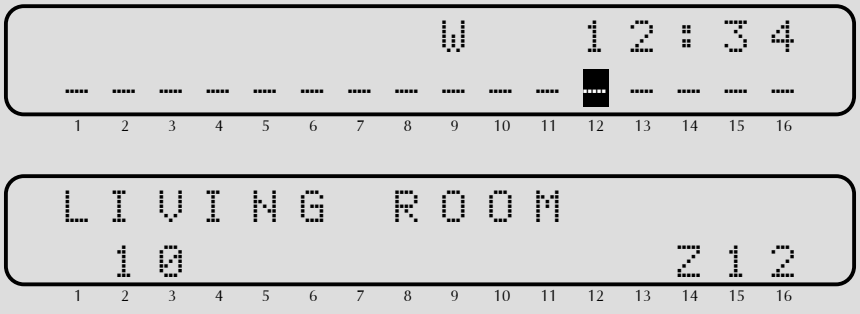
Tamper Test

➢ → SERVICE **NEXT** to start tamper test

Pressing NEXT will end with the system displaying only the tamper signals received from the detector(s). This mode is most useful when deciding on the best location for a specific wireless detector.

To execute the test, open the detector's case and hold down the tamper switch. Now, each time the tamper switch is released, a Tamper Signal is transmitted by the detector and the appropriate data is displayed on the LCD.

Example Display for Test Mode:



Signal received from zone 12 (programmed name is Living Room) with RSSI level of 10 (where 10 is the best score and 1 is the worst)

LCD Display (Normal Operation)

Adding the wireless support to the HUNTER-PRO shall add three more possible indications (i.e., a letter above the zone number) concerning a zone.

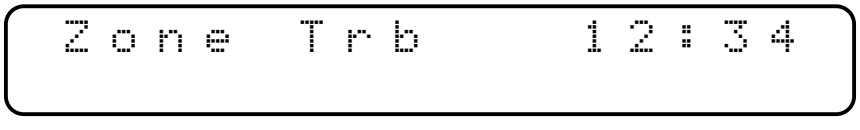
The possible new indications are:

L – Detector has Low Battery

U – Supervision signal was lost

F – The detector is tampered with (i.e., case is open); with this indication a Zone Trb is displayed on the LCD

Example Display:



```
  U     L     F
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
```

Zone 3 lost the supervision signal,
Zone 6 has Low Battery,
Zone 9 has been tampered with

When there is a receiver problem, the following is displayed:

```
W/L  UNIT      13:34
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
```

The receiver problem can be one of the followings:

- The tamper of the receiver was activated
- There is no communication with the receiver
- The receiver is jammed

In the history log, this specific failure can be viewed as described in the next paragraph.

History Log Display (Memory)

The followings are examples of possible events as logged in the system's history log:

```
12)Zone  7
FAL  JUL  12  02:34
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
```

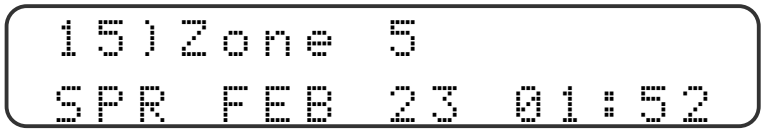
Zone 7 tamper was opened (Fail).

```
13)Zone  7
RST  JUL  12  12:45
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
```

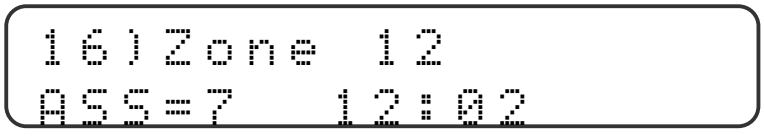
Zone 7 tamper was closed (Restore).

```
14)Zone  3
BAT  AUG  01  05:12
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
```

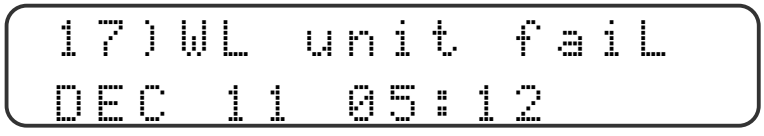
Zone 3 low battery.



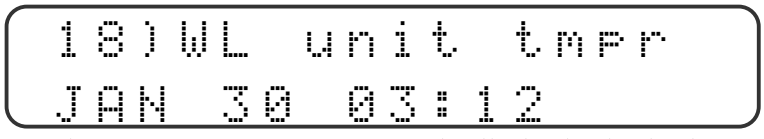
Zone 5 supervised signal not received.



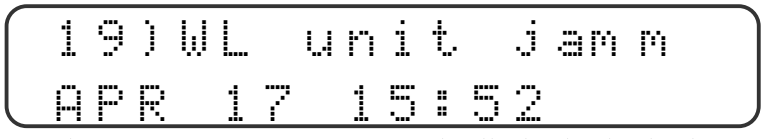
Zone 12 test mode result; RSSI=7



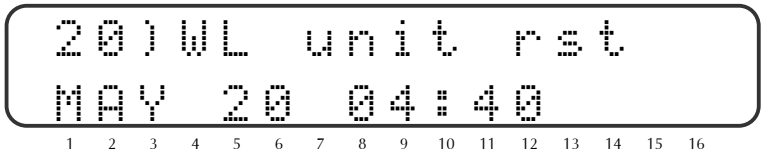
No communication with receiver



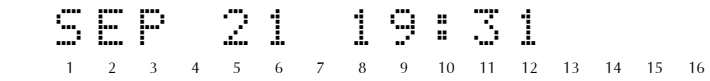
Receiver tamper was opened



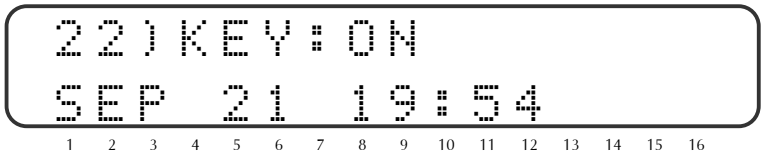
Receiver was jammed.



Receiver is restored (after no communication, tamper or jamming failure)



Wireless Panic was activated



System was armed using the wireless remote.

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