

# OMNIA<sup>®</sup>

433<sub>MHZ</sub>

## Wireless Receiver Module V1.0



## Reference & Installation Manual



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# 1.0 INTRODUCTION

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The Omnia Wireless Receiver Module (OMN-RCV3) allows you to add up to 8 fully supervised Omnia wireless motion detectors and/or door contacts, and up to 8 programmable remote controls to the Spectra system.

## 1.1 TECHNICAL SPECIFICATIONS

- Di-pole antenna
- Error Correction Algorithm
- Code-Hopping Technology
- Frequency: 433 MHz
- Range (line of sight): PIRs & door contacts = 500ft (150m)  
remote controls = 300ft (100m)
- Sensitivity: -120 dBm
- Current consumption: 50 mA
- Dimensions (no antenna): 15cm H x 16cm L x 3cm W  
(6in H x 6.5in L x 1.1in W)
- Operating temperature: 0°C to 50°C (32°F to 122°F)
- Operating humidity: 85%
- Approvals:



## 1.2 SYSTEM FEATURES

- Auto-Panel Recognition
- Add 8 wireless motion detectors and/or door contacts to the Spectra system
- Add 8 remote controls to the Spectra system
- Reflow design
- On-board tamper switch
- Full system supervision (check-in, low battery and tamper)
- Transmitter signal strength indicator

## 2.0 INSTALLATION

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The following sections will detail how to mount and connect the Omnia Wireless Receiver Module (OMN-RCV3).

### 2.1 LOCATION

Mount the Omnia Wireless Receiver on a wall allowing at least 5cm (2") around the module to permit adequate ventilation and heat dissipation. Select a site that is not susceptible to drastic temperature changes. Avoid installation near or in the path of strong RF fields (i.e. neon lights, computers), on or near metal objects, circuit breaker boxes, air conditioners, and heater ducts since they may cause interference and reduce the module's sensitivity. We recommend installing the module in a centralized location on the main floor. Avoid installing the module in the basement. Refer to the appropriate Spectra Reference & Installation Manual for maximum allowable distances between the control panel and the Wireless Receiver Module.

### 2.2 CONNECTIONS AND MOUNTING

Firmly screw the antenna into the connector marked "ANT" on the Receiver Module as shown in Figure 2.1 on page 5. Using a drill or screwdriver, punch out the four mounting holes on the back of the plastic case. Align the six holes of the printed circuit board with the six pins on the back plastic mounting case and snap into place. If placed correctly, the antenna will lean directly over the groove in the mounting case.



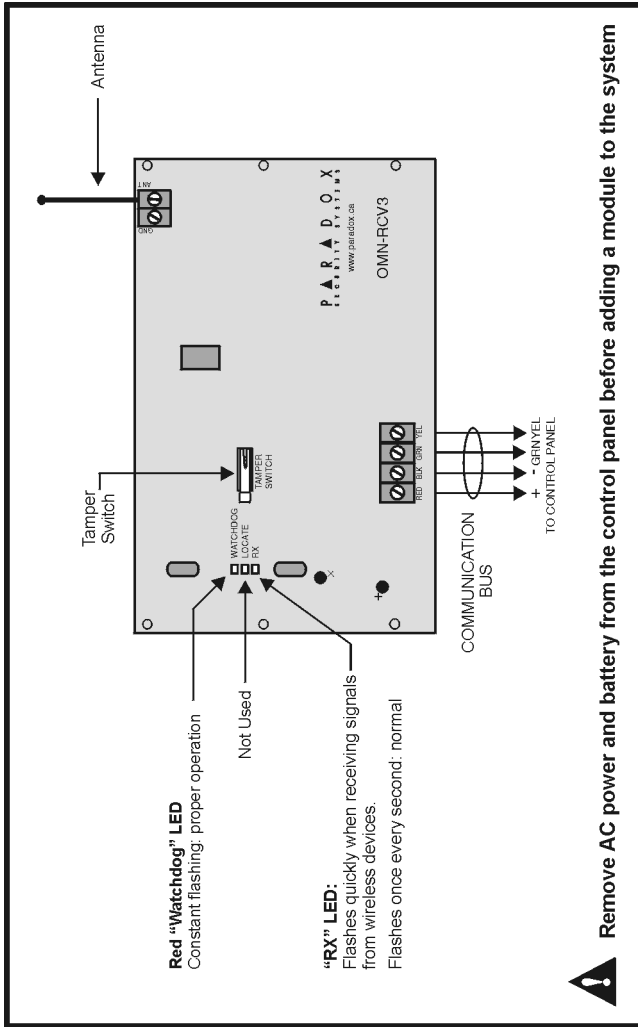
***Do not cut, bend, or alter the antenna. Avoid mounting the Receiver Module near or on metal as this may affect the module's sensitivity.***



***Do not connect more than one OMN-RCV3 module to the control panel. The OMN-RCV3 does not function with the 1758/1758EX Spectra control panel.***

The Omnia Wireless Receiver Module is connected to the Spectra control panel's communication bus in a star or daisy chain configuration. Refer to Figure 2.1 on page 5.

**Figure 2.1: Connecting the OMN-RCV3 to the control panel**



**Remove AC power and battery from the control panel before adding a module to the system**

## 3.0 PROGRAMMING

To successfully install an Omnia wireless system to your Spectra system, ensure that the following steps are completed:

1. Install the Omnia Receiver. Connect the Omnia Receiver to the Spectra control panel and power up.
2. Assign the remote controls if necessary.
3. Assign the transmitters (door contacts and motion detectors), and program their zones.
4. Install the transmitters. Insert the batteries, and close the transmitter cover.
5. Wait for the control panel to be in “ready” mode. The status light on the keypad will be green when the control panel is ready.
6. In order to ensure proper synchronization between the transmitters and receiver, open and close the transmitters’ covers and zones.

### 3.1 HOW TO ENTER PROGRAMMING MODE

Programming of the OMN-RCV3 is done in Programming Mode through any keypad connected to the Spectra control panel.

#### How to enter programming mode.

1. Press the **[ENTER]** button.
2. Enter your **[INSTALLER CODE]** (default = 000000).
3. Enter the **[SECTION NUMBER]** you wish to program.
4. Enter the required **[DATA]**.



*The OMN-RCV3's programming guide can be found in the appropriate Spectra Programming Guide.*

### 3.2 WIRELESS TRANSMITTER PROGRAMMING

The programming of the wireless transmitters (detectors and door contacts) is accomplished in two steps:

1. Assigning the detectors and door contacts to the Wireless Receiver Module.
2. Programming the zones in the Spectra control panel.

### 3.2.1 ASSIGNING DETECTORS AND DOOR CONTACTS TO THE RECEIVER

#### SECTIONS [601] TO [608]

In Spectra systems, up to 8 wireless transmitters (detectors and door contacts) can be assigned to each Receiver Module. Section [601] to [608] represent expansion inputs 1 to 8 respectively. For example, section [601] is assigned to expansion input 1, section [602] is assigned to expansion input 2, etc. (refer to Table 3.1). Each Expansion Input represents a specific zone in the system depending on the type of Spectra control panel being used and whether the ATZ option is enabled (refer to the appropriate Spectra control panel Programming Guide).

**Table 3.1: Sections and Expansion Inputs**

Section #	6-digit Serial Number	Expansion Input
[601]	__ / __ / __ / __ / __ / __	Input 1
[602]	__ / __ / __ / __ / __ / __	Input 2
[603]	__ / __ / __ / __ / __ / __	Input 3
[604]	__ / __ / __ / __ / __ / __	Input 4
[605]	__ / __ / __ / __ / __ / __	Input 5
[606]	__ / __ / __ / __ / __ / __	Input 6
[607]	__ / __ / __ / __ / __ / __	Input 7
[608]	__ / __ / __ / __ / __ / __	Input 8

#### How to assign detectors & door contacts to the receiver module.

In step 3 in section 3.1 on page 6:

1. Enter the desired [SECTION NUMBER] (601 to 608).
2. Enter the 6-digit serial number of the detector or door contact.



***Do not assign detection devices from different modules to the same expansion input. For example, do not assign a wireless transmitter to section [601], then connect a detection device to input Z1 of the APR3-ZX8.***



*The serial number is located on the inside of the transmitter or you can use the Unknown Serial Number Display method (refer to section 3.4 on page 10) to determine its serial number.*



*The transmitters must be activated once having been assigned to the Receiver. To activate a transmitter, insert the batteries and close the cover. To ensure proper synchronization between the receiver and the transmitter, open and close the zone corresponding to the transmitter.*

### **3.2.2 DELETING THE DETECTORS AND DOOR CONTACTS**

SECTIONS [601] TO [608]

#### **How to delete the assigned transmitters.**

In step 3 in section 3.1 on page 6:

1. Enter the desired [SECTION NUMBER] (601 to 608).
2. Press the [FORCE] button six times to clear the serial number.

### **3.2.3 PROGRAMMING THE ZONES IN THE SPECTRA CONTROL PANEL**

The zones allocated to the wireless transmitters must be programmed in the Spectra control panel. Refer to the appropriate Spectra Reference & Installation Manual for instructions on programming the zones.

### **3.3 VIEWING THE TRANSMITTER SIGNAL STRENGTH**

SECTIONS [631] TO [638]

Once the detectors and/or door contacts have been installed and assigned to the Receiver Module, the signal strength of each transmitter can be verified in sections [631] to [638]. Each section represents the signal strength viewer for a specific device. For example, section [631] is the viewer for the device in section [601] and section [638] is the viewer for the device in section [608]. Please note that this feature will only work with wireless transmitters that have already been assigned to an Expansion Input (zone) as described in section 3.2.1 on page 7. A reading of 1 is the weakest and a reading of 8 is the strongest. An average reading of 3 and up is



acceptable. Sometimes moving the transmitter or receiver by a small amount will greatly increase the signal reception.

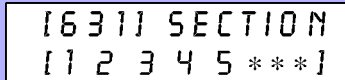
### **How to view a transmitter's signal strength.**

In step 3 in section 3.1 on page 6:

1. Enter the desired [SECTION NUMBER] (631 to 638).
2. Press the transmitter's tamper switch, or open the corresponding zone.

**On an LED keypad:** The keypad will illuminate numbers 1 to 8.

**On an LCD keypad:** The keypad will display from 1 to 8 characters on the screen. For example, in the figure below the LCD screen shows a signal strength reading of 5.



The image shows a rectangular LCD screen with a black border. The screen displays two lines of text in a monospaced font. The top line reads "16311 SECTION" and the bottom line reads "[1 2 3 4 5 \* \* \*]". The character "5" in the bottom line is highlighted with a white background, indicating the current signal strength reading.



***After entering the desired section, ignore the first reading as it will not be accurate.***

You can also use the OMN-RCV3's beep sequence feature to verify a transmitter's signal strength. When you press a transmitter's tamper switch, beep tones emanating from all the keypads connected to the communication bus will advise you of the transmitter's signal strength.

### **How to attain a transmitter's signal strength using the beep sequence.**

1. Press the transmitter's tamper switch.
2. Listen for the beep tones:

If the signal strength is less than 3 = One beep

If the signal strength is between 3 and 6 = Two beeps

If the signal strength is greater than 6 = Three beeps

## 3.4 VIEWING UNKNOWN SERIAL NUMBERS

### SECTION [630]

This feature will display the serial number of any Omnia motion detector or door contact on any Spectra keypad.

#### **How to view unknown transmitter serial numbers.**

In step 3 in section 3.1 on page 6:

1. Enter section **[630]**.
2. Press the tamper switch of any Omnia wireless motion detector or door contact. When the signal has been received, the keypad will emit a confirmation beep (“Beep-Beep-Beep-Beep-Beep”).
3. **On an LED Keypad:** The serial number digits will appear one at a time by illuminating the corresponding LED light. To view the next digit press the **[ENTER]** button.  
**On an LCD Keypad:** The first 3 digits of the serial number will appear. Press the **[ENTER]** button 3 times to view the next 3 digits.

## 3.5 SYSTEM RESET

Refer to the appropriate Spectra Reference and Installation Manual.

## 4.0 SUPERVISION OPTIONS

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### 4.1 CHECK-IN SUPERVISION

#### SECTION [610]: OPTION [1]

Option [1] enables the Check-in Supervision feature. The Wireless Receiver Module waits for each of its assigned detectors and/or door contacts to send a status signal within a specified time period (as programmed in section 4.2) to confirm their presence and functionality. If a device has not sent a signal within that time period, the Wireless Receiver Module will transmit a supervision loss signal to the control panel. The control panel can then generate a trouble, an alarm, and/or can transmit

a report code to the monitoring station. For details refer to the appropriate Spectra Reference & Installation Manual.

#### **How to enable check-in supervision.**

In step 3 in section 3.1 on page 6:

1. Enter section **[610]**.
2. Enable or disable option **[1]**.
  - Option **[1] OFF** = Check-In Supervision disabled (default)
  - Option **[1] ON** = Check-In Supervision enabled

## **4.2 CHECK-IN SUPERVISION TIMER SETTINGS**

SECTION **[610]:** OPTIONS **[2]** AND **[5]**

Options **[2]** and **[5]** define the time period that must elapse before the Omnia transmitters send a status signal to the Wireless Receiver Module. For example, if the timer is set to 12 min (option **[5]=off** ; option **[2]=on**), the transmitters will send a status signal every 12 minutes to the Receiver Module. If the OMN-RCV3 does not receive a signal from one of its wireless transmitters within the period defined here, it can send a Supervision Loss signal to the control panel. Refer to section 4.1 for instructions on enabling check-in supervision.

#### **How to set the check-in supervision timer.**

In step 3 in section 3.1 on page 6:

1. Enter section **[610]**.
2. Enable or disable options **[2]** & **[5]**.
  - Option **[2] OFF** = hours (default)
  - Option **[2] ON** = minutes
  - Option **[5] OFF** = 12 (default)
  - Option **[5] ON** = 6



***The assigned transmitters must be set to the same Check-In timer setting as the Receiver. For example, if the Receiver Check-In timer is set at 12 hours, the transmitters' Check-In timers must also be 12 hours.***

### 4.3 LOW BATTERY SUPERVISION

When the battery voltage of an Omnia wireless transmitter (motion detector or door contact) drops to less than 3.1V, the Spectra control panel will send a low battery report code to the monitoring station, and a trouble will appear in the keypad's trouble display.

### 4.4 ON-BOARD MODULE TAMPER SUPERVISION ZONE ASSIGNMENT

#### SECTION [615]:

The OMN-RCV3 comes equipped with an on-board tamper switch. This feature will allow a module tamper to report through one of the module's Expansion Inputs (zone). When a tamper is detected on the module, it will send a Zone Tamper report code to the control panel via the communication bus. The Zone Tamper report code will originate from the zone defined by the Expansion Input (**001-008**) you have programmed in section [615]. Please note that the corresponding zone must be programmed (refer to the appropriate Spectra Reference & Installation Manual for more details).

For example, when you program 003 (Expansion Input 3) in section [615] of a Spectra 1728 panel with the ATZ feature enabled, and a tamper occurs on the OMN-RCV3 module, the control panel will transmit the Zone Tamper report code as originating from zone 15.



*If you Enable the OMN-RCV3's tamper switch in section [615], the tamper switch will occupy one of the zones.*

#### **How to assign the Receiver's tamper switch to a zone.**

In step 3 in section 3.1 on page 6:

1. Enter section [615].
2. Enter an [INPUT NUMBER] (001-008).  
000=Disabled (default)

## 5.0 REMOTE CONTROL PROGRAMMING

The Omnia Wireless Receiver Module accepts up to eight fully programmable remote controls. Programming the remote controls is accomplished in three steps:

1. The remote controls must be assigned to the Wireless Receiver Module.
2. The remote controls from the Wireless Receiver Module must be assigned to User Access Codes.
3. The buttons on the remote controls must be programmed.

In Spectra systems, sections [721]/[731] to [728]/[738], [701] to [708], and [711] to [718] are all interrelated. For example, when assigning a remote control to the Receiver Module:

1. The remote control is assigned using the Automatic Learning method in sections [721]/[731] to [728]/[738].
2. The remote control is assigned to User Access Codes in sections [701] to [708].
3. The remote control's buttons are programmed in sections [711] to [718].



*The remote control will transmit a signal for only 1 second when a button is pressed. This is done to conserve the remote control's batteries.*

### 5.1 ASSIGNING A REMOTE CONTROL TO THE RECEIVER MODULE

SECTIONS [721] / [731] TO [728] / [738]

Remote controls are assigned to the module using the Automatic Learning method. Depending on which Spectra system version you are using, the automatic learning method differs.

**For installations using a Spectra control panel version 1.23 or lower:**

#### **How to assign a remote control to the receiver module (V1.23 and lower).**

In step 3 in section 3.1 on page 6:

1. Enter the desired [SECTION NUMBER] (721 to 728).
2. Enter [111111]. A rejection beep will sound, and it will exit the section.
3. Press any button on the remote control twice, or until you hear three consecutive rejection beeps ("Beeeeeeeeeeeeeeep").

For installations using a Spectra control panel version 2.0 or higher:

**How to assign a remote control to the receiver module (V2.0 and higher).**

In step 3 in section 3.1 on page 6:

1. Enter desired [SECTION NUMBER] (731 to 738).
2. Press any button on the remote control twice, or until the confirmation beep sounds (“Beep-Beep-Beep-Beep”).



*If you are having trouble assigning the remote control, the environment may be too noisy. Therefore, we recommend that you assign the remote controls before installing the detectors and door contacts.*

## 5.2 ASSIGNING THE REMOTE CONTROLS TO USER ACCESS CODES

SECTIONS [701] TO [708]:

Each remote control must be assigned to a User Access Code. All User Access Codes are given a User Number from 001 to 048. Enter the desired User Number in a section from [701] to [708] that represent the remote control assigned in sections [721]/[731] to [728]/[738] (refer to section 5.1 on page 13). For example, the remote control assigned in section [731] will be assigned to the User Access Code designated in section [701].

**How to assign a remote control to a user access code.**

In step 3 in section 3.1 on page 6:

1. Enter the desired [SECTION NUMBER] (701 to 708).
2. Enter the User Number to be assigned to the remote control (001 to 048).

## 5.3 PROGRAMMING THE REMOTE CONTROL BUTTONS

SECTIONS [711] TO [718]

Each remote control can be programmed to send a signal to the control panel to perform up to 8 different actions. Each digit in sections [711] to [718] represents a button or combination of buttons (refer to Table 5.1 on page 15). When a user arms or disarms using the remote control, the control panel will arm or disarm **all** the areas assigned to the User Access Code. For example, you arm with a remote control whose User Access Code is assigned to areas 1 and 2, the control panel will attempt to arm areas 1 and 2.

Sections [711] to [718] represent the remote controls assigned to sections [721]/[731] to [728]/[738] (refer to section 5.1 on page 13). For example, the buttons for the remote control assigned in section [731] will be programmed in section [711].

**How to program the remote control buttons:**

In step 3 in section 3.1 on page 6:

1. Enter the desired [SECTION NUMBER] (711 to 718).
2. Enter the hexadecimal value (0 to D) of the desired options from Table 5.2 on page 16 in the appropriate space (refer to Table 5.1 on page 15). If you do not wish to program all the buttons or button combinations, simply press the [ENTER] button at any time to save and exit.

Note: Press the [FORCE] button 8 times, that is, once for every button or button combination.

**Table 5.1: Remote Control Button Programming**

Remote Control Button Programming (refer to Table 5.2)								
Section								
[711]	/	/	/	/	/	/	/	remote control #1
	A	B	C	D	A+B	C+D	A+C B+D	
[712]	/	/	/	/	/	/	/	remote control #2
	A	B	C	D	A+B	C+D	A+C B+D	
[713]	/	/	/	/	/	/	/	remote control #3
	A	B	C	D	A+B	C+D	A+C B+D	
[714]	/	/	/	/	/	/	/	remote control #4
	A	B	C	D	A+B	C+D	A+C B+D	
[715]	/	/	/	/	/	/	/	remote control #5
	A	B	C	D	A+B	C+D	A+C B+D	
[716]	/	/	/	/	/	/	/	remote control #6
	A	B	C	D	A+B	C+D	A+C B+D	
[717]	/	/	/	/	/	/	/	remote control #7
	A	B	C	D	A+B	C+D	A+C B+D	
[718]	/	/	/	/	/	/	/	remote control #8
	A	B	C	D	A+B	C+D	A+C B+D	

**Table 5.2: Button Options**

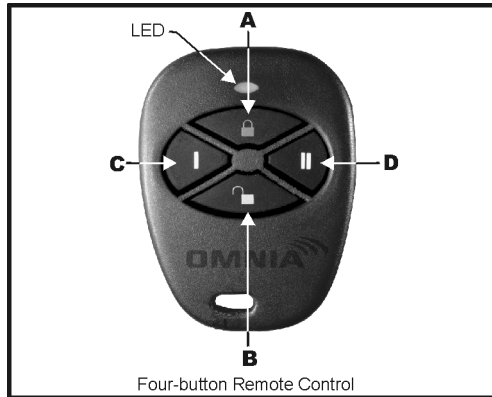
[0] = Not used	[7] = Regular Arm and Disarm
[1] = Regular Arm	[8] = Generate a Panic 1 Alarm (Police)
[2] = Stay Arm	[9] = Generate a Panic 2 Alarm (Medical)
[3] = Instant Arm	[A] = Generate a Panic 3 Alarm (Fire)
[4] = Force Arm	[B] = Activates any PGMs that have Event Group #07 as their Activation Event
[5] = Disarm	[C] = Activates any PGMs that have Event Group #08 as their Activation Event
[6] = Disarm when there is no alarm	[D] = Activates any PGMs that have Event Group #09 as their Activation Event

**Table 5.3: Decimal & Hexadecimal Programming Table**

Value or Action	What Do I Press?	What Do I See?		
		10-Zone LED	16-Zone LED	LCD
Values 1 to 9	[1] to [9]	[1] to [9]	[1] to [9]	[1] to [9]
A (hexa only)	[0]	[0 (10)]	[10]	0
B (hexa only)	[STAY]	[STAY]	[11]	B
C (hexa only)	[BYP]	[BYP]	[12]	C
D (hexa only)	[MEM]	[MEM]	[13]	D
E (hexa only)	[TBL] / [TRBL]	[TBL]	[14]	E
F (hexa only)	[PG] / [FNC1]	[PG]	[15]	F
Exit Without Saving	[CLEAR]	[ENTER] flashes	[ARM1] & [STAY1] flash	"SECTION [ ]"
Insert Blank Digit	[FORCE]	Displays next digit or next section		
Save Data	[ENTER]	Advances to the next section		



**Figure 5.4: Remote Control Button Identification**



*The User Code assigned to the remote control (refer to section 5.2 on page 14) must have the same User Options enabled. For example, if you enable the Force Arming button option, you must enable the appropriate Force Arming user option. Also, if you enable any Panic button options, you must enable the Panic options in the Spectra control panel (refer to the appropriate Spectra Reference & Installation Manual).*

## **5.4 DELETING REMOTE CONTROLS**

SECTIONS [721]/[731] TO [728]/[738]

**For installations using a Spectra control panel version 1.23 or lower:**

### **How to delete a remote control (Spectra version 1.23 or lower):**

In step 3 in section 3.1 on page 6:

1. Enter the desired [SECTION NUMBER] (721 to 728).
2. Enter [000000].

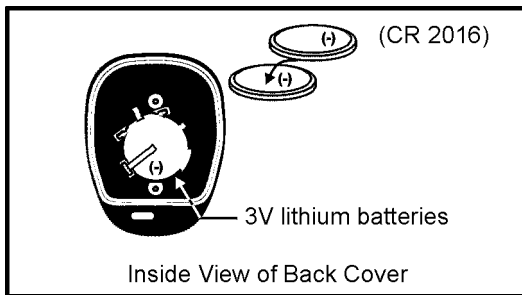
For installations using a Spectra control panel version 2.0 or higher:

**How to delete a remote control (Spectra version 2.0 or higher):**

In step 3 in section 3.1 on page 6:

1. Enter the desired [SECTION NUMBER] (731 to 738).
2. Press the [FORCE] button.

## 5.5 REPLACING THE REMOTE CONTROL BATTERIES



**How to replace the remote control batteries.**

1. Remove the two screws from the back of the remote control and remove the back cover.
2. Remove the old batteries from inside the remote control.
3. Replace with two 3V lithium batteries (CR2016) ensuring proper polarity. The positive of the batteries is inserted face down.
4. Set the back cover in place, and fasten it with the two screws.

## 6.0 LIST OF SECTIONS

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Section	Description
[601] to [608]	- Assigning detectors and door contacts to the receiver - Deleting the detectors and door contacts
[610]	Option [1]: Check-in supervision Option [2]: Check-in supervision base time Option [5]: Check-in supervision time value
[615]	On-board module tamper supervision zone assignment
[630]	Viewing unknown serial numbers
[631] to [638]	Viewing the detector and door contact signal strengths
[701] to [708]	Assigning the remote controls to user access codes
[711] to [718]	Programming the remote control buttons
[721] to [728] [731] to [738]	- Assigning a remote control to the receiver <i>For Spectra versions 1.23 or lower</i> <i>For Spectra versions 2.0 or higher</i> - Deleting a remote control

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