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**uplink**<sup>®</sup> 4530

**4G PRIMARY  
ALARM COMMUNICATOR**

# **INSTALLATION & USER'S GUIDE**



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PRODUCT ID # 202132UP453000

# 4G PRIMARY ALARM COMMUNICATOR

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## INTRODUCTION

The Uplink 4530 4G Primary Alarm Communicator is a GSM alarm communicator designed to be used with almost any manufacturer's alarm panels that incorporate a digital telephone dialer. The Uplink 4530 provides a "Primary" wireless interface to the protected premises and replaces the phone line connection. The Uplink 4530 unit will "intercept" the alarm panel's digital dialer output when the panel has an event to report, and communicate with the panel as if it were a central station alarm receiver. Once the 4530 completes a communications session with the alarm panel, it will transmit the alarm information using the local GSM cellular communications network. The Model 4530 is compatible with alarm systems and central stations using these formats: Contact ID (SIA-DC05), SIA (SIA-DC03), Modem IIe/IIIa/IIIa<sup>2</sup> or Pulse 4/2.

## KEY FEATURES

**A. FULL DATA Reporting.** Compatible with most alarm panels using Contact ID (SIA DC-05 Standard), SIA FSK Level 1 (SIA DC-03 Standard), Modem IIe/IIIa/IIIa<sup>2</sup> or Pulse 4/2 digital dialer formats. All information sent by the alarm panel in these formats (account number, zone information, User IDs, etc.) will be sent to the central station using the GSM network.

**B. Power Requirements:** Requires constant 12V DC power from a power supply, battery, or alarm panel with a constant 200 mA and a peak 600 mA for one second during transmission.

**C. Panel to 4530 Cable Supervision.** Monitors continuity of the cable connecting the panel's telephone dialer to the 4530. This feature is activated through the website [www.uplink.com](http://www.uplink.com) or by calling Uplink Customer Service:

**1-888-9-UPLINK** (1-888-987-5465)

**D. Output.** The 4530 has one programmable relay output. This output can be programmed to activate upon the occurrence of one or more of the following Trouble conditions:

- Cellular Network Loss
- No Central Station Acknowledgement
- Low DC input Voltage
- Panel/4530 Cable Supervision Trouble
- Unit Disabled by Dealer Command
- Watchdog Circuit Activation

**E. Power Source Monitoring (Low DC Input Voltage Reporting).** The 4530 can report a low input Voltage condition to the central station when its DC input voltage drops below 10.2V DC. It will report Low input Voltage Restoral at 11.4V DC.

**F. Automated Testing.** The 4530 can be programmed to send an automated test signal to the central station on a monthly, weekly or daily interval.

## KEY FEATURES (cont.)

**G. GSM Network Supervision.** Supervises the local GSM network. If the unit no longer locates the local GSM Network, its output relay can be set up to report this trouble condition.

**H. Status/Received Signal Strength LEDs.** The five LEDs indicate the current operational status and are visible from outside the enclosure. These LEDs can be placed into Received Signal Strength Indication mode (RSSI) to assist in selecting the optimal mounting location for transmitting and receiving cellular radio signals.

**I. Easy Initiation.** Ships with a SIM card, with easy activations available via the website at [www.uplink.com](http://www.uplink.com) or by calling Uplink Customer Service:

**1-888-9-UPLINK** (1-888-987-5465)

Requires the central station receiver phone number and/or its IP address and Port number.

**J. Web-based Services.** Available at [www.uplink.com](http://www.uplink.com) and include:

- a. secure login for dealers
- b. immediate, real-time activation
- c. history of past event transmissions
- d. initiation of a test report
- e. the ability to query the unit and receive a real-time radio report status including a Received Signal Strength reading
- f. programming the output and other internally generated events

# **WARRANTY & LIMITATION OF LIABILITY**

## **Standard 12-Month Limited Warranty**

THE FOREGOING WARRANTY APPLIES ONLY WITH RESPECT TO AUTHORIZED UPLINK DEALERS OR OTHER AUTHORIZED UPLINK RESELLER PURCHASING AN UPLINK 4530 OR OTHER UPLINK DEVICE DIRECTLY FROM UPLINK. UPLINK DEVICES PURCHASED FROM AN UPLINK DISTRIBUTOR OR OTHER THIRD PARTY RESELLER ARE NOT WARRANTED TO THE PURCHASER BY UPLINK AND ARE COVERED SOLELY AND EXCLUSIVELY BY SUCH WARRANTY AS MAY BE SEPARATELY OFFERED BY THE DISTRIBUTOR OR RESELLER.

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(WARRANTY INFORMATION & LIMITATION OF LIABILITY continued next page)

## **WARRANTY & LIMITATION OF LIABILITY (cont.)**

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(WARRANTY INFORMATION & LIMITATION OF LIABILITY continued next page)

## **WARRANTY & LIMITATION OF LIABILITY (cont.)**

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# **FCC & INDUSTRY CANADA REGULATORY COMPLIANCE**

## **Part 15**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced technician for help.

## FCC RF EXPOSURE INFORMATION

In August 1996 the Federal Communications Commission (FCC) of the United States with its action in Report and Order FCC 96-326 adopted an updated safety standard for human exposure to radio frequency electromagnetic energy emitted by FCC regulated transmitters. Those guide-lines are consistent with the safety standard previously set by both U.S. and international standards bodies. The design of this module complies with the FCC guidelines and these international standards. The FCC ID of this unit is QIPPHS8-US. vFor more information about RF exposure, please visit the FCC website at [www.fcc.gov](http://www.fcc.gov).

The term “IC” before the certification/registration number only signifies that the Industry Canada Technical Specifications were met. The external antennas used for this module must provide a separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

## TECHNICAL SUPPORT

Technical support is available **Monday through Friday, 8:00 AM to 8:00 PM ET** excluding holidays. Before calling technical support please ensure you have read the installation guide completely. Technical support requires the caller to provide:

- **Login name**
- **Password**
- **Serial number of the 4530**

### **UPLINK Technical Support**

3330 Cumberland Blvd. Suite 700

Atlanta, GA 30339

888-9-Uplink (888-987-5465)

[www.uplink.com](http://www.uplink.com)

## INSTALLATION

### A. General Considerations

Determine where to mount the unit. Keep the following in mind:

- a. Where to obtain the best transmitted and received signal strength for the cellular radio. (If the installer does not have a very strong cellular signal in his area, he may want to first power the unit from a portable 12V DC source, switch on S4 and move the unit to a location that gives him the best signal strength.)
- b. Proximity to the alarm panel and where to route the 4530's relay output that connects to an alarm panel input.

### B. DIP Switch Settings

The 4530 has a four-position dipswitch. The dipswitches function as follows:

SWITCH NO.	SETTING	FUNCTION
S1: Default Load	OFF	Normal Operations
	ON	Load Defaults
S2: OTA Operation	OFF	OTA configuration allowed
	ON	OTA configuration blocked
S3: Reserved	OFF	N/A
	ON	N/A
S4: LED Function	OFF	Normal Operations
	ON	RSSI Measurements

(INSTALLATION continued next page)

# INSTALLATION (cont.)

## C. LEDs

Normal Mode: Upon initial power up, the 5 LEDs on the 4530 will begin to function as follows:

<b>UPLINK SECURITY LLC.</b> 3330 Cumberland Blvd Suite 700 Atlanta, GA 30339 888-987-5465 www.uplink.com		LED Status - Normal Mode
LED1 <input type="radio"/> POWER LED2 <input type="radio"/> PANEL HOOK STATUS LED3 <input type="radio"/> TROUBLE LED4 <input type="radio"/> GSM COMM LED5 <input type="radio"/> HEARTBEAT	OFF <input type="radio"/> FLASH <input checked="" type="radio"/> ON <input checked="" type="radio"/>	
<b>POWER</b>	<input type="radio"/> OFF NO DC POWER <input checked="" type="radio"/> GREEN DC POWER PRESENT <input checked="" type="radio"/> RED DC POWER LOW	
<b>PANEL HOOK STATUS</b>	<input checked="" type="radio"/> GREEN PANEL ON-HOOK <input checked="" type="radio"/> GREEN PANEL OFF-HOOK	
<b>TROUBLE</b>	<input checked="" type="radio"/> GREEN OUTPUT RELAY NORMAL <input checked="" type="radio"/> RED OUTPUT RELAY OFF-NORMAL	
<b>GSM COMM</b>	<input checked="" type="radio"/> GREEN UNIT REGISTERED ON DATA NETWORK <input checked="" type="radio"/> GREEN WAITING FOR ACK FROM CS <input checked="" type="radio"/> RED UNIT NOT REGISTERED <input checked="" type="radio"/> G <input checked="" type="radio"/> G <input checked="" type="radio"/> RED UNIT REGISTERED ON SMS NETWORK ONLY	
<b>HEARTBEAT</b>	<input checked="" type="radio"/> GREEN Normal Operation <input checked="" type="radio"/> RED S1 ON AFTER RESET	

00-25593-026rA

(INSTALLATION continued next page)

## INSTALLATION (cont.)

RSSI Mode: When the 4530 is placed in Received Signal Strength Indicator (RSSI) Mode by turning Dipswitch S4 to ON, the five LEDs indicate the follow signal strength information:

RECEIVED SIGNAL STRENGTH	LED1	LED2	LED3	LED4	LED5	OFF	FLASH	ON
>=-60dBm	○	●	●	●	●	GREEN		
	○	●	●	●	●	GREEN		
	○	●	●	●	●	GREEN		
	○	●	●	●	●	GREEN		
	○	●	●	●	●	GREEN		
>=-70dBm	○	○	●	●	●	GREEN		
	○	○	●	●	●	GREEN		
	○	○	●	●	●	GREEN		
	○	○	●	●	●	GREEN		
	○	○	●	●	●	GREEN		
>=-80dBm*	○	○	○	●	●	GREEN		
	○	○	○	●	●	GREEN		
	○	○	○	●	●	GREEN		
	○	○	○	●	●	GREEN		
	○	○	○	●	●	GREEN		
>=-90dBm	○	○	○	○	●	GREEN		
	○	○	○	○	●	GREEN		
	○	○	○	○	●	GREEN		
	○	○	○	○	●	GREEN		
	○	○	○	○	●	GREEN		
>=-100dBm	○	○	○	○	○			
	○	○	○	○	○			
	○	○	○	○	○			
	○	○	○	○	○			
	○	○	○	○	○			
>=-110dBm	○	○	○	○	○			
	○	○	○	○	○			
	○	○	○	○	○			
	○	○	○	○	○			
	○	○	○	○	○			
No Signal -All LED's Off								
*Recommended RSSI								

GOOD

MINIMUM ACCEPTABLE

UNACCEPTABLE

(INSTALLATION continued next page)

## INSTALLATION (cont.)

### D. Locating and Installing the 4530

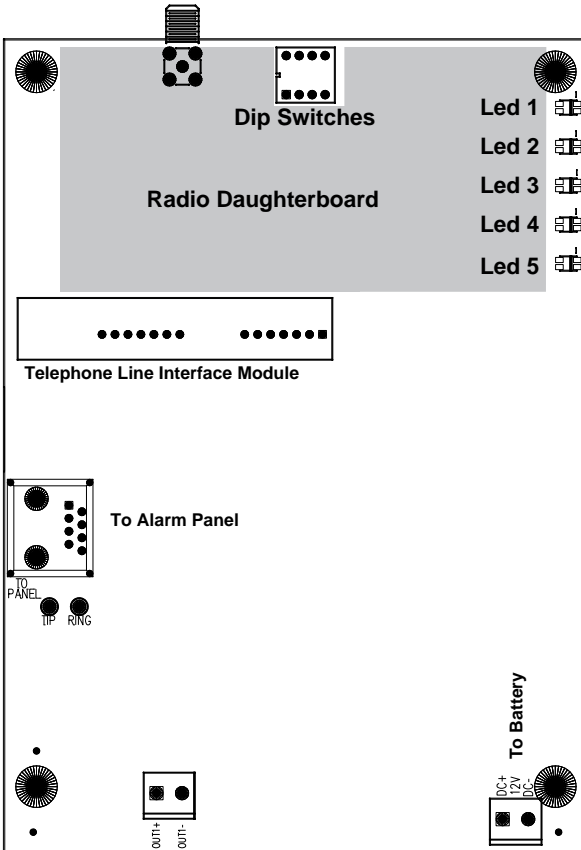
The 4530 is housed in a plastic enclosure. The installer needs to supply DC power from the panel via the AUX output, or battery, via a separate DC power source. Input DC current is listed on page 23.

After carefully considering all of the issues outlined in Installations - General Considerations, page 12, proceed as follows:

1. Separate the top and bottom of the enclosure by depressing the tab on the bottom of the unit and then tilting the bottom of the plastic top outward and up.
2. Connect the antenna that is supplied with the 4530. The Antenna supplied may differ from the ones depicted in the figures in this manual.
3. Go to the red, 4-position Dipswitch as shown in Figure 1 and set the dipswitch as appropriate for this installation. (See DIP Switch Settings, page 12.)
4. Place Dipswitch #4 (S4) in the ON position. The LEDs are now operating in RSSI Mode. Locate a good mounting position based on a good Received Signal Strength Indication (RSSI). **It is recommended that the installation location demonstrate an RSSI of at least -80 dBm (two solid green LEDs).** The minimum acceptable RSSI is -90 dBm (1 solid green LED).

(INSTALLATION continued next page)

## INSTALLATION (cont.)



L

FIGURE 1: Model 4530 PC Board Details

(INSTALLATION continued next page)

## INSTALLATION (cont.)

5. Position the bottom of the 4530 enclosure where it will be installed. Use four (4) #6 screws and mount the unit using the four holes in the enclosure's plastic bottom. The 4530's dimensions are shown in Figure 2.

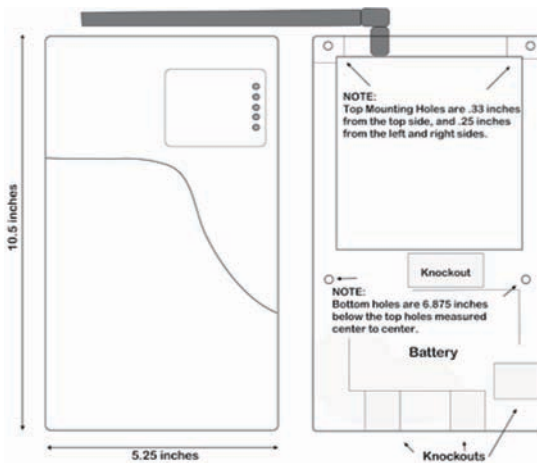


FIGURE 2: Inside & Outside Mounting Dimensions for the 4530

6. Make sure that the unit's antenna is connected.
7. Connect the positive (+) and negative (-) terminals of the 12V DC power supply to terminals DC+ and DC - respectively on the 4530.
8. Double check to make sure that the RSSI is still showing a good signal strength level.
9. Before connecting the alarm panel and the 4530, first:
  - a. Return Dipswitch #4 (S4) to the OFF position.
  - b. Disconnect the Positive and Negative connections to the DC power source.

**CAUTION: Incorrect Connections May result in Damage to the Unit**

(INSTALLATION continued next page)

## INSTALLATION (cont.)

### E. Connecting the 4530 to the Alarm Panel

**IMPORTANT: Make all of the connections to the 4530 in the powered down state. Once all of the connections have been established, turn power on.**

1. First, remove DC power from the 4530, and then proceed as follows:

#### 2. Panel Connections

Connect the alarm panel's telephone output to the 4530 with an appropriate cable. On the 4530's side, the cable should use an RJ45 plug and be connected into Jack JP3.

#### 3. Output

The 4530 has one relay output that can be used to activate an input on the alarm panel or for other local purposes. Decide on how to use this output (see section 6. Programming) then wire it from the terminal strip to the external panel or device:

Output #1 Terminals: OUT1+ and OUT1-

The default state for this Output is as follows:

OUTPUT	DEFAULT STATE	DEFAULT DEFINITION
#1	Configurable - normally closed	Loss of cellular service

See Figure 3 as an example of how to connect the 4530 to the alarm panel.

(INSTALLATION continued next page)

## INSTALLATION (cont.)

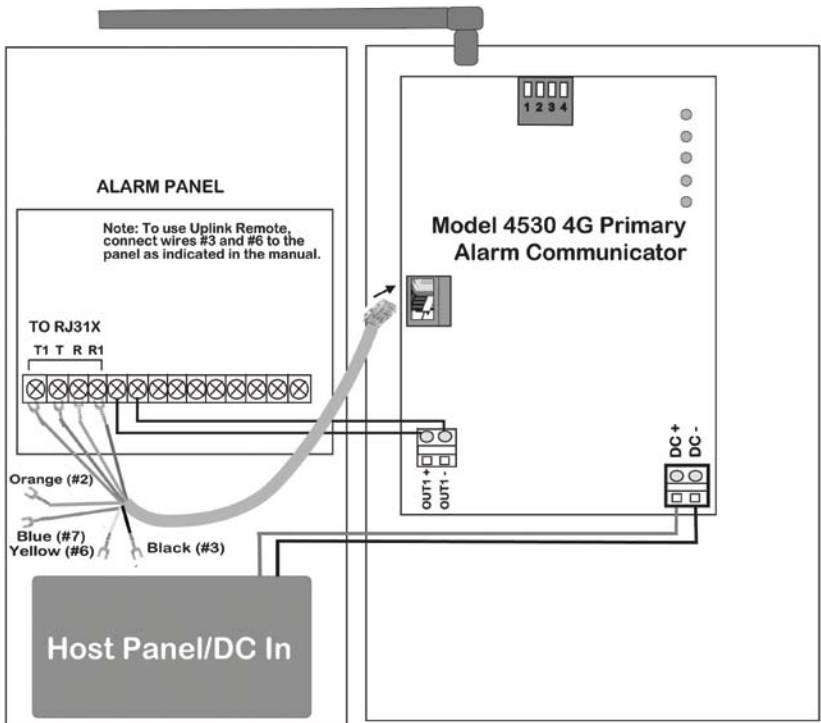


FIGURE 3: Connections between the 4530 and the Alarm Panel

(INSTALLATION continued next page)

## INSTALLATION (cont.)

### F. Activating the 4530

The 4530 is programmed OTA (Over-the-Air) by accessing the Uplink Dealer website or by calling Uplink Customer Service at **1-888-9UPLINK** (1-888-987-5465).

#### **New Dealer Enrollment:**

For new dealers/customers, you must first establish an account with Uplink by visiting the Uplink website ([www.uplink.com](http://www.uplink.com)).

1. Enter the Login Name and Password. Wait about 20 seconds for the next web page to completely load.
2. Select **“Activate Unit”** from the menu choices.
3. Answer **“Yes”** to the question **“I have read and I accept the terms of the Activation Agreement”**.
4. Enter the device serial number and select **“Activate”**.
5. Enter all appropriate customer information.
6. From the **Central Station Notification** drop down menu, select the appropriate format.
7. Enter the appropriate Central Station phone number and account number.
8. Configure the device to meet your install needs.
9. Select **“Update”**.
10. From the **“Programming”** drop down menu, select **“Program Unit Over the Air”**.
11. Set the appropriate Dialer Protocol, select Send.
12. From the **“Test”** drop down menu, select **“Send Status Request Signal”**.
13. Activation is complete once a successful test message is displayed. From the **“Signal History”** drop down menu, select **“Events Received”**.

(INSTALLATION continued next page)

## INSTALLATION (cont.)

### G. Programming and Central Station Reporting

The following parameters can be configured from the dealer website “**Programming**” Menu:

**1. Automated and On Demand Test Signals** (Default = Weekly)

The Automated Test signal interval can be changed from the dealer website to monthly, weekly, or daily. In addition, an immediate test signal can be generated.

**2. Activate/Deactivate Output Relay**

Output relay #1 can be activated or deactivated from the dealer website.

This feature allows the installer to test the correct operation of this output when it is connected to the alarm panel.

**3. Normal State of Output Relay** (Default = #1 Energized Closed)

The normal state of the Output Relay can be changed from the dealer website.

**4. Output Relay 1 Mapping** (Default = #1 Loss of Cellular Service)

There are 6 Trouble states that can be declared by the 4530, and each of these states can be programmed from the dealer website to activate the Output Relay.

The 6 Trouble states are:

- Low DC Input Voltage
- Cable Supervision Trouble (Panel to 4530)
- Loss of Cellular Service
- 4530 Disabled (via website command)
- Failure to receive ACK from Central Station
- Watchdog Circuit Trouble

**5. Send Trouble Condition to Central Station “Specific Event Reporting”** (Default = Low DC Input Voltage)

Any or all of the Trouble Conditions detectable the 4530 can be programmed to report that condition (and its Restoral) to the monitoring Central Station.

(INSTALLATION continued next page)

## INSTALLATION (cont.)

See Appendix A for a list of Contact ID format, SIA format and Modem I/e/IIIa/IIIa<sup>2</sup> event codes generated by the 4530 that can be sent to the central station receiver.

See Appendix B for a list of the default event codes transmitted by the 4530.

The 4530 supports Pulse 4/2 with any combination of :10, :20, or :40 PPS. Two round or checksum, 1400 Hz or 2300 Hz handshake.

### H. Default Event/Email Messages

Email and Text Messaging will only be available for Status events (e.g., Low DC input Voltage, Test, etc.). Events transmitted from the premises alarm panel via the 4530's Primary function will not be sent out by email or text messaging.

### I. Completing the Installation and Testing

Once the physical installation is completed, the unit is activated from the dealer website, and programming changes are made, test the 4530 along with the alarm panel to ensure everything is functioning properly.

#### Test the following:

- a. Check to see that all 5 LEDs are green. The first 4 LEDs should be solid green, and the 5th LED should be flashing green.
- b. Trip an alarm on the alarm panel. Check that the 4530 has correctly intercepted the panel's digital dialer output and reported the event to the central monitoring station.
- c. If using the Output Relay on the 4530 go back to the dealer website and use the Switch Output Relay command to test the relay. Make sure the premises alarm panel properly detects the relay's change of state and that it reports the proper event to the monitoring central station.
- d. Finally, remove DC Power from the 4530 and trip an alarm on the premises alarm panel. Confirm that the panel detects loss of its communication path and alarms appropriately (local).
- e. Reconnect DC Power to the unit and verify proper handling of the alarm from the panel.

# SPECIFICATIONS

<b>DIGITAL DIALER INTERFACE</b>	
Format Compatibility	Contact ID, SIA, Modem IIe/IIIa/IIIa <sup>2</sup> , Pulse 4/2 (:10, :20, or :40 PPS)
Connector	RJ45 and screw terminals
Simulated telco line voltage	48 V DC On-Hook
Dial tone	350 + 440 Hz +/- 0.2%
Receive level minimum	- 45 dBm, 20 dBm S/N
Line impedance	600 ohms
Ringer Equivalence	0.3 REN
Mode	Loop start. 26 mA typical
<b>POWER REQUIREMENTS</b>	
Input Voltage	12V DC
Normal Current (On Hook)	125 mA
Maximum Current (Off Hook)	600 mA
Radio during Transmission - Average Current - Peak Current	215 - 250 mA 1.3 - 1.5 A
UL Power Requirements	Uninterruptable Class 2 power supply 12V DC/1.2 A

(SPECIFICATIONS continued next page)

## **SPECIFICATIONS (cont.)**

<b>RADIO</b>	
Frequencies	850/1900 MHz
Sensitivity	-106 dB (typical)
<b>ENVIRONMENTAL</b>	
Temperature Range	-30° to +70° C
Humidity	0 to 95% non-condensing
<b>PHYSICAL</b>	
Height	2.5 inches
Width	5.4 inches
Depth	10.5 inches

# APPENDIX A: CONTACT ID, SIA EVENT, AND MODEM IIe/IIIa/IIIa<sup>2</sup> CODES

Following is a list of event codes that can be sent to the central station receiver for events generated by the 4530:

EVENT DESCRIPTION	CONTACT ID EVENT CODE	SIA DC-03 EVENT CODE	MODEM IIe/ IIIa/IIIa <sup>2</sup>
AC Fail	E301	AT	48
AC Restoral	R301	AR	49
Alarm (generic)	E140	UA	10
Burglary Alarm	E130	BA	10
Burglary Restoral	R130	BR	12
Burglary Tamper	E137	TA	10
Burglary Tamper Restoral	R137	TR	12
Closing	R400	CL	32
Fire Alarm	E110	FA	0B
Fire Restoral	R110	FR	0E
Fire Supervisory	E200	FS	11
Fire Supervisory Restoral	R200	FJ	12
High Temperature	E158	KA	10
High Temperature Restoral	R158	KR	12
Holdup Alarm	E122	HA	10
Holdup Restoral	R122	HR	12
Low Battery	E302	YT	4B
Low Battery Restoral	R302	YR	4C
Low Temperature	E159	ZA	10

(APPENDIX A continued next page)

**APPENDIX A:  
CONTACT ID, SIA EVENT, AND  
MODEM IIe/IIIa/IIIa<sup>2</sup> CODES  
(cont.)**

<b>EVENT DESCRIPTION</b>	<b>CONTACT ID EVENT CODE</b>	<b>SIA DC-03 EVENT CODE</b>	<b>MODEM IIe/ IIIa/IIIa<sup>2</sup></b>
Low Temperature Restoral	R159	ZR	12
Medical Alarm	E100	MA	10
Medical Restoral	R100	MR	12
Opening	E400	OP	2F
Panic Alarm	E120	PA	10
Panic Restoral	R120	PR	12
Phone Fail	E350	LT	44
Phone Restoral	R350	LR	45
Radio Supervision Lost	E355	YC	11
Radio Supervision Restoral	R355	YK	12
Restoral (generic)	R140	UR	12
Service Completed	R616	YZ	12
Service Required	E616	YX	11
Telco Line Fail	E350	LT	44
Telco Line Restoral	R350	LR	45
Test	E602	TX	33
Trouble (generic)	E300	UT	11
Trouble Restoral (generic)	R300	UR	12
Trouble, System Peripheral	E330	ET	11
Trouble Restoral, System Peripheral	R330	ER	12

## APPENDIX B: 4530 DEFAULT EVENT CODES

The 4530 is defaulted to send both the Alarm/Trouble condition and the Restoral condition for all of the events listed below. Reporting of individual events can be controlled from the Dealer Website.

Following is a list of the default event codes sent by the 4530:

EVENT DESCRIPTION	CONTACT ID EVENT CODE	SIA DC-03 EVENT CODE	MODEM lle/llla/llla <sup>2</sup>	ZONE NO. REPORTED
Low DC Voltage	E302	YT	4B	240
Low DC Restoral	R302	YR	4C	240
Cable Supervision Trouble	E616	YX	11	242
Cable Supervision Restoral	R616	YZ	12	242
Cellular Service Loss	E355	YC	11	243
Cellular Service Restoral	R355	YK	12	243
4530 UNIT DISABLED	E616	YX	11	245
4530 UNIT RESTORAL	R616	YZ	12	245
WATCHDOG CIRCUIT TROUBLE	E616	YX	11	246
Watchdog Circuit Restoral	R616	YZ	12	246
Test	E602	TX	33	000

# 4G PRIMARY ALARM COMMUNICATOR

## UPLINK 4530 4G PRIMARY ALARM COMMUNICATOR INSTALLATION, OPERATION AND PROGRAMMING GUIDE

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