This module is a four-wire powered SDI2, SDI, or Option bus device that provides two-way communication over commercial cellular networks using a plug-in communicator.

1 | Overview

2 | SDI2 address settings

This module is a four-wire powered SDI2, SDI, or Option bus device that provides two-way communication over commercial cellular networks using a plug-in communicator.

2.1 | Set the module address

The module address switch determines the bus address of the device. Set the address switch per the control panel configuration. If multiple B450 devices reside on the same system, each B450 module must have a unique system address, and cannot share the same address value. Figure 2.1 shows the address switch settings for address 01. Refer to Table 2.1 for panel-specific settings.

![Figure 2.1: Address switch set to address 1](image)

<table>
<thead>
<tr>
<th>Control Panels</th>
<th>Switch Position</th>
<th>Control Panel Address</th>
<th>Bus Type</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB or SMS configuration setting</td>
<td>0</td>
<td>n/a</td>
<td>Any</td>
<td>Change Configuration</td>
</tr>
<tr>
<td>B9512G/B9512E</td>
<td>1</td>
<td>1</td>
<td>SDI2</td>
<td>Automation, RPS, or Reporting</td>
</tr>
<tr>
<td>B9512G/B9512E</td>
<td>2</td>
<td>2</td>
<td>SDI2</td>
<td>Automation, RPS, or Reporting</td>
</tr>
<tr>
<td>D9412GV4/D7412GV4/D721GV4/D912GV4</td>
<td>4</td>
<td>46</td>
<td>SDI1</td>
<td>RPS or Reporting</td>
</tr>
<tr>
<td>D9412GV4/D7412GV4/D721GV4/D912GV4</td>
<td>5</td>
<td>50</td>
<td>SDI1</td>
<td>RPS or Reporting</td>
</tr>
<tr>
<td>AMAX 2000/2100/3000/4000 CMS 6/8/40 Easy Line v3.4</td>
<td>6</td>
<td>134</td>
<td>Option</td>
<td>RPS or Reporting</td>
</tr>
<tr>
<td>FTD-7024 v1.08</td>
<td>9</td>
<td>250</td>
<td>Option</td>
<td>RPS or Reporting</td>
</tr>
</tbody>
</table>

For D9412GV4/D7412GV4/D721GV4/D912GV4 configurations, SDI bus connection is the recommended configuration option, but SDI bus configuration is also supported.

The FTD-7024 must be a firmware version 1.06 or greater to configure using bus address 134.

![Callout – Description](image)

1 | SIM card
2 | B44x cellular communication module (available separately)
3 | B450

3 | Installation

Perform the following steps to install the module.

3.1 | Insert the module into the B450/B450-M

Insert the communication module into the slot of the B450, depending on your communication module (one with a SIM card, or one without). Refer to Figure 3.1.2.

![Figure 3.1.2: Inserting the communication module](image)

3.2 | Install the module

Mount the module into the enclosure’s 3-hole mounting pattern using the supplied mounting screws, and secure the antenna onto the enclosure. Mount the module into the interior side of the enclosure. Refer to Figure 3.2.

![Figure 3.2: Mounting the module](image)

3.3 | Wire to the control panel

When wiring a module to a control panel, you can use either the module’s terminal strip labeled with PWR, A, B, and COM or the module’s interconnect wiring connectors (wire included). Interconnect wiring parallels the PWR, A, B, and COM terminals on the terminal strip. Figure 3.1 indicates the location of both the terminal strip and the interconnect connect connectors on the module.

![Figure 3.3: Installing the module](image)

3.4 | Connect to the control panel

Connect the module to the control panel using either the terminal strip wiring or interconnect cable to wire to the control panel. Do not use both.

4 | Configuration

You can configure the module using one of the methods described in this section for your control panel type.

4.1 | Plug and play configuration

When installing under the following conditions, the module needs no further configuration to communicate:

- AES Encryption is not required.
- Low signal delay can be no more than 200 sec.

4.2 | Configuring with SDI2/Option bus control panels

An SDI2/Option bus-compatible control panel automatically configures a connected module.

1. Power off the compatible control panel.
2. Set the address switch to the correct address for the control panel (SDI2 control panels use address 1 or 2, option bus control panels use address 134 or 250).
3. Connect the module to the control panel bus and apply power.
4. Program the control panel communication settings using RPS for SDI2 control panels, A-Link Plus for option bus control panels, or the keypad.

4.3 | Configuring with SMS

The module supports configuration by SMS. You can send SMS via mobile phone to the module. For more information, refer to the B450 Installation and Operation Guide.

NOTICE!

Power up the module with the address switch set to the desired bus. When ready to program using SMS, turn the switch to position 0. When done programming, turn the switch back. Failure to turn the address switch to the previous setting will result in a troubled condition.
Table 5.1: Heartbeat LED Descriptions

<table>
<thead>
<tr>
<th>LED Pattern</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>Normal state: Indicates communication error with the control panel.</td>
</tr>
<tr>
<td>Orange</td>
<td>Communication Error State: Indicates a bus error.</td>
</tr>
<tr>
<td>Green</td>
<td>On Steady: Indicates a trouble condition exists.</td>
</tr>
<tr>
<td>Yellow</td>
<td>Off: Troubleshooting LED: Module is not powered, or there is a failure in the module. Check for proper installation.</td>
</tr>
</tbody>
</table>

Table 5.2: RX/TX LEDs Description

<table>
<thead>
<tr>
<th>LED Pattern</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RX (Receive) Flashing</strong></td>
<td>Occurs when the module receives a message from over-the-air.</td>
</tr>
<tr>
<td><strong>TX (Transmit) Flashing</strong></td>
<td>Occurs when the module sends a message to over-the-air.</td>
</tr>
</tbody>
</table>

6 | Show the firmware version
To review the firmware version using an LED flash pattern, tamper the module. Refer to Section 2 for flash patterns.

- If the optional tamper switch is installed:
  - With the enclosure door open, close the tamper switch.
  - Momentarily short the tamper pins (using a jumper or screwdriver)

When the tamper switch is activated (open to closed), the heartbeat LED stays OFF for 3 sec indicating the firmware version. The LED pulses the major, minor, and micro digits of the firmware version, with a 1 sec pause after each digit. The following is an example: The version 1.4.3 would be shown as LED flashes:

- **1** *** 3 ** (3 second pause) **1** *** 3 ** (3 second pause, then normal operation).

7 | Cellular compatibility
Use the following table for cellular interface compatibilities.

<table>
<thead>
<tr>
<th>Compatibility</th>
<th>Feature Supported</th>
<th>Data bus wire length</th>
<th>Maximum Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>B450 with B440/B441/B442/B443/B444</td>
<td>Y</td>
<td>22 AWG (0.65 mm)</td>
<td>12 m (40 ft)</td>
</tr>
<tr>
<td>B450 with B440/B441/B442/B443/B444</td>
<td>Y</td>
<td>18 AWG (1.0 mm)</td>
<td>30 m (100 ft)</td>
</tr>
<tr>
<td>B450 with B440/B441/B442/B443/B444</td>
<td>Y</td>
<td>16 AWG (1.5 mm)</td>
<td>40 m (138 ft)</td>
</tr>
<tr>
<td>B450 with B440/B441/B442/B443/B444</td>
<td>Y</td>
<td>12 AWG (2.0 mm)</td>
<td>122 m (400 ft)</td>
</tr>
</tbody>
</table>

Using a separate UL listed power supply, such as the B520 Auxiliary Power Supply Module, connected to the B450 within the specification listed above, the wire distance can be extended up to 300 m (1000 ft).

Table 5.3: Summary of firmware version

<table>
<thead>
<tr>
<th>Enclosure</th>
<th>Communication Programs</th>
<th>Relative Humidity</th>
<th>Operating Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>B10 enclosure</td>
<td>Y</td>
<td>Up to 93% non-condensing</td>
<td>0°C to +49°C C (+32°F to 120°F)</td>
</tr>
<tr>
<td>B11 enclosure</td>
<td>Y</td>
<td>Up to 93% non-condensing</td>
<td>0°C to +49°C C (+32°F to 120°F)</td>
</tr>
</tbody>
</table>

The B450 reporting timing category of transmission path is dependent on the associated control panel. The maximum possible timing category for this device is SP4. Refer to the control panel’s documentation for timing parameter values.

Temporary loss of communication may be caused by static when using any of the above enclosures.

 NOTICE!
USB connection via the USB cable is only used for temporary configuration programming.

8 | Specifications

- **Data bus wire length**: Maximum Distance
  - 22 AWG (0.65 mm): 12 m (40 ft)
  - 18 AWG (1.0 mm): 30 m (100 ft)
  - 16 AWG (1.5 mm): 40 m (138 ft)
  - 12 AWG (2.0 mm): 122 m (400 ft)

Using a separate UL listed power supply, such as the B520 Auxiliary Power Supply Module, connected to the B450 within the specification listed above, the wire distance can be extended up to 300 m (1000 ft).

Table 5.4: Summary of firmware version

<table>
<thead>
<tr>
<th>Control panel compatibility</th>
<th>IP Event Reporting</th>
<th>Data bus wire length</th>
</tr>
</thead>
<tbody>
<tr>
<td>B450 with B440/B441/B442/B443/B444</td>
<td>Y</td>
<td>22 AWG (0.65 mm)</td>
</tr>
<tr>
<td>B450 with B440/B441/B442/B443/B444</td>
<td>Y</td>
<td>18 AWG (1.0 mm)</td>
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<td>Y</td>
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</tr>
</tbody>
</table>


Use the serial number located on the product label and refer to the Bosch Security Systems, Inc. product manufacturing dates must be treated accordingly.

Bosch Security Sytems, Inc. product manufacturing dates must be treated accordingly.

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Quick Start Guide

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