What is the PHASTLink Interface?

The PHASTLink interface allows the Napco Gemini GEM-P9600 control panel to function as a fully integrated device in a PHAST Landmark™ system. This level of integration allows drag-and-drop programming of device features in Landmark Designer software, active data display on system keypads, and ease of installation and use.

PHASTLink provides a powerful and flexible way to connect devices to a control network that can span large homes and even commercial installations. PHASTLink uses standard physical hardware found in 10Base-T Ethernet networks, like Category 5 wire and RJ-45 connectors, and is compatible with several industry-standard structured wiring specifications and standards.

PHASTLink also provides individual dynamic device addresses, high-speed data transmission, and extended cable lengths using advanced hub technology. Typically up to 10 devices may be chained together in a single run of up to 1,000 feet. An unlimited number of individual appliances may be connected via multiple hubs.

At the core of PHASTLink is Echelon Neuron™ technology, providing tremendous potential for programmability, functionality, and expandability. Echelon components are manufactured by Motorola and Toshiba, and provide unmatched versatility and reliability to home automation when combined with PHASTLink protocols and Landmark software tools.

PHASTLink Interface Communications

PHASTLink communication with the Napco Gemini GEM-P9600 control panel is handled by a PHAST serial access module (SAM), which has been configured to ensure compatibility with the Gemini panel. The SAM is connected to the GEM-RS232 Serial Converter, which connects to the serial port of the Gemini Panel. The serial cable uses DB-9 connectors at the SAM and the GEM-RS232 and an RJ-11 cable connects the RS232 to the Gemini board. The SAM and the GEM-RS232 may be installed inside the Gemini panel cabinet.
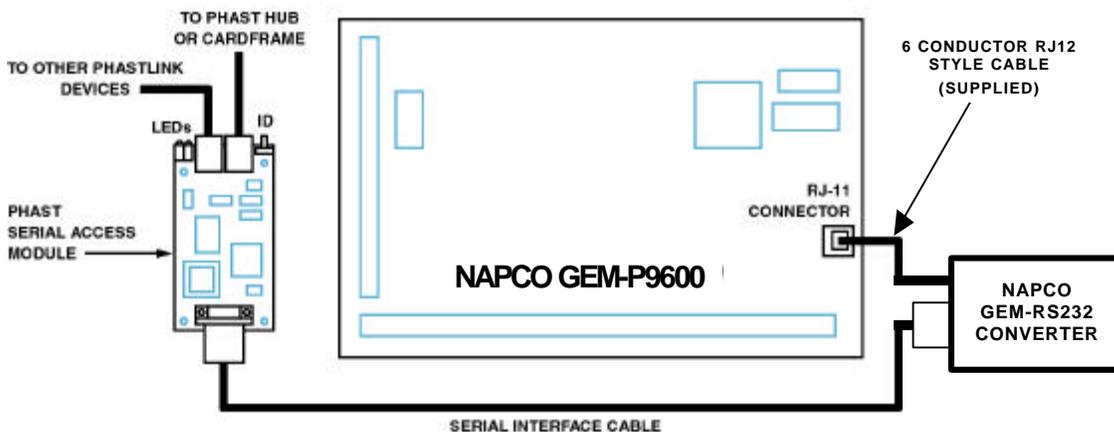
The serial interface parameters are: Baud = 9600, Parity = None, Stop Bits = 1, and Data Bits = 8.

Note: The GEM-P9600 must have the EPROM included in the GEM-PHAST PAK installed in it. This special home automation EPROM is identified by the version number followed by the letters HA. For example, V11C HA.

Hardware Installation and Configuration

WARNING! DANGEROUS VOLTAGE!
To reduce the risk of serious injury or death, turn all power off before installing this equipment.

Caution:
Many electronic components are static sensitive. If possible, install these components in a static-free work environment. Otherwise, touch a grounded metal object to discharge any static charge before handling these components. **Do not** touch any live electrical conductors.

1. Before connecting and configuring the PHASTLink interface, you must install, program, and test the Napco Gemini system according to the manufacturer's instructions.

2. Turn off power to the Gemini panel.

3. Connect the GEM-RS232 module to the Gemini panel with the supplied RJ-11 style modular to modular cable.

4. Connect the DB-9 connector of the serial cable to the serial connector on the GEM-RS232 module.

5. Connect the DB-9 connector on the other end of the serial cable to the serial connector on the SAM module.

6. Connect the SAM to the Landmark system with a PHASTLink cable, using either of the RJ-45 PHASTLink ports on the SAM. As with any other PHASTLink-compatible devices, additional devices may be daisy-chained from the SAM.

7. Turn on the power to the Gemini panel. The **red** LED on the SAM should illuminate. The **green** LED will flash every two seconds until it establishes contact with a PHAST Master Control Unit (MCU), at which point the greed LED will shut off. The **green** LED will then flash whenever data is sent and received, indicating that the Gemini panel is communicating with the PHASTLink network.

8. Go to "Landmark Software Configuration and Programming."

Landmark Software Configuration

This is only a general outline of the steps used in Landmark Designer to configure and program the Napco Gemini panel as a Landmark system device. Refer to the Landmark online help for more detailed instructions.

1. Start the Landmark Designer program and open the appropriate project file.

2. Look in Files > Supported Manufacturers to make sure that the NAPCO products are included in the list of supported manufacturers. If not, check the box next to NAPCO and add it to the list.

3. Obtain a list of NAPCO sensors and other devices that have been (or will be) configured in the NAPCO panel.

4. Select the NAPCO tab in the Device toolbar and drag an icon for each of these sensors or other devices onto the appropriate rooms in the project. Do this in the same manner as for other Landmark system devices.

5. Have Landmark Designer "Specify Hardware" for the project after adding the NAPCO sensors or devices.

6. Carry out the network assignment steps for the NAPCO alarm panel, as follows:

   a. Click on the Network task button.

   b. Select the Attachments tab.

   c. The NAPCO panel should be listed in the Unattached Software list box and the Unattached Hardware list box.

      Note: The NAPCO alarm panel and the SAM module must be connected and powered-up for the NAPCO panel to appear in the Unattached Hardware list box.

   d. Select NAPCO Panel in the Unattached Software list box.

   e. Click the Identify button (or check the Auto Attach check box). The NAPCO panel should appear in the Attached Hardware list box.

7. Bring up the Properties window for each sensor or device that you added from the NAPCO device tab and select the Configuration tab. Make any required configuration changes for that particular device. Configuration options include:

   - Zone Number – This represents the logical zone programmed to correspond to the physical input contact of the NAPCO panel. These can be auto-numbered or manually entered.

   - Open/Closed – This indicates whether the zone contacts are normally open or normally closed for default/ready status.

   - Master Security Code – Each NAPCO panel has a unique Master Security Code. This code must be entered in this field to establish proper communication with the panel.

8. Test the NAPCO panel from a NAPCO device's Control tab.

   Click on the Arm or Disarm buttons and make sure that the panel actually arms or disarms. This will determine if end-to-end communication is working.

   If the panel fails to arm or disarm, or if any events in the zone(s) going into the alarm panel are not working, check the following:

   - Check the network log and make sure that the Master Security Code is correct.

- Check the LED status on the SAM module. The SAM's green LED indicates that it is powered up. If this LED is not on, check the cable connection. Also, follow the cable back to the PHASTLink hub or cardframe and check the connection at that end.
- Make sure that the correct NAPCO chip is in installed. It must be Vxx HA. "HA" indicates that it is a home automation chip.
- If a PHAST touchpanel displays an "Out of System" message, unplug the SAM from the network and plug it back in. This should fix the problem in a few seconds.

9. To program the device, click the Program button. The Programming window appears. Refer to Programming the Landmark System for general programming instructions. The following section, Programming Options, lists the available programming features for this device.

10. Make any keypad or touchpanel menu programming changes associated with the NAPCO alarm panel in the same manner as for other Landmark System devices.

11. After making any additional changes, test the NAPCO alarm panel again from a PHAST keypad or touchpanel or from a NAPCO device's Control tab.

From the Control tab:

a. Make sure the this device and any associated devices have been installed, their properties configured, the control devices specified by Landmark Designer, and that all devices have been programmed.

b. Use the controls on the Control tab sheet as if it were a remote control. Make sure the device responds correctly to the commands. There are buttons for Arm and Disarm on the Control tab.

If you experience problems, refer to the Technical Support section.

Programming Options in the Programming Window

Events

All events for sensors are handled through the NAPCO panel, which is found in the Equipment Room. Events correspond to zones in the security system. The Event dialog box has a drop-down list box to allow the selection of the zone, and an option to select Protected On or Protected Off. The following events are supported:

- Zone – This indicates the zone in which the event will take place.
- Status – This refers to whether the zone is going into alarm or becoming secure again.
- Protected – This refers to the state of the panel, which is either armed or disarmed.

Commands

Only two commands are possible:

- Arm
- Disarm

Conditionals

Conditionals are programmed on the NAPCO panel itself. Each zone can be checked to see if the status is either:

- Secure
- In Alarm

Menus

No menu items can be auto-generated for the NAPCO panel.

Variables

No variables are supported.

PHASTLink Cable Information

This section contains information that you will need to make PHASTLink cables, plus general information on connecting PHASTLink devices.

PHASTLink cables are used to connect all PHASTLink-compatible devices, including keypads, dimmers, J-box IR devices, amplifiers, audio switches, etc.

PHASTLink uses a standard 10Base-T connection (i.e. Category 5 wire and RJ-45 connectors). The wire should be connected in the standard manner, as shown in the following figure. If a consistent color code is used, wiring problems will be minimized.

RJ-45 Socket   RJ-45 Plug

Pin #	Wire Color	Polarity	Function
1	White/Green	+	Transmit
2	Green	–	Transmit
3	White/Orange	–	Mic
4	Blue	–	Ground
5	White/Blue	+	12VDC
6	Orange	+	Mic
7	White/Brown	+	Receive
8	Brown	–	Receive
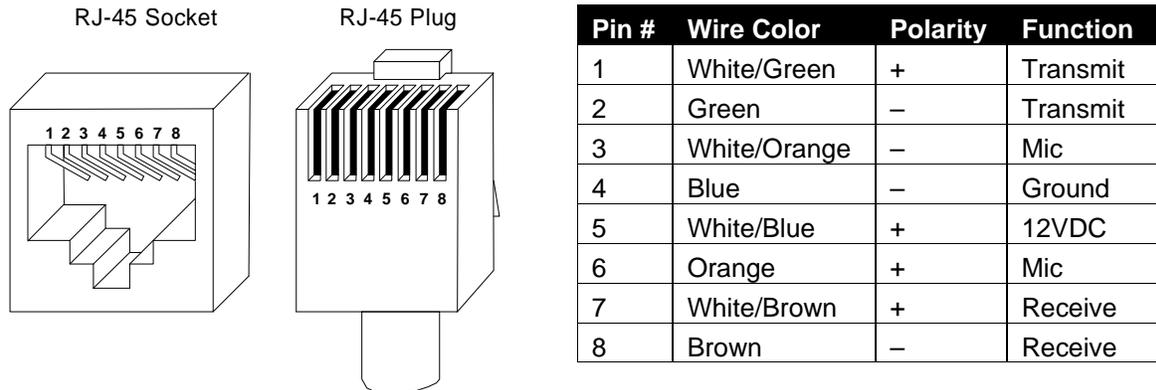
It is important that the correct pairing is observed. Transmit, receive, and mic need to be on twisted pairs. Splitting pairs (e.g., using a white/green wire with a blue/white wire for transmit) will result in increased crosstalk, and may result in bus failure or noise on the intercom.

If a PLB-CF10 cardframe is used, a 15-port hub is built into the cardframe. The maximum length of wire per port is 1,000 feet. Each PHASTLink device has two RJ-45 connectors to allow multiple devices to be daisy chained on one PHASTLink port. Refer to the PLB-CF10 documentation for more detailed connection information.

The limit for each home run is 10 PHASTLink devices. Extra hubs can be added to provide additional ports.

Note: Only one PHAST keypad can be used per port, so home-run each keypad.

For optimum performance, PHAST recommends the installation of a double 120-ohm terminator in one of the RJ-45 jacks of the last device (or the only device) in a chain of PHASTLink devices.

To Other PHASTLink Devices
(up to 10 devices per home run)

Up to 15 PHASTLink Connections to a PHAST PLB-CF10 Cardframe
(add PHAST Hubs for more connections)

PHAST CARDFRAME

To build a double 120-ohm terminator:

   a. Install a 120-ohm resistor (1/4-watt or larger) between pins 1 and 2 of an RJ-45 connector.
   b. Install a 120-ohm resistor (1/4-watt or larger) between pins 7 and 8 of the same RJ-45 connector.
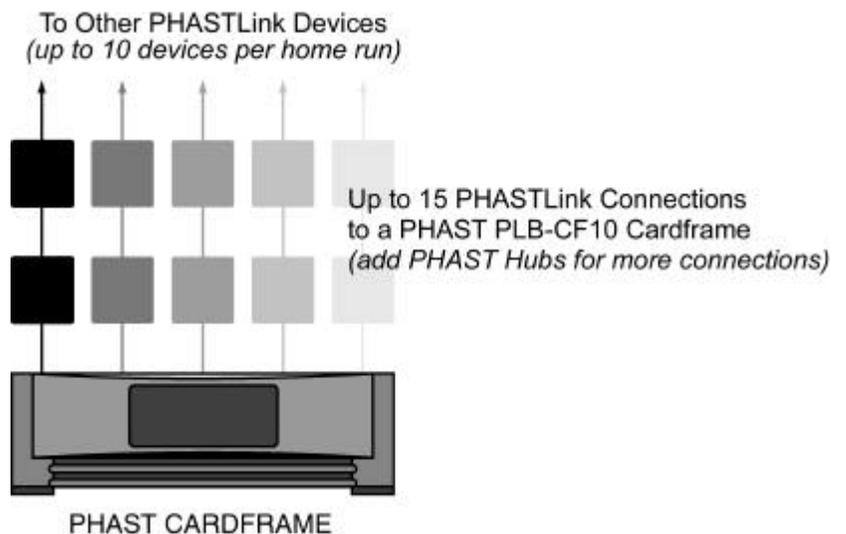
PHAST LCD keypads must connect directly to a PHAST Hub (or PHAST Microphone Hub). Due to power requirements and/or the need for a separate microphone line for each keypad, they cannot be daisy chained to other LCD keypads; they can, however be daisy chained with other PHASTLink devices.

When connecting PHAST keypads that will be used as intercoms, the Microphone Hub taps off the intercom audio signal carried on the PHASTLink cable from that keypad.

TO OTHER PHASTLINK DEVICES
(up to 10 devices per home run)

PHAST CARDFRAME OR HUB

NO

PHAST CARDFRAME OR HUB

PHASTLink devices cannot be wired in a star configuration.
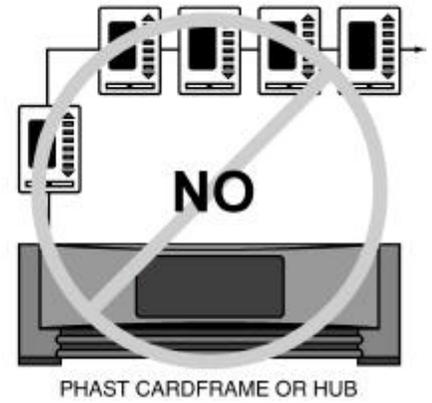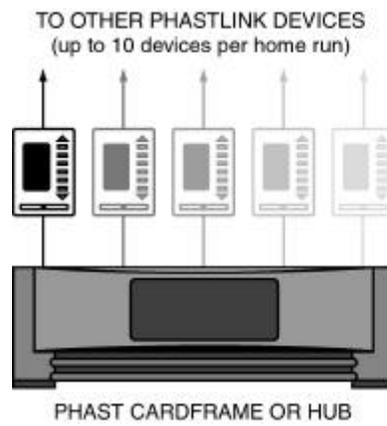
Troubleshooting

The green LED on the SAM is not illuminated.

This condition indicates that the SAM is not powered up. Check the following:

- Make sure the Landmark system is running.
- Follow the PHASTLink cable back to the PHASTLink hub or cardframe, and check the RJ-45 connections, as described in "PHASTLink Cable Information."
- Check the Network Assignments tab in the Landmark Designer software and make sure the Vantage Q System has been properly identified and logically connected.

NAPCO SECURITY SYSTEMS, INC. (NAPCO) warrants its products to be free from manufacturing defects in materials and workmanship for 12 months following the date of manufacture. NAPCO will, within said period, at its option, repair or replace any product failing to operate correctly without charge to the original purchaser or user.

This warranty shall not apply to any equipment, or any part thereof, which has been repaired by others, improperly installed, improperly used, abused, altered, damaged, subjected to acts of God, or on which any serial numbers have been altered, defaced or removed. Seller will not be responsible for any dismantling or reinstallation charges.

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Any action for breach of warranty, including but not limited to any implied warranty of merchantability, must be brought within the six months following the end of the warranty period.

IN NO CASE SHALL NAPCO BE LIABLE TO ANYONE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, EVEN IF THE LOSS OR DAMAGE IS CAUSED BY THE SELLER'S OWN NEGLIGENCE OR FAULT.

In case of defect, contact the security professional who installed and maintains your security system. In order to exercise the warranty, the product must be returned by the security professional, shipping costs prepaid and insured to NAPCO. After repair or replacement, NAPCO assumes the cost of returning products under warranty. NAPCO shall have no obligation under this warranty, or otherwise, if the product has been repaired by others, improperly installed, improperly used, abused, altered, damaged, subjected to accident, nuisance, flood, fire or acts of God, or on which any serial numbers have been altered, defaced or removed. NAPCO will not be responsible for any dismantling, reassembly or reinstallation charges.

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NAPCO RECOMMENDS THAT THE ENTIRE SYSTEM BE COMPLETELY TESTED WEEKLY.

Warning: Despite frequent testing, and due to, but not limited to, any or all of the following; criminal tampering, electrical or communications disruption, it is possible for the system to fail to perform as expected. NAPCO does not represent that the product/system may not be compromised or circumvented; or that the product or system will prevent any personal injury or property loss by burglary, robbery, fire or otherwise; nor that the product or system will in all cases provide adequate warning or protection. A properly installed and maintained alarm may only reduce risk of burglary, robbery, fire or otherwise but it is not insurance or a guarantee that these events will not occur. CONSEQUENTLY, SELLER SHALL HAVE NO LIABILITY FOR ANY PERSONAL INJURY, PROPERTY DAMAGE, OR OTHER LOSS BASED ON A CLAIM THE PRODUCT FAILED TO GIVE WARNING. Therefore, the installer should in turn advise the consumer to take any and all precautions for his or her safety including, but not limited to, fleeing the premises and calling police or fire department, in order to mitigate the possibilities of harm and/or damage.

NAPCO is not an insurer of either the property or safety of the user's family or employees, and limits its liability for any loss or damage including incidental or consequential damages to NAPCO's original selling price of the product regardless of the cause of such loss or damage.

Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusion or limitation of incidental or consequential damages, or differentiate in their treatment of limitations of liability for ordinary or gross negligence, so the above limitations or exclusions may not apply to you. This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.