SuperBus 2000 Phone Interface/Voice Module Installation Instructions

Product summary

The SuperBus 2000® Phone Interface/Voice (PIV) Module provides phone and voice functions for the Concord™ , Concord 4™, and Concord Express™ (v4) panels.

The PIV module allows installers and users to control a panel — either on-site or from a remote location — through any touch-tone telephone. Using an onboard digital voice chip, the system announces status messages through each phone and speaker connected to the module.

The PIV module also provides phone control for Concord panels with single or multiple partitions. For multiple partitions, a module can be used for each partition and connected to a separate phone line.

The module communicates with the panel through a series of bus connections and may be powered by the panel or an auxiliary 12V DC power supply with backup battery.

SuperBus 2000 vs. SuperBus

SuperBus 2000 panels auto-address module unit numbers. When the panel is powered, a unique device ID number (pre-programmed at the factory) is automatically learned by the panel. Potential identical unit number conflicts and the need to manually set DIP switches are eliminated.

Older SuperBus panels can communicate with the PIV module by manually setting the module's DIP switches.

SuperBus 2000 Panels

- Concord (v2.0-later)
- Concord 4
- Concord Express (v4)

SuperBus Panels

- Concord (v1.0-1.6)

Features

The PIV module includes the following features:

- User-adjustable, speaker volume control.
- On/Off hook detection.
- Extensive 220-plus word vocabulary.
- In-panel cabinet or optional wall mounting.
- Compatibility with Concord panels (v1.0-1.6).

Figure 1: PIV module components

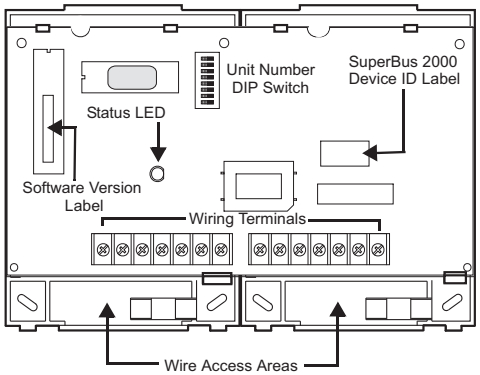


Table 1: Module component descriptions

Component	Function
Status LED	Indicates normal panel bus communications.
Unit number DIP switches	Used to manually set SuperBus unit numbers.
Wiring terminals	Provides panel, speaker, and phone connections.
SuperBus 2000 device ID number label	Identifies SuperBus 2000 device ID numbers.
Software version label	Identifies installed module software versions.

Installation guidelines

When installing the PIV module, use the following guidelines:

- Concord systems can accommodate one PIV module per partition. For multiple partition installations, each module must be connected to a separate phone line and speaker.
- Give your customer the ability to unplug their system by connecting the phone line with an RJ-31X jack. This ensures your customer can unplug the system in cases of malfunction where they must also use the phone.
- Mount the module inside the panel cabinet or use the optional plastic wall-mount housing (part no. 60-800).
- Use four-conductor, 22-gauge or larger diameter stranded wire to connect the module to the panel.
- Install the module inside the panel cabinet or as close to the cabinet as possible.
- Set each bus module with different bus unit numbers (must be manually set for Concord panels v1.0-1.6).
- Remember that the module draws a maximum 600 mA from the panel's power supply.
- When using panel power to supply bus or hardwired devices, ***do not*** exceed the panel's total power output. Refer to specific panel *Installation Instructions* for further detail.

Tools and supplies

- Slotted screwdrivers
- 3/8"-drive drill and drill bits
- Wire cutter/stripper
- Screws and anchors (included)
- Optional plastic housing (60-800, not included)
- Four-conductor, 22-gauge or larger stranded wire
- RJ-31X Phone Jack (not included)
- DB-8 Cord (included with Concord cabinet)
- Support standoffs (included with Concord cabinet)

Installation

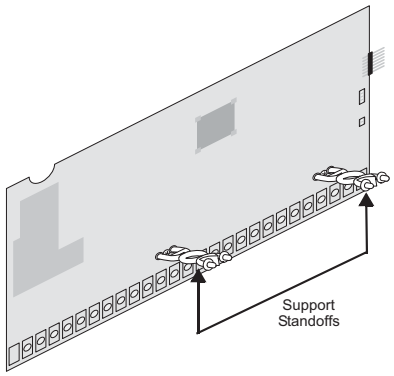
When installing the PIV module, mount the module inside a panel cabinet or on a wall.

Caution: To prevent damage to the panel or module, remove the panel's AC power transformer and disconnect the backup battery before installation.
You must be free of static electricity when handling electronic equipment. Touch a grounded metal surface before touching a circuit board.

Mounting the Module in a Concord Panel Cabinet:

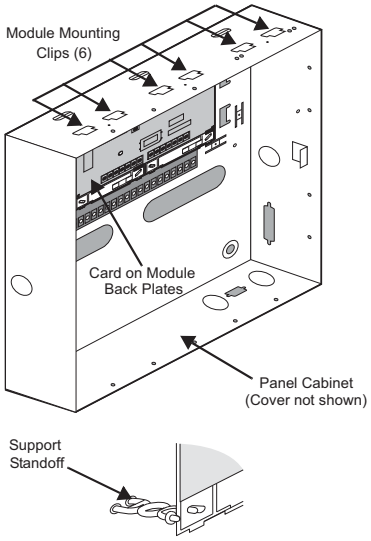
1. Remove panel AC power and disconnect the backup battery.
2. Install support standoffs (see Figure 2 below).

Figure 2: Installing support standoffs



3. On the panel cabinet, slide the top of the backplate on to the module's center and top-left mounting clips (see Figure 3 below).

Figure 3: Mounting the module inside a panel cabinet

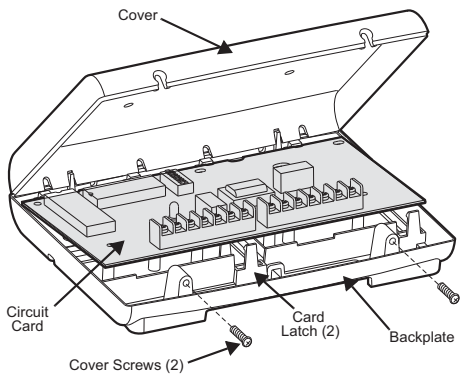


4. Raise the backplate assembly until it rests on the cabinet's left wall tab and the standoffs align with the backplate's lower holes (see detail in Figure 3 above).

Mounting the Module with Optional Plastic Housing:

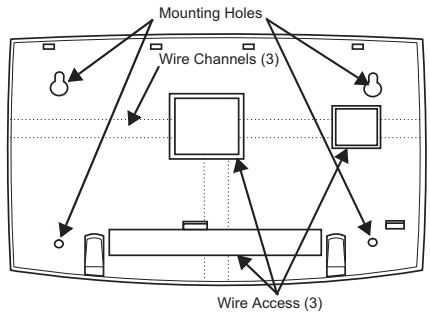
1. Loosen cover screws and remove cover (see Figure 4 on page 3).

Figure 4: Removing cover screws and cover



2. Place the backplate at the desired location. Check for levelness and mark the mounting holes (see Figure 5 below).

Figure 5: Mounting hole locations



3. Drill for mounting holes and install anchors. Next, secure the backplate to the wall with screws.
4. Drill holes for wires at a wire access location (see Figure 5 above).
5. Remove the circuit board from the original backplate.
6. Install the circuit board on the housing backplate and gently press the bottom of the board until it snaps into place under the card latches (see Figure 4 above).

Wiring

Wiring the PIV module requires you to perform the following:

- Run wires for power, bus, speaker, and phone connections.
- Install an RJ-31X jack for phone line connections.
- Wire connections for Concord system modules.

1. For power and bus connections, run a four-conductor, 22-gauge or larger diameter stranded wire from the module to the panel (refer to Table 2 for maximum wire lengths).

Table 2: Maximum wire lengths (module to panel)

Wire gauge	Maximum wire length
18	120 feet
22	40 feet

2. Run a two-conductor, 22-gauge or larger diameter stranded wire from the module to the speaker.
3. Run a four-conductor, 22-gauge or larger diameter stranded wire from an RJ-31X jack location to the telephone protector block.

Installing an RJ-31X Phone Jack

Review the following guidelines prior to installing an RJ-31X phone jack:

- Do not mount an RJ-31X jack (CA-38A in Canada) more than five feet away from the panel.
- Connect the panel to a standard (analog) phone line. Ensure the analog line provides 48V DC and can increase from 89V to 130V DC while the line is in use.

  Note: Concord panels cannot be used on a digital or PBX phone line. These line types are designed only for digital devices that operate on 5V DC and higher. Because Concord panels use analog modems and not digital converters, adapters, or interfaces, the panel is unable to use these line types.

- To establish line seizure in Partition 1, install an RJ-31X phone jack on the home phone line so that the panel is ahead of all other phones and devices. This allows the panel to seize the phone line in case of an alarm, even if the phone is in use or off the hook.

  Note: The PIV module does not seize the line during an alarm.

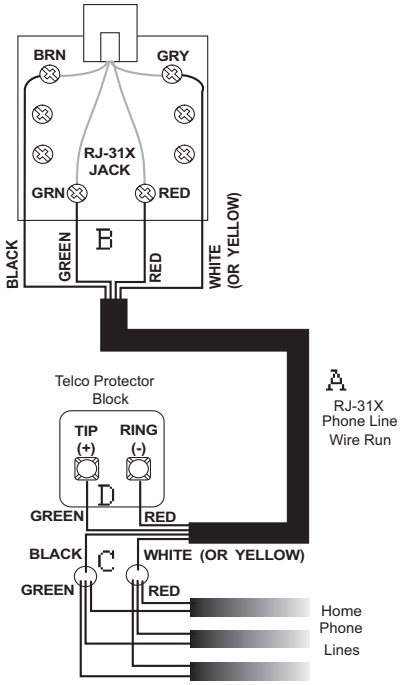
- If an analog line is not available, contact a telecommunications specialist and request an analog line from a phone switch (PBX mainframe) or a 1FB (standard business line).

  Note: Connecting the panel to a PBX-system analog line prevents access from a home phone. However, you may access the panel from an off-site phone.

1. Run a four-conductor cable from the TELCO protector block to the jack location (see A in Figure 6 on page 4).
2. Connect a cable end to the phone jack (see B in Figure 6 on page 4).
3. At the TELCO protector block, remove the home phone line and splice it to the four-conductor cable's black and white wires (see C in Figure 6 on page 4).

4. Connect the four-conductor's green and red wires to the protector block's TIP (+) and RING (-) posts (see D in Figure 6 below).

Figure 6: Connecting an RJ-31X jack to a home phone line



Wiring Connections for Concord Panels

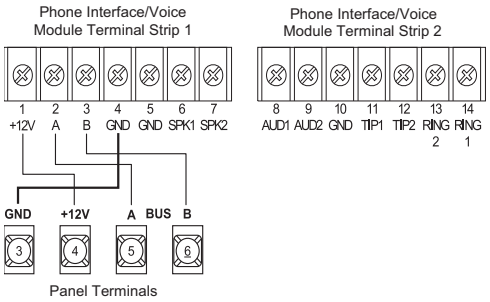
Wiring a Concord system requires you to wire for power, bus, speaker, and phone lines. Refer to the figures shown below for wiring designated partitions.

Caution: To prevent damage to the panel, or module, remove the panel's AC power transformer and disconnect the backup battery prior to wiring.

Wiring - Power and Bus

All partitions

Figure 7: Wiring the PIV module to panel power and Bus terminals

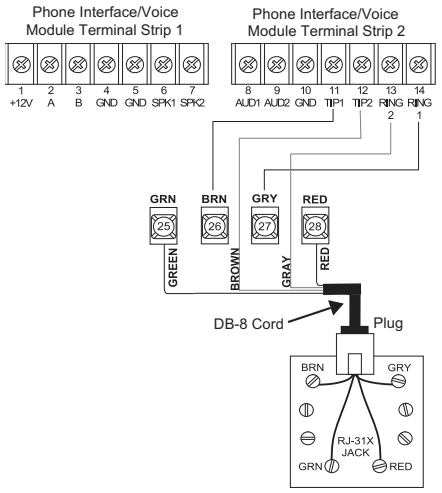


Wiring - phone line

Note: All partitions must be wired to separate phone lines.

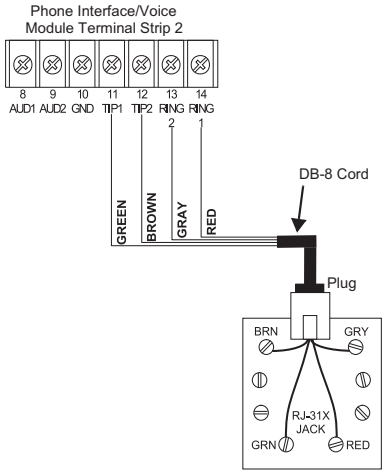
Partition 1

Figure 8: Wiring the PIV module to a phone line (partition 1)



All other partitions

Figure 9: Wiring the PIV module to a phone line (all other partitions)

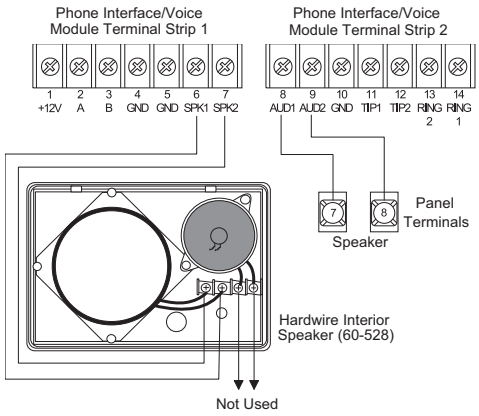


Wiring - speakers

Note: Do not connect speakers to the panel if terminals 7 and 8 are connected to PIV terminals 8 and 9 (see Figure 10 on page 5).

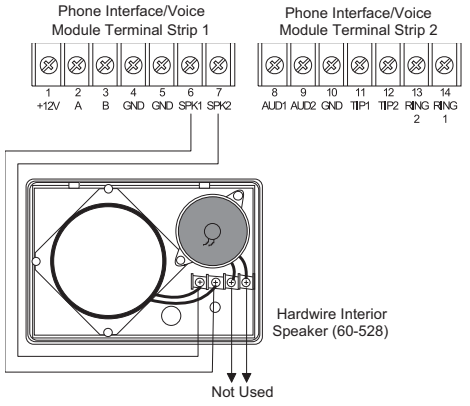
Partition 1

Figure 10: Wiring a speaker to a PIV module (partition 1)



All other partitions

Figure 11: Wiring a speaker to the PIV module (all other partitions)



Setting the Module Unit Number

In order to ensure proper communication, each panel-connected bus module must have a different unit number.

Concord (v2.0-later), Concord 4, and Concord Express (v4) Panels

For Concord (v2.0-later), Concord 4, and Concord Express (v4) panels, unit numbers are automatically learned by the panel after the system receives power. If using one module per partition, the panel automatically assigns each module a partition number.

Concord Panels (v1.0–1.6)

A module can be set to any unit number (0-15) using the module DIP switches. If no other bus modules are installed in a system, the default setting (0) can be used.

If using one module per partition, the lower unit number is assigned to Partition 1; the higher unit number is assigned to Partition 2.

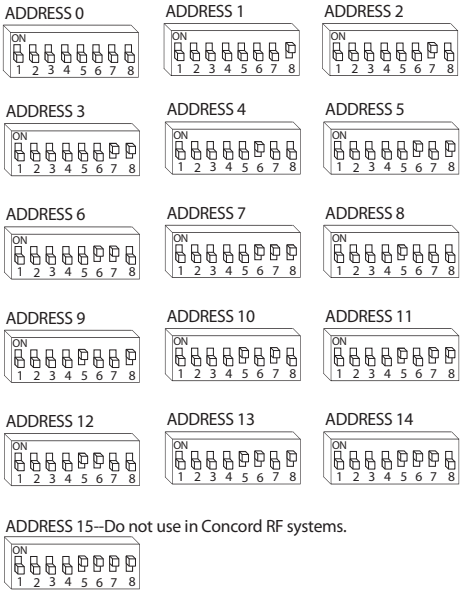
Note: Because unit numbers for Concord RF receivers are factory set to 15, do not use this unit number setting.

Setting DIP Switches

On the module, locate the DIP switches (see Figure 1 on page 1). Next, set the desired unit number from 0 to 15 (see Figure 12 below) before you turn the power on.

Note: DIP switches 1–4 are not used and must be set to OFF.

Figure 12: Unit number DIP switch settings



Power Up and Bus Communication

When powering the system or verifying bus communications, follow the procedures listed below:

Note: To enter program mode and verify unit numbers, you must connect an alphanumeric touchpad to the Concord panel.

1. Verify all wiring at the panel and module is correct.
2. Connect the panel's backup battery and plug in the AC power transformer.
3. Verify the module's status LED is on.

- If desired, enter program mode to verify if a unit number exists and that the module is in the correct partition (see specific panel *Installation Instructions* for further detail).

Changing Module Unit Numbers — Concord (v1.0–1.6)

Note: When a module unit number changes, you must disconnect and reconnect the panel's AC power transformer and backup battery.

To avoid conflicts between a bus device and the panel, consider the following guidelines:

- When possible, assign alphanumeric touchpad unit numbers prior to all other panel programming.
- Set all unit numbers before powering the system and entering Program Mode.

1. Remove the panel's AC power transformer and disconnect the backup battery.
2. Change the module DIP switch setting (see Figure 12). Remember settings must be different from other bus devices.
3. Connect the panel's backup battery and plug in the AC power transformer. The panel automatically scans all bus devices and learns any new settings.

   Note: If the panel has learned a unit number that is not assigned a bus device, the system may indicate a bus failure. To clear a bus failure, enter Program Mode, locate the unused unit number and press D to delete. Refer to specific panel Installation Instructions for further detail on deleting bus devices.
4. Exit Program Mode. The touchpad and bus devices operate properly and all bus failures are cleared.

Programming and Testing

For complete programming, operating, and testing information, refer to specific panel Installation Instructions and Owner's Manual.

Troubleshooting

Table 3: PIV troubleshooting

Problem	Action/Solution
The status LED is off.	1. Check for proper wiring connections. 2. Ensure the panel's AC power transformer is plugged in and the backup battery is connected. 3. Verify the panel recognizes the module (see panel Installation Instructions). 4. If the LED remains off, replace the module.
The status LED remains lit but does not flash.	1. Verify the panel recognizes the module (see panel Installation Instructions). 2. Check for proper wiring connections. 3. If the LED fails to flash, replace the module.
The module has a random, inconsistent behavior.	1. Check for proper wiring connections. 2. Verify the panel recognizes the module (see panel Installation Instructions).

Table 4: Phone troubleshooting

Problem	Action/Solution
After wiring an RJ-31X jack or connecting a DB-8 cord, the on-site phone has no dial tone.	1. Wait two minutes and try again. The panel may be busy reporting to a central station. 2. Disconnect the panel DB-8 cord from the RJ-31X jack. If the phone fails to work, the problem is in the phone wiring. 3. Check RJ-31X jack and TELCO block wiring. If necessary, replace the RJ-31X jack. 4. Check DB-8 cord connections at the panel and RJ-31X jack. If necessary, replace the cord.
A constant dial tone prevents dial-out on home phones.	1. One or more polarity-sensitive phones exists on-site. On the RJ-31X jack, reverse the phone wires connected to the brown and gray wire terminals.

Table 5: Speaker troubleshooting

Problem	Action/Solution
The speakers do not produce sound.	1. Ensure speakers are properly wired. 2. Ensure the PIV module works correctly. 3. Verify the module is located in the correct partition (see panel Installation Instructions). 4. If the condition remains, replace speakers.
The speakers announce the wrong partition.	1. Verify the module is located in the correct partition (see panel Installation Instructions).
The speakers announce status messages but do not sound alarms.	1. Alarm is in Partition 2 and speaker is connected to panel terminals 7 and 8. 2. Ensure the speaker is wired properly. 3. Ensure the PIV module works correctly. 4. Because terminals 7 or 8 may be shorted to GND, the speaker output may have shut down. Disconnect and reconnect panel AC power and backup battery.

Specifications

Compatibility	Concord (v2.0-later), Concord 4, and Concord Express (v4) panels
Power requirement	12V DC nominal (10V minimum); 600 mA maximum draw from panel.
Operating temperature	32° to 140°F (0° to 60°C)
Storage temperature	-30° to 140°F (-34° to 60°C)
Max. relative humidity	90%, non-condensing
Dimensions	5.5” x 8.0” x 1.5” (H x W x D)

Regulatory information

Manufacturer	UTC Fire & Security Americas Corporation, Inc. 1275 Red Fox Rd., Arden Hills, MN 55112-6943, USA
UL listings	UL 985 Household Fire Warning System Units UL 1023 Household Burglar Alarm System Units

Notices

FCC Part 15 Class B

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 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 affected equipment and the panel receiver to separate outlets, on different branch circuits.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Part 68

This equipment complies with part 68 of the FCC Rules. Located on this equipment is a label that contains, among other information, the FCC registration number and the ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

The REN is used to determine the maximum number of devices that may be connected to your telephone line. In most areas, the sum of all device RENs should not exceed five (5.0). REN for this device: 0.4

If this equipment causes harm to the telephone network, the telephone company may temporarily disconnect your service. If possible, you will be notified in advance. When advance notice is not practical, you will be notified as soon as possible. You will also be advised of your right to file a complaint with the FCC.

Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of your equipment. You will be given advance notice in order to maintain uninterrupted service.

If you experience trouble with this equipment, please contact the company that installed the equipment for service and repair information. The telephone company may ask you to disconnect this equipment from the network until the problem has been corrected or you are sure that the equipment is not malfunctioning.

This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

Contact information

www.utcfireandsecurity.com or www.interlogix.com

For customer support, see www.interlogix.com/customer-support