

Alarm.com Wireless Two-Way Voice for Interlogix Concord4 Panels

INSTALLATION GUIDE

Overview and Compatibility

Alarm.com's Two-Way Voice enabled module requires that the panel **not** be connected to a phone line. If the panel is connected to a phone line, then a traditional POTS Two-Way Voice solution must be used instead.

- The Alarm.com Two-Way Voice Module for Concord is compatible with **GE Concord 4 panels with Factory Code 2335 or higher.**
 - To check the Concord system version, press 9 and then the user code (default 1234). Then scroll to "System Version" and press # to display the version number (e.g., 469-2335); the 4 digit number after the hyphen should be 2335 or higher.
 - While the Alarm.com Two-Way Voice module can enable cellular communication on Concord panels older than version 2335, the Alarm.com Two-Way Voice functionality is not recommended since on earlier versions, the siren will not turn off during a two-way voice call.
- Make sure that there is **not** a central station phone number or account number programmed into the panel. Any central station forwarding settings for the account must be specified via the Alarm.com Dealer Website.
- The central station being used for the account must support Alarm.com's Two-Way Voice solution.

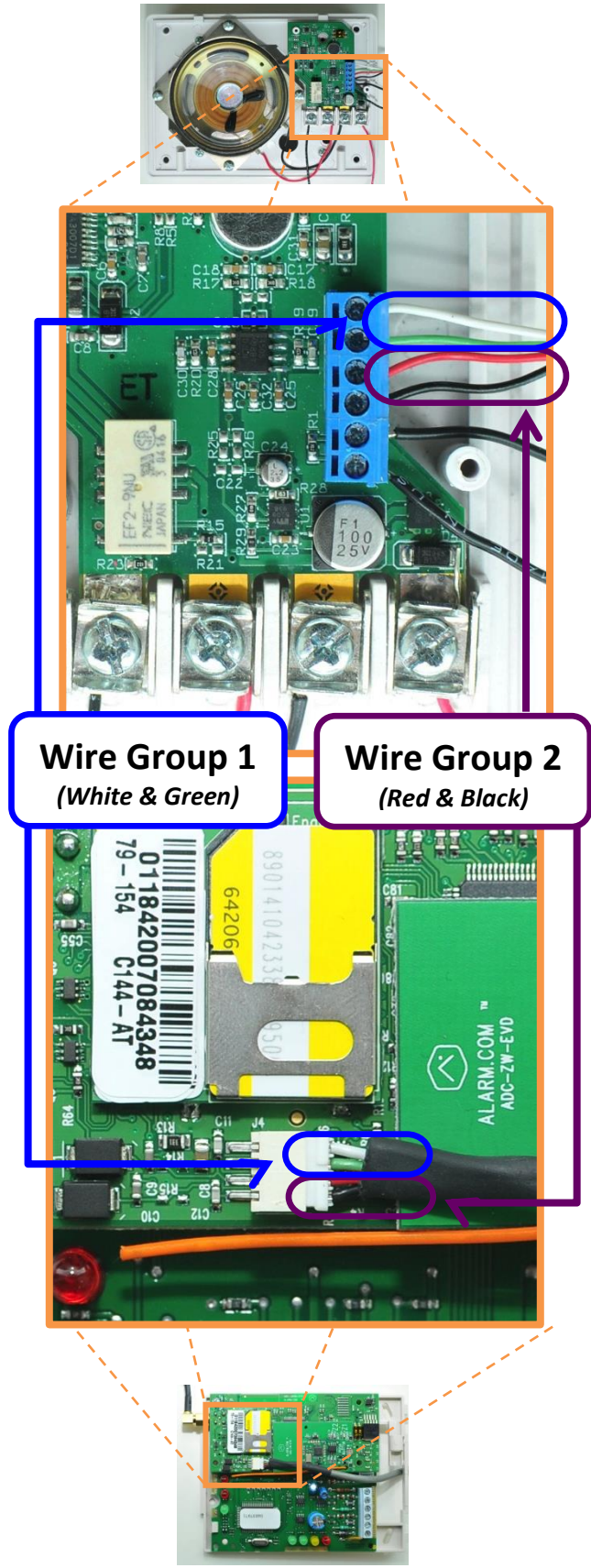
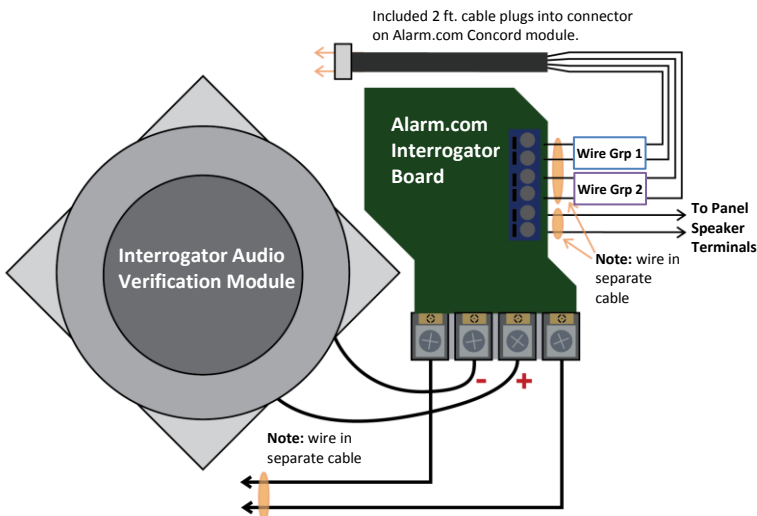
Account Creation

Create the customer's account on the Alarm.com Dealer Site.

- When choosing the service plan (Step 5), make sure to select the checkbox next to "Wireless 2-Way Voice."
- Enter the CS Phone number and account number that you have set up with the central station. Make sure the central station is aware that the account you have set up is an Alarm.com two-way voice account.

Installation

Connect the Alarm.com-compatible Interrogator to the Alarm.com module and Concord panel. Below are wiring diagrams for connecting the GE Interrogator modified with an attached Alarm.com-compatible board to the Alarm.com module and Concord panel.



Wiring Notes

- **Replace the Interrogator's native board with the modified Alarm.com compatible board.** Connect the Alarm.com Interrogator Board to the Concord panel and to the Voice module as indicated in the wiring diagram above. If using more than one Interrogator unit it is advisable to wire them to a different +12V terminal on the board than the one that the keypad is attached to.
- **Connect the Interrogator to the Alarm.com module, using the included connector.** This connector plugs into the Alarm.com module on one end and has 4 wires on the other end that are wired into the Interrogator Speaker/MIC terminals as illustrated above. Note that the installer can splice longer wires onto these 4 connector wires in order to customize the distance between the Alarm.com module and the Interrogator. The total distance between the Alarm.com module and the Interrogator should be no longer than 150 ft.
- **Ensure that the cellular antenna of the Alarm.com module does not cross the path of any of the wires going to the interrogator in order to minimize static.** In addition, ensuring that the wires between the Alarm.com module and the interrogator are both shielded and grounded will decrease the amount of static on calls.

Note: It does not matter which of the two wires in Group 1 and Group 2 run to each terminal within the terminal groupings, so long as Group 1 wires run only to Group 1 terminals and the same is true for Group 2.

Install the System and Sensors

Install the module and gateway following the same steps as with the standard Alarm.com module for Concord, keeping these recommendations in mind:

- **Make sure the module has at least 2 bars of cell coverage.** Having good signal strength is especially important for Two-Way Voice. If there is weak coverage this could cause static on the operator's side of the call, making it difficult for them to understand the person at the customer's premises. Ensuring that the antenna is affixed high on a wall (rather than simply being dropped into a wall) can result in improved coverage.
- **If the panel is in the basement or other non-central location, install the module remotely from the panel.** Since the Interrogator unit must be located within 150 ft. of the Alarm.com module, the Alarm.com module may need to be installed some distance away from the panel if the panel is not near the location chosen for installing the interrogator.

Testing of Regular Alarm Signals (PRIOR to Two-Way Voice Testing)

Turn off the panel's Access Code Lock setting. This feature is 'On' by default, but **must** be turned off in order for communication to work. To switch the Access Code Lock feature to 'Off' go to Programming Mode > Security > Global > Access Code Lock and press '1' and '#' to save.

Note: The siren will not shut off during a Two-Way Voice call if Access Code Lock is on.

Perform a cell phone test at the panel. As with the regular Alarm.com Module, it is necessary to perform a cell phone test at the panel in order to initiate wireless communication with Alarm.com for the first time.

- Press the "8" key.
- Enter installer code (default 4-3-2-1).
- Press the "3" key (keypad will say "Sensor Test 15 min left")
- Press "Disarm" or "Off" within 15 seconds of last step and enter installer code (default 4-3-2-1)

This will send the Cellular Phone Test signal to Alarm.com to prompt communication.

Test regular alarm signaling with the central station.

- **Make sure the Audio Verify setting is still OFF at this point in the test process.** You are not yet testing Two-Way Voice, so this setting should still be off.
- **Trigger an alarm on each sensor.** This step is no different than with a non-Two-Way system. Test all of the sensors and verify that the alarms have been received by the central station.

Two-Way Voice Testing

Turn on AVM via the Concord panel programming menu. Make sure the system is disarmed before turning AVM on at the panel.

- Enter System Programming
- Scroll to Audio Verification
- Press '#' twice to go to Audio Verify for Partition 1
- Turn Audio Verify 'On' by pressing '2' and then '#'
- Exit System Programming

Send a Medical Panic Alarm to initiate a Two-Way Voice call with the central station. Important: Do NOT use Duress/Silent alarm for Two-Way Voice test call. Duress/Silent Alarms are Listen-In only, meaning the panel's speaker is muted for the entire duration of the call. The operator can listen into the customer premises during a silent alarm but cannot talk to the premises.

- **After a minute or two, the operator should come on the Two-Way Voice call.**
- **No answer after 4 minutes? Try sending another alarm.** In some cases the test center operators might not get to a test Two-Way Voice call in time, before the call times out. If the siren times out (4 minute timeout period) and the operator has still not come through, disarm the system and then try sending another medical panic alarm.

During the Two-Way Voice Call

Note that there may be a slight delay when listening to and responding to the operator, since the system is toggling back and forth between listen/talk (like a walkie-talkie). After the operator finishes speaking, wait a second before responding. Verify that the operator can hear you clearly.

AirFX Remote Toolkit Settings for Two-Way Voice

The following Two-Way Voice settings can be managed remotely via the Alarm.com Dealer Website, using the AirFX Remote Toolkit:

Change Microphone Sensitivity

This determines the sensitivity of the panel's microphone. Keep in mind that the more sensitive the microphone, the more feedback the Central Station operator may hear from the speaker.

Range: 1-6

Default: 4

Change Speaker Volume

This determines how loud the speaker is. Keep in mind that the louder the speaker volume, the more feedback into the microphone that the Central Station operator will hear.

Range: 1-6

Default: 4

Change Length Between Calls

This determines the amount of time that must pass after one Two-Way Voice session has ended before another Two-Way Voice session can take place on the same system.

Range: 1-10 minutes

Default: 3 minutes

For regular system use, Alarm.com recommends leaving this at the default setting. If multiple alarms are sent in a short period of time, this allows all of the alarms to be addressed during a single call (rather than initiating multiple Two-Way Voice calls with the central station). An alarm triggered during the waiting period will be forwarded to the central station, but a call will not ever be initiated (even after the waiting period has expired).

Note: For the first 3 hours after the system has been powered on, the “Length Between Phone Calls” setting is 1 minute. Performing a power-cycle will reset the 3 hour timer and set the “Length Between Phone Calls” to 1 minute. This is designed so that when you are installing and testing the system you do not have to wait 3 minutes between test calls. 3 hours after the system is powered on, this setting returns to its regular value (either the default value of 3 minutes, or a different value if the dealer has specified one via the AirFX Toolkit command). Any time the module is power-cycled, this three hour timer goes into effect.

Advanced Configurations

Multiple Interrogators

It is possible to install two interrogator units connected to one Concord panel. The wires going to the inputs of the second interrogator can be connected either directly to the outputs of the panel and module, or they can be connected to the inputs of the first interrogator. Ensure that the maximum length of wires from the panel and module to the 2nd interrogator does not exceed 150 feet.

Troubleshooting

Module Not Making Phone Call to Central Station

Make sure to make two call attempts before trying to troubleshoot further. When testing with the central station, it’s possible that heavy signal/call volume may occasionally prevent an operator from being able to answer the test call before it times out.

- **Verify that the account’s service plan includes “Wireless 2-Way Voice.”**
- **Make sure there is not a phone number or CS account number programmed into the panel.**
- **Make sure that the Audio Verify option is ON.**
- **Minimum “Length Between Calls” Has Not Yet Expired.** If the module has made a call recently and you trigger a second alarm before the “Length Between Calls” time has expired, the module will not make a second call. The minimum Length Between Calls is 1 minute for the first three hours after the module has been power cycled, after which it changes to the default setting (3 minutes). To reset this timer in order to send another call immediately, you can power cycle the Alarm.com module.

Operator Reports Interference/Static During Call

- **Try adjusting the location of the cellular antenna.** The antenna should be located as far away from the panel as possible. In addition, the dealer should ensure that the antenna never crosses any of the wiring to the interrogator unit. If installing the antenna cable behind a wall, make sure that the cable is not right next to any electrical wiring behind the wall.
- **Refer to the Concord Wiring Check Matrix (right) to ensure the interrogator is correctly wired.**

Operator Reports Excessive Echo or Feedback During Call

- **Decrease the module’s microphone sensitivity setting via AirFX Toolkit.** If the speaker volume does not seem too loud at the customer site, but the operator reports excessive feedback, first try decreasing the microphone sensitivity by sending a command via AirFX.
- **Decrease the module’s speaker volume setting via AirFX Toolkit.** If reducing the microphone sensitivity does not improve the echo/feedback heard by the central station operator, you can also try reducing the speaker volume setting via AirFX.

*Note: The Two-Way Voice microphone sensitivity and speaker volume settings **cannot** be adjusted at the panel, and must be adjusted remotely using the AirFX Toolkit on the Alarm.com Dealer Website.*

Guide to Checking for Faulty Wiring

- **Match trouble conditions on the left to possible fixes on the right.** If you experience excessive static, can only communicate in one direction, no sound is audible after picking up the call, or some of loud microphone inputs get repeated by the speaker then the issue may be faulty wiring of the Interrogator unit. See the chart below for some common symptoms and their fixes. Refer to the wiring diagrams on pages 1 and 2 for an explanation of wire groups.

Concord Wiring Check Matrix

| Possible to pick-up call but no sound after | Static | CS can't be heard | Interrogator can't be heard | Interrogator speaker repeats loud mic inputs | Possible Fix |
|---|--------|-------------------|-----------------------------|--|---|
| • | | • | • | | Verify that the dongle is fully inserted into the ADC module |
| • | | • | • | | Verify that the Alarm.com Interrogator board is being used |
| • | • | • | • | | Verify that 12V and Ground are not switched on the interrogator |
| | • | | | | Verify that the cell antenna does not run past any interrogator wiring |
| | • | • | (very quiet) | | Check whether Wire Group 1 and Wire Group 2 are wired into each-other's positions on the interrogator |
| | • | • | | | Check whether one wire from Wire Group 1 and one wire from Wire Group 2 have been wired into each-other's slots on the interrogator |
| | • | | (slightly quiet) | • | |
| | • | | (quiet) | | |