

HCA Tech Note 220: Using the SmartHome Insteon Hub

The Insteon Hub and the older 2412N are interesting products but they are not a 2413 PowerLinc with a network connection in a box. They are much different products. While they work well in some environments they don't offer the level of function needed for some of the core features of HCA Insteon support.

One issue is that the Insteon Hub doesn't report to the computer when Insteon signals are received on the power line. It records them in a buffer that forces HCA to poll periodically to determine if receptions have arrived. This buffer is very limited in size. These two limitations – the need to poll and the buffer size - create problems in many areas.

The HCA features that let you create and examine links between Insteon - what HCA calls the Visual Link Editor - are very driven by message transmissions and receptions. Depending upon the version of the Insteon device and the number of links in its linking table, HCA may need to send hundreds of messages to read the linking table completely. Insteon messages are repeated around the network as the message is received and retransmitted by the network devices. In this way, one message sent by HCA through the Insteon Hub may result in many messages being placed on the power line and the one reply can have many repeats as well. Each of these messages – original or repeat – is received by the Insteon Hub and can easily fill the Insteon Hub's buffer and cause some messages to be lost.

During testing of the HCA support for the Insteon Hub, we saw that these limitations caused HCA to fail when reading and writing the internal linking tables of devices. This resulted in having to retry reading and writing many times.

Another issue is asynchronous messages. If you have HCA linked to a keypad button, for example to have a program started when you press that button, HCA only receives that message after it polls the buffer to see if any commands have arrived. This slows down processing of those messages since they may land in the buffer just after HCA last polled to check the buffer and that message will remain unread in the buffer until HCA polls again. Also, if the buffer is already full, the message may be lost entirely.

Because of all these problems we recommend using the 2413 PowerLinc and not the Insteon Hub. The 2413 provides the connection that HCA needs to the Insteon Network without the limitations of the Hub.

However, there is a group of users who have no option but to use the Insteon Hub - those not in North America with 120 volt 60hz power systems. At this time the 2413 PowerLinc is not available in those locations and the Insteon Hub is the only solution. We are not satisfied with the HCA support for the Insteon Hub but the developers have done their best given its inherent limitations.

If you can use the 2413 PowerLinc and you still want to use the Insteon Hub – perhaps to use the SmartHome mobile application – that's fine. Both can co-exist on the network. Just identify only the 2413 PowerLinc to HCA.

Using the Insteon Hub

Unlike the PowerLinc interfaces the Insteon Hub is a network accessed interface. It has a network connection rather than a serial port or USB port and so requires additional configuration. After selecting the Insteon Hub as the interface type in the HCA, press the *Configure* button.

Interface Configuration

Insteon Hub Connection -- Enter the IP Address and Port as set up using the SmartHome mobile application

Connection

Device address for example: dev1.myhome.homedns.org

Device IP address

IP Port:

During connect allow seconds before giving up.

Disconnect when idle and reconnect on use. Idle if not used in minutes.

Username: Password:

Note

Enter the same user name and password as set in the Insteon mobile application. If you have not set a user name and password, hard to type defaults were chosen. You should enter and save your own user name and password using the Insteon mobile app. More information on locating and changing the user name and password is in the Insteon Hub Technical Note.

Logging

Log receptions from this interface

Log sends to this interface

Log entries associated with this interface go to:

This interface supports multiple protocols. Which of these protocols should be used? Insteon X10

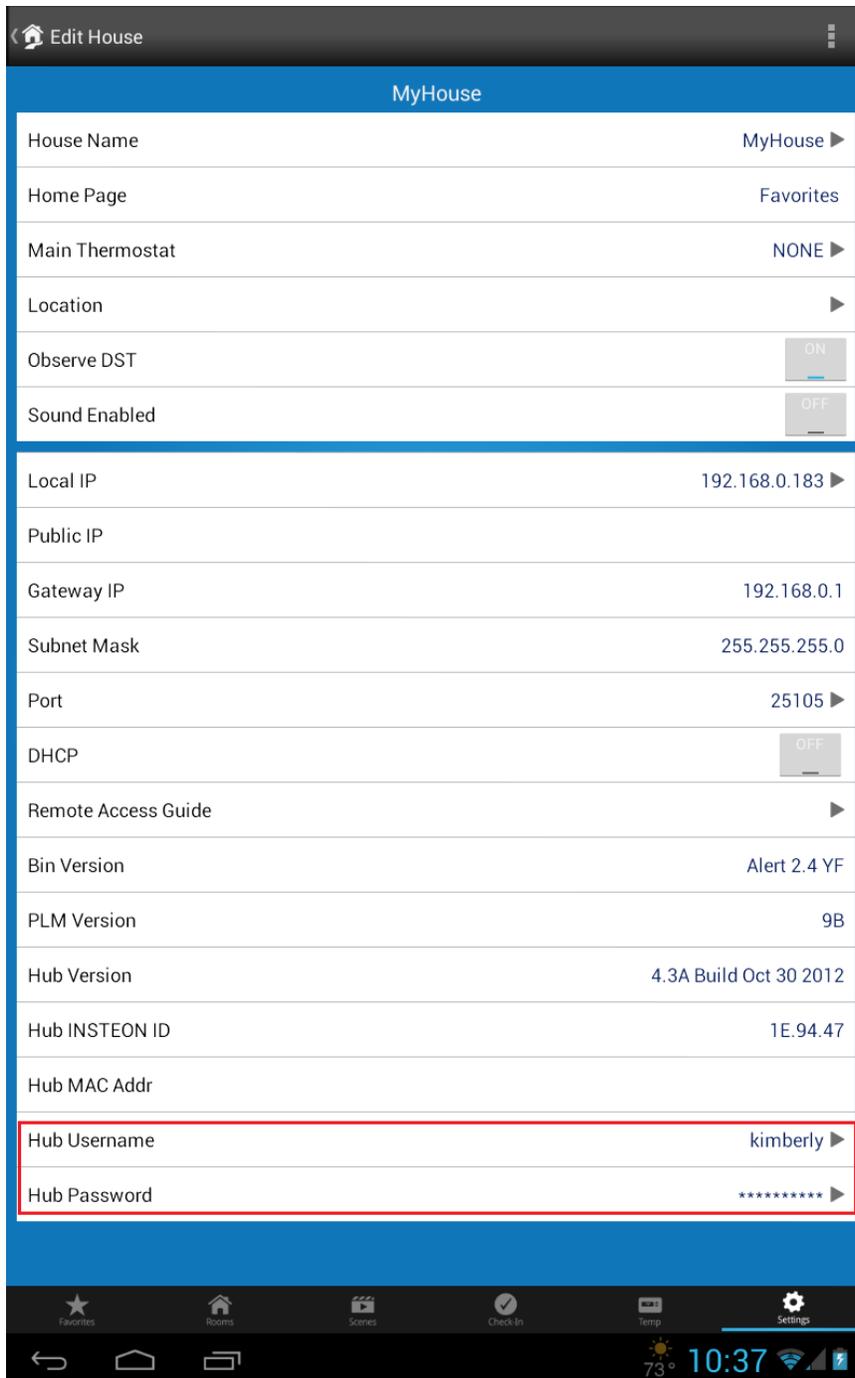
OK Cancel

The IP address of the Insteon hub and the port number it uses must first be set with the SmartHome Insteon mobile app. HCA does not do that. Just take note what the address is when you use the SmartHome application.

The Insteon Hub, like the 2413 PowerLinc, supports both X10 and Insteon. Enable either or both protocols that you want to use the Insteon Hub with.

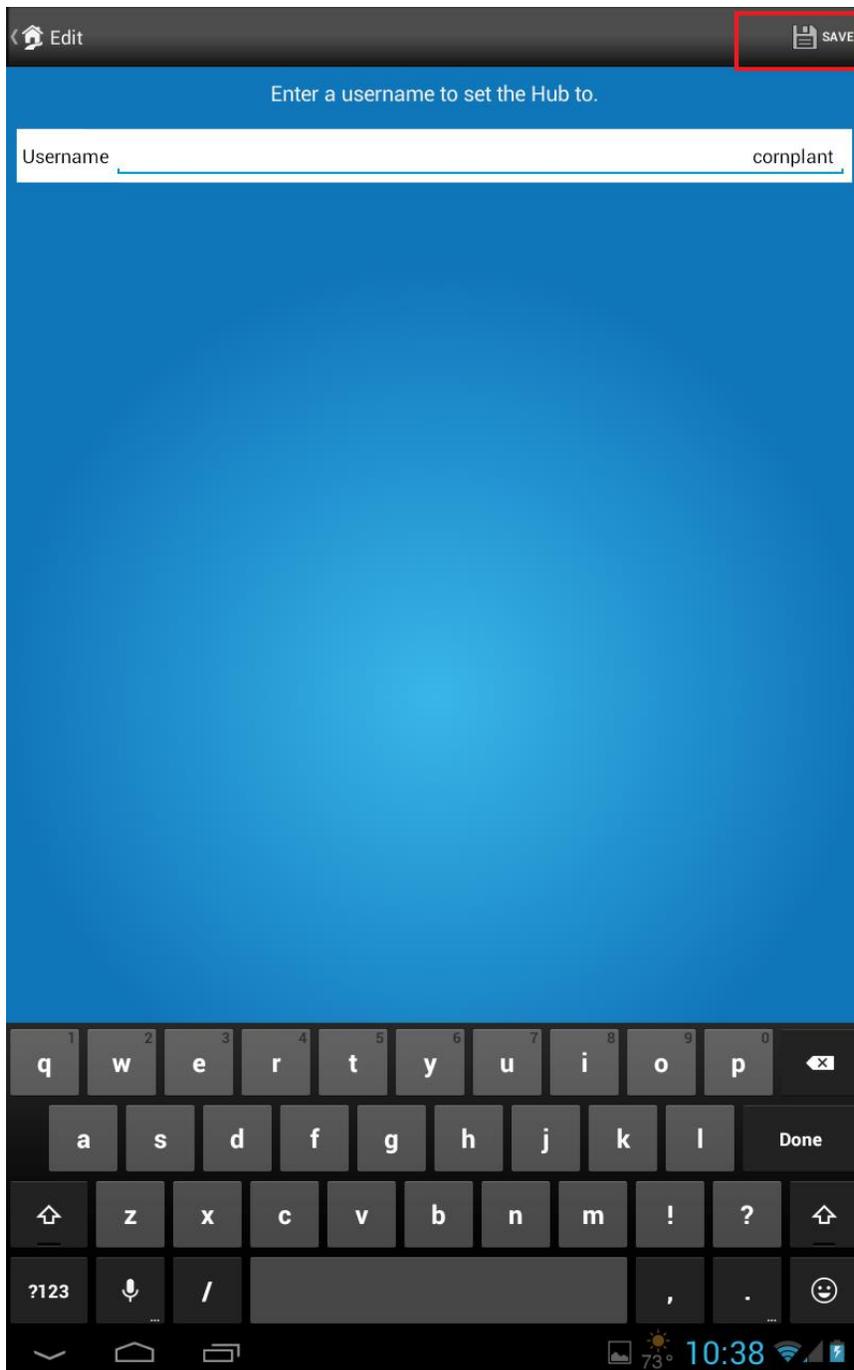
In order for HCA to access the Hub in the same way that the Insteon Mobile App does, the user name and password for the Hub must be entered in the configuration dialog.

To find out what the user name and password currently is, open the Insteon mobile application, click on the settings icon to "Edit Settings" and then choose the "House" settings.



The user name and password are at the bottom. If you have not previously selected a user name and password a default hard to type one was selected for you. In this case you want to enter your own user name and password. You should write these down, especially the password as the Insteon app hides it from view. A good place is on a piece of paper that you tape onto the Hub itself.

The application doesn't make it clear how to change these. Click on the triangle at the right side of the user name line and an edit page opens.



After you enter the new user name you must press the “Save” button at the top before you use the back button to return to the main settings page or your change is lost. Then use the same procedure to change the password also.

Enter the user name and password you entered in the Insteon mobile application in the HCA configuration dialog.

Auto Disconnect

The Insteon hub like other network addressed interfaces allows only a limited number of connections at a time. This can be a problem if HCA opens the connection and leaves it open forever. Doing that may prevent other users of that interface from connecting to it.

If the *Disconnect* option in the interface configuration dialog is enabled, then HCA connects to the interface when it needs to use it, and then leaves it open for the specified number of minutes and if not used again during that time then it disconnects. The next time it needs to use the interface then it reconnects.

If you use this option then you will not receive *Asynchronous* messages from the interface! Suppose you connect to the Insteon hub and send an ON command to a device. HCA sends the Insteon message and receives a reply saying that the operation was completed. That is a *synchronous* message protocol - you send something and it replies. The message from the interface (its reply) is always preceded by a message sent to it (your request).

Now suppose you have a keypad linked to HCA (actually, linked to the Insteon hub address) and someone pushes a button on that keypad. The keypad sends to HCA a message to report what occurred. This would be an *asynchronous* message. You didn't ask the Insteon Hub to do anything; it just sends you a message. The message you received (the report) isn't preceded by a message you sent to it. That is why this is an asynchronous message.

If HCA is not connected to the interface when the interface has something to report it will not get received since HCA doesn't have an open connection to it. If you want to receive these kinds of asynchronous messages – reports for actions that HCA didn't initiate – then you can't use the disconnect option.