

FAQ: Voice UPB Bridge version 4 (updated 25-Jan-23)

What does this do?

The Voice UPB Bridge provides a method where UPB devices and scenes can be controlled using Amazon Alexa and/or Google Assistant. It uses several commercially available off-the-shelf hardware items interconnected along with custom software.

Question: What are the components of the voice bridge system and where do they come from?

- [Hardware] The PIM-R available from PCS. The PIM-U can't be used. This PIM will be used 24/7 by the voice Bridge so if you have one used for programming your UPB devices, it is best to get another dedicated to this use.
<https://pcswebstore.com/products/pulseworx-powerline-interface-module-rs232>
- [Hardware] The automation hardware product called Hubitat. This is available from many different resellers or from the Hubitat company directly.
<https://hubitat.com/products>
- [Hardware] A serial to network adapter. This is available from Global Cache and is called the "iTach Flex – IP Version". You also need the "Serial RS232 Flex Link Cable". Be careful when purchasing these as they have different versions. You want the version that connects to your network using a RJ45 cable and not the wireless model. You also do not want the POE version.
<https://www.homecontrols.com/Global-Cache-iTach-Flex-IP-GCFLEXIP>
<https://www.homecontrols.com/Global-Cache-Flex-Link-Serial-Cable-GCFLEXRS232>
- [Software] Hubitat application and drivers, created by us, that are added to the Hubitat to implement UPB device control.
- [Software] A Windows application, created by us, that reads your UPB file and lets you assign voice names to devices and scenes.

Question: I'm still not 100% clear on what I get from you and what I must get from others. Also, who supports what if I have a problem?

You must purchase – or already have – the products described above. Any hardware warranty issues go direct to the manufacturers.

For the Hubitat, their documentation is excellent and there isn't much more to do then plugging it in, connecting with a browser, and doing some minimal setup. Any issues with initial install or warranty issues go direct to them.

We provide the device drivers for the Hubitat and our Windows application. We created excellent step-by-step documentation on install and configuration. It is a bit of a DIY project rather than just something

“right out of a box” but it isn’t difficult. We are here to answer any support questions you may have about getting the whole system working.

Question: Does it work with both Alexa and Google Assistant?

Yes

Question: Why do I need the Hubitat?

To support a voice assistant there must be a piece that executes in “the cloud”. Let’s take the example of talking to Alexa, but it’s the same with Google Assistant only a different cloud is involved.

When you talk to your Alexa enabled device in your home, it sends what you say to the Amazon cloud. There it is interpreted and if it is a Smart Home command (like “Turn on lights”) it then determines what provider manages those lights. They could be UPB, but they also could be Phillips Hue, or others. The Amazon cloud passes that command to the cloud of that device provider. That cloud communicates with something in your home to carry out the command.

It's the “provider cloud” that is the issue. To maintain a cloud implementation – even when hosting on purchased services like AWS – takes resources that we don’t have. Nor does PCS. By using Hubitat we are making use of their cloud system that they are fully capable of maintaining and improving at the scale needed. In our months of testing we have seen no major service interruptions or hardware failures with Hubitat.

Question: Why not a PulseWorx Gateway or the PIM-IP?

We do have an implementation that uses the PulseWorx Gateway but currently there are reliability issues with it. Currently we do not feel it is appropriate to use in the Bridge product. When future Gateway versions become available we may readdress its use. Even if the Gateway was used, you would still need the Hubitat to provide the Cloud facilities that neither us nor PCS provide.

The PIM-IP, a PIM with a network interface, doesn’t have the necessary features we need. In addition, it is an obsolete product.

Question: I already have similar gear to what you specified. For example a Simply Automated CIM or another model device that connects a serial port to my local network. Can I use those?

On the Simply Automated CIM: That’s not recommended. Its probably quite old and the newer PCS PIMs have a much better transmit and receive circuits. Since the PIM will need to have good signal transmission to reach all your UPB devices, we really recommend that you use the PIM-R from PCS.

On other devices that create a serial port on your network: The Global Cache device implements a HTTP message protocol that the Hubitat driver uses in its implementation. Because of that you must use the Global Cache unit listed above.

Question: Your previous Voice Bridge product worked just fine, so why this change?

The last implementation of the Voice Bridge implemented its own cloud. We can no longer provide that.

Question: Is there a monthly cost?

Not currently. Since we have been working with Hubitat there has been no cost beyond the initial purchase of the unit. We know of no plans for this to change but this isn't in our control. Hubitat does offer a subscription service that provides backup and easy hardware replacement. You do not need this if you are only using Hubitat for the Voice UPB Bridge.

Question: I looked at the install instructions. Wow, a bunch of pages! This looks like a lot of work.

Well, it will take a bit longer than just a minute or two. But is as step-by-step and as clear as we can make it. If you just go through the steps one at a time it will work first time. If you get stuck, just email support and we are there to answer questions.

Question: Once it is all working can I do other things with the Hubitat besides the voice control?

Yes, if you want to. Just know that Hubitat is no Control4, RTI, or URC. But it does work with many less expensive automation products but has no AV support. The UPB devices and scenes are represented in the Hubitat as "Virtual devices" and can be controlled by their automations and schedules. Just don't do anything to modify or delete the drivers or app we provide, but besides that you can do as you want.

Question: If I turn a light on manually at the switch or press a keypad button in my home, will Alexa or Google Assistant know the light is on?

Currently, no. But that isn't the complete answer.

For the assistant to know all devices state, many things must happen. First there must be a transmission of a UPB command from a keypad or status report from a switch. UPB Switches can be configured for this. For a keypad press, which transmits a scene command, many devices could respond and knowing which ones do respond and how they respond is a complex problem.

With this release of the Bridge product there is a more fundamental blocking issue: There is no way for the Hubitat to receive UPB commands from the PIM-R so it doesn't see those UPB transmissions. Even if it did, knowing what devices respond to which scenes is far too complex for what the Hubitat UPB driver can do.

However, if we release an implementation that uses the PulseWorx Gateway, then the Assistant will know the state of all your devices. How is this done? When Upstart, the UPB configuration program, exports your design to the Gateway it saves additional tables that enable the Gateway firmware to keep track of state and which scenes effect which devices. When the PulseWorx Gateway notes a state change it sends that information to the Hubitat in a highly processed form, so the UPB driver doesn't have much work to do and can set its internal device state.

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