

### **HAI/Leviton OMNI HLC Mode**

HLC Mode is a simplified form of UPB control used optionally by the HAI/Leviton controller. This application note describes what it is and how it relates to basic UPB features.

UPB devices can be configured by the very limited built-in UI available from the OMNI main keypad, but devices are usually configured using a Windows program called PC Access.

### **Rooms & Devices**

In HLC mode, an installation is divided into rooms. Each room contains one (or more but usually only one) keypad called a room controller. Also, in a room are 7 other devices usually wall switches. An installation can have up to 32 rooms.

It is important that the concept of a "room" isn't confused with an actual room in the installation site. A "Room" could be the whole first floor of a dwelling or it could be an actual single room in that dwelling.

Here is a room configured from the PC-Access software:

	I		I	
017 (RM3	3)	Library	HAI Lighting Control (HLC)	~
018(R	M3-2)	Library Lts	HAI Lighting Control (HLC)	
019(R	M3-3)	Library Bar	HAI Lighting Control (HLC)	
020(R	M3-4)	Bookcases	HAI Lighting Control (HLC)	
021(R	M3-5)	Curio	HAI Lighting Control (HLC)	
022(R	M3-6)	UNIT 22	HAI Lighting Control (HLC)	
023(R	M3-7)	UNIT 23	HAI Lighting Control (HLC)	,
024(R	M3-8)	UNIT 24	HAI Lighting Control (HLC)	,
				$\neg$

This room – number 3 – contains the room controller and four wall switches.

The most important point in understanding HLC mode is that each button on the keypad controls all devices in the room to a given level. In HLC mode it isn't possible to have a keypad button that effects some but not all







devices in the room. The "ON" button of the keypad controls all the room devices ON, and the OFF button controls them all OFF. The other buttons control the devices to 80%, 60%, 40%, and 20%.

#### **UPB Unit id and the HLC Rooms**

In the image above of the PC-Access device list, the number listed in the first column is the same as the unit id of the UPB device. Room 1 contains units 1 to 8, room 2 contains units 9 to 16, room 3 contains units 17 to 24, and so on.

Suppose you have an HLC installation and you want to add a device to it using UPStart. You would need to first know the HLC room (1-32) number and device in that room (1-8) and then you can compute the UPB unit id like this:

```
UPB Unit id = ((HLC Room # - 1)* 8) + HLC Unit #
```

For example, room 3 unit 6 is UPB unit id 22

To go the other way from a UPB unit id to an HLC room # and unit # is:

```
HLC Room = ((UPB Unit ID - 1) / 8) + 1
HLC Unit = UPB Unit Id - ((Room - 1) * 8)
```

For example, UPB unit id 22 is room 3 unit 6

#### **Scenes**

Each wall switch is configured identically for the room scenes. Each room has its own set of scenes to implement the 100%, 0%, 80%, 60%, 40%, and 20% levels. To determine the range of scene numbers for a room use this formula:

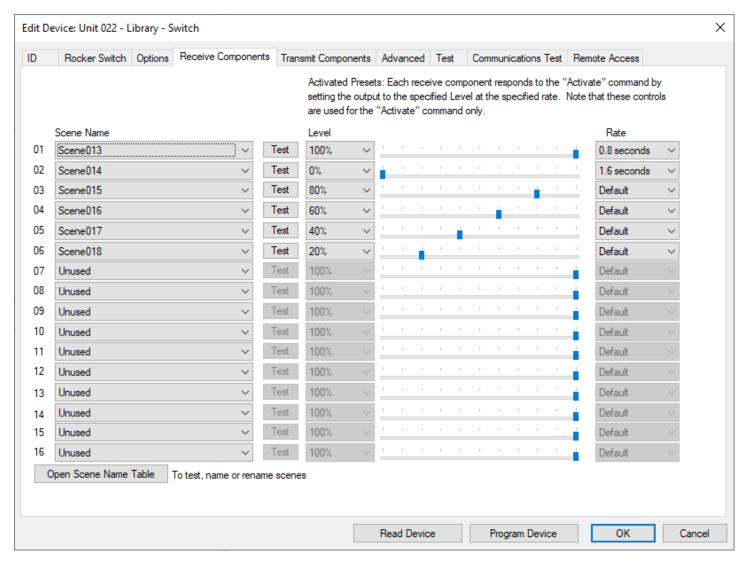
```
First scene in a room = ((room # - 1) * 6) + 1
Last scene in a room = (first scene in a room) + 5
```

For example, in room 3, the scenes used are Scene013 to Scene018. Here is a device configured for HLC mode in room 3 as shown in UPStart:









Note how the scenes are used. The first room scene is for 100%, the second is for 0%, the third is for 80% and so on.

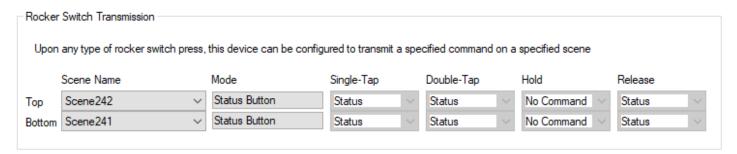






### Wall switch rockers

Another aspect of HLC mode is that each wall switch rocker is configured so that the top rocker when tapped transmits scene 242 and the bottom rocker transmits scene 241. In UPStart this looks like:



Every switch in a HLC installation has scene 242 set for the top rocker with mode "Status Button" and the bottom rocker set for Scene 241 with mode "Status Button". These settings allow the OMNI to keep its internal state up to date.

#### The OMNI is not UPStart

If you are coming from an UPStart background one of the hardest aspects to understand about the OMNI and HLC mode is that, unlike UPStart, devices are not "installed". While the OMNI can program a device with the necessary configuration for HLC mode, it is perfectly happy to operate that device even if it never programmed. If it has the expected unit id and responds to the expected scenes, all will work.

For example, if you were to program a device using UPStart with the correct unit id for a room, and configure the receive and transmit components as described above, then the OMNI will control it and receive messages from it in the same manner as if it programmed the device itself.

If you want to use PulseWorx devices and not HAI devices with the OMNI, UPStart can do the programming for you. Just add the device to your UPB network and then right-click and select Configure OMNI HLC Device from the popup menu.

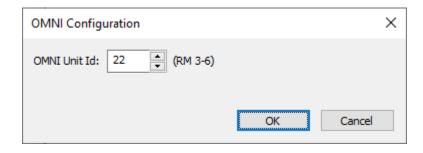








UPStart asks for the room and device number using the same PC-Access notation and it does the work for you of configuring the scenes and the rockers.



##end##



