# Chapter 19 Troubleshooter

Once you have been using the Home Control Assistant for a while, you will probably want to look at the Troubleshooter. The Troubleshooter is a set of several tools you can use to make sure that your home design is working the way you want it to.

# **Overview of the Troubleshooter**

The Troubleshooter consists of three tools:

- Inspector
- Alert Manager
- Log Viewer

The composite of how things are working appears in the ribbon *Home* category *Troubleshooter* panel and tells you several things at a glance.



There are two parts to look at. The right and middle report what the Inspector has found and the left side reports what the Alert manager reports. To open the Inspector click on the left side. To open the Alert manager click on the right side.

Before getting into each of these tools it is important to first understand the differences between what the Inspector reports and what the Alert Manger reports.

The Inspector reports on potential problems that can determined from a <u>static</u> analysis of your design. The Alerts Manger looks for problems that occur over time while the system is running. It looks for <u>dynamic</u> problems.

# The Inspector

The Inspector is a tool that locates and describes possible problems in your home design. It serves as a check on your design, and can point out potential difficulties before they create a problem in controlling your home.

As you work with objects in your home design, HCA observes errors or anomalies in many different places, and records them as they are encountered. The Inspector pulls all these error reports together into one place. Not everything it describes is necessarily a problem, but you should look into each item it notices.

Some of the problems (there are many more) the Inspector checks for are:

- Is there more than one device with the same primary address?
- Has a schedule been selected as the normal start schedule?

- Does any schedule contain schedule entries tied to specific calendar dates that are now gone by?
- Are all of the programs in the design ready to start?
- For any programs that reference external files, are the paths to the files correct and the files exist?
- Are there any devices, programs, or groups that have been suspended?
- Are there conflicting schedule entries for a group and any of its members?
- Are operations with devices consistent with their properties? For example if you a using a DIM operation does the device properties show it supports DIM?

If any of the conditions are found, then you have a possible problem in your design, and the Inspector notes it for you.

The Inspector periodically examines your home design. Each time you make a change to your design the Inspector checks for possible problems.

Depending upon the severity of the problems found, the inspector icon in the ribbon changes.

The Inspector classifies each issue found as a red or yellow issue. As you would expect, red issues are more serious. In the ribbon the current count of red and yellow issues are displayed.

# **Inspector Configuration**

The inspector can check for many conditions. There are so many possible conditions that it may be useful for you to select only some of them. The Inspector Setup tab appears as:

Inspector
Inspector Inspector Setup
The design inspector tries to locate possible problems in your home design. It's always working in the background looking for problems but not everything it finds is always something you need change. Sometimes it is just trying to warn you what could be a problem. You can control what the inspector looks for by enabling or disabling various types of checks.
The design inspector looks for problems by examining the devices, schedules and programs in your design. It doesn't look at how the design operates over time. For problems that happen as HCA runs your design, look at the Alert system.
Design Inspector checks for:
Conflicts between schedule entries for groups and schedule entries for the group members
Sends (schedule entry or program) to device 'A' but 'B' is also controlled because they share address
Device properties that don't match actions. For example, scheduling a device to dim but it doesn't support dim
☑ Using a named scene but the device doesn't have that scene name available
✓ Using a program trigger in a Test or Start element and there is no trigger compatible with it
Operations that use specific hardware that is not available
✓ Programs not ready to run
Referencing a file that is not available
Suspended or disabled devices, programs, groups, or schedule entries
✓ Using the same primary address for more than one device
Check expressions for problems when a device, program, group, or schedule is named
Close

After reading the text on this dialog, select the conditions you want the inspector to check for.

If you uncheck one or more of the options, those checks are not done so no messages for those kinds of checks appear on the Inspector tab. If you do check one of the options, messages may appear but you can *check them off* if they are not problems. This is described in the next section.

### Inspector Checklist

Inspector Inspector Inspector Setup Program "Master Bedroom - Master bath1" Program "Motion - Motion Main Bath" Program "Motion - Motion Talker" 5. The following 3 items have triggers for K8 with the same command Program "Programs - Home via Garage" Program "Motion - Motion Dining" Program "Motion - Motion Talker" ⊠ 6. The following 3 items have triggers for K10 with the same command: Program "Down Bath - Downstairs bath1" Program "Motion - Motion Down Bath" Program "Motion - Motion Talker" ⊠ 7. The following 2 items have triggers for P7 with the same command: Program "House - Circulation pump 60" Program "Ferry - Ferry Waiter" 8. Schedule entry "At Home - Heater Schedule" is suspended from control by a schedule 🛛 9. Program "Motion - Motion Talker" was disabled at 3/7/2012 11:07 AM. Links in blue are clickable links to the problem location Close

The Inspector report is the 1<sup>st</sup> tab of the inspector.

Associated with each message in the checklist is a box that appears to the left of the message number. Some conditions the Inspector reports upon are problems and should be corrected, but others may not be. Only you know which is which.

If a specific message reports on something that is not a problem in your design, use the left mouse button to click the checkbox associated with the message. In doing this, you are telling the Inspector that this message is something that truly is not a problem. For example, in the above screen image, issue number 8 reports that a program is suspended has been checked off, because I made a conscious decision to suspend that program—hence it is truly not a problem

If the Inspector has reported on a condition that is really a problem don't check it off - just close the Troubleshooter and resolve the problem. Once you have made the correction, the Inspector will no longer report the problem.

**Hint:** If the message displays in blue text you can click on it and the inspector closes and the appropriate dialog where you can make changes to resolve the issue opens.

The two options on the bottom of the Inspector tab are used to control what you see in the checklist. Conditions that you check off don't disappear; they are still reported each time the Inspector checks your design. To see just those messages that are not checked off, select the *Show* only what's not checked off option.

Once a message is checked off, the Inspector no longer uses that message in determining if the status bar lights should show a yellow or red condition. In this way, once you fix all problems or check off those messages that are OK, the status light will show green. If the Inspector finds anything new, the light will change to yellow or red.

# **Alert Manager**

The Inspector as described above looks for problems in your design by analyzing your design at any minute in time. There are a second set of things that can go wrong as HCA operates your design. These are just a few examples:

- A device is polled for it's status but it doesn't reply
- An attempt is made to take a weather observation but it fails.
- One part of a UPB message being received is missing
- A message is received from a device that doesn't match anything in your design.

As you can see from this list, all of these items can't be checked for by the inspector as they only happen over time. What happens when these sorts of problems occur is what the Alert Manager is for.

Each of these conditions is called an Alert and each can be configured to how you want HCA to react.

The Alert Manager dialog is opened by clicking on the Alerts side of the troubleshooter panel in the ribbon. It consists of two tabs: Summary and Details.

### Alert manager summary tab

The summary tab show each possible alert, if and when it occurred, and tools for configuring.

ne Alert system reports on problems that are dy at don't acknowledge control commands, etc.				-	For example status requests not answered, device
Alert	State	Count	Last Occurred		Configure
Insteon: Unknown address	Green	0		Clear	Configure
Insteon: Missing command acknowledgement	Green	0		Clear	Configure
JPB: Unknown unit Id	Disabled	0		Clear	Configure
JPB: Missing sequence in transmission	Green	0		Clear	Configure
JPB: Missing command acknowledgement	Green	0		Clear	Configure
Wireless: Unknown unit	Green	0		Clear	Configure
(10: Unknown address	Disabled	0		Clear	Configure
Status request and no reply	Green	0		Clear	Configure
Confirm receipt needed retransmission	Green	0		Clear	Configure
Confirm receipt failure after all retransmissions	Green	0		Clear	Configure
Program error	Green	0		Clear	Configure
Weather observation failed	Green	0		Clear	Configure
Interface Connection	Green	0		Clear	Configure
Connected interface reported error	Green	0		Clear	Configure
JSB Disconnection	Green	0		Clear	Configure
Power out	Disabled	0		Clear	Configure
Power restored	Disabled	0		Clear	Configure
Client disconnect	Green	0		Clear	Configure
Category 1 devices overdue	Green	0		Clear	Configure
Category 2 devices overdue	Green	0		Clear	Configure
Category 3 devices overdue	Green	0		Clear	Configure
Category 4 devices overdue	Green	0		Clear	Configure
Jser Alert 1	Green	0		Clear	Configure
Jser Alert 2	Green	0		Clear	Configure
Jser Alert 3	Green	0		Clear	Configure
Jser Alert 4	Green	0		Clear	Configure

The Summary tab lets you view and clear the count for each alert or clear them all using the "Clear All" button.. It also shows the alert level – green, yellow or red - for each alert determined from its count. You can also re-configure the alert from this view. Press the "Configure" button or double click the line to open the alert configuration dialog.

All possible alerts are listed. If you want you can disable an alert. When an alert is disabled, if the condition that alert tests for happens, nothing is done – it doesn't log, it doesn't count. It is just like it never happen.

### Alert manager details tab

The details tab shows information about each alert that happened, when it happens, and any details about it.

Remove?	Alert	Time	Info	
	UPB: Unknown unit Id	5/16/2015 8:29 AM	Network 090 / Source 006 / Dest link 001	
		m		

You can also re-configure the alert from this view. Double click the line to open the alert configuration dialog.

# Configuring alerts

Each alert can be configured in several ways:

• How often it logs the alert in the alert details log. The possible choices are "never", "each time", "once a day", "start after x and stop after y" a simpler "log after x" and "once"

- How its occurrence changes the green-yellow-red level shown in the HCA ribbon
- Does HCA start a program when it happens? This program could, for example, send a email or SMS message to you reporting what has happened.
- When to clear the alert count.

The next major change was to separate logging from counting. So now you can "never log" but still count occurrences. This can be useful for example if you really don't care about specific devices failures just how well the network is working in general

The alert setup has been changed to have daily, weekly, monthly clear options.

Added to the log options of "never", "each time", "once a day", "start after x and stop after y" a simpler "log after x" and "once"

Alert Frequency	×
Configuration for alert: Status request and no reply	
Disable this Alert	
If this alert occurrs:	
Create an alert log entry Each Time	
and show the inspector alert level Yellow after 5 occurrences then Red after	r 10 occurrences
and start this program (none)	
and clear the alert count Daily	
ОК Сапсе	

In addition to the alerts that the manager watches for HCA also has four "user" alerts that can be triggered by programs using "\_AlertAdd" function in a Compute element.

From the viewer you can configure each alert. There is also an additional way to configure and view the configuration of all alerts at one time. Select from the ribbon *Tools* category *Alerts Setup* button.

Alert Type		Enabled?	Log Frequency	Yellow After	Red After	Run Program	Clear Option
Insteon: Unknown address	Edit	Yes	Never	1	2		Daily
Insteon: Missing command acknowledgement	Edit	Yes	Never	1	2		Daily
UPB: Unknown unit Id	Edit	Yes	Max once a day	5	10		Daily
UPB: Missing sequence in transmission	Edit	Yes	Max once a day	5	10		Daily
UPB: Missing command acknowledgement	Edit	Yes	Never	1	2		Daily
Wireless: Unknown unit	Edit	Yes	Never	5	10		Daily
X10: Unknown address	Edit	Yes	Each time for occurrences 2 to 10	5	10		Daily
Status request and no reply	Edit	Yes	Each Time	5	10		Daily
Confirm receipt needed retransmission	Edit	Yes	Never	1	2		Daily
Confirm receipt failure after all retransmissions	Edit	Yes	Never	1	2		Daily
Program error	Edit	Yes	Max once a day	1	2		Daily
Weather observation failed	Edit	Yes	Max once a day	5	10		Daily
Interface Connection	Edit	Yes	Each Time	1	1		Daily
Connected interface reported error	Edit	Yes	Each Time	1	10		Daily
USB Disconnection	Edit	Yes	Never	1	2		Daily
Power out	Edit	No					
Power restored	Edit	No					
Client disconnect	Edit	Yes	Each Time	1	10		Daily
Category 1 devices overdue	Edit	Yes	Each Time	1	2		Weekly
Category 2 devices overdue	Edit	Yes	Never	1	2		Daily
Category 3 devices overdue	Edit	Yes	Never	1	2		Daily
Category 4 devices overdue	Edit	Yes	Never	1	2		Daily
User Alert 1	Edit	Yes	Never	1	2		Daily
User Alert 2	Edit	Yes	Never	1	2		Daily
User Alert 3	Edit	Yes	Never	1	2		Daily
User Alert 4	Edit	Yes	Never	1	2		Daily

Like the Alert Viewer this shows all the alerts and information about their configuration. Press the *Edit* button to configure an alert.

### Device Overdue alerts

One of the most useful alerts and one that takes some additional configuration is the Alert called "Category x devices overdue". This alert lets you specify a set of devices and a time. The time specified if the duration since that last reception from the device where it will be considered "overdue". That is, HCA should have seen a reception within that time.

This alert can be very useful when working with battery powered devices to make sure that they don't "go dark" and are not heard from.

There are 4 separate alerts that you can use. Why four? The idea is that some devices you expect to be heard from daily, others weekly, and still others are a different time schedule. By sorting your devices into these different categories and configuring separate alerts for each category you can express the different "check in " times.

Configuration for alert:	Category 1 devices overdue			
	Disable this Alert			
When this alert occurrs:				
Create an aler	t log entry Each Time	•		
and show the	roubleshooter alert level Yellow	after 1 📩 occ	currences then Red after 2	occurrences
and start this p	rogram (none)		•	
and clear the a	lert count Weekly	•		
Device Selection				
Crawl Space - Drivew		<u> </u>	Dining Room - Motion detect	
Crawl Space - Sensor			Great Room - Motion Sensor Master Bedroom - Motion de	
Crawl Space - Sensor Dining Room - Lights Down Bath - Ceiling Li	obts			
Dining Room - Lights Down Bath - Ceiling Li Down Hallway - Hallw			Office - Motion Sensor	
Dining Room - Lights Down Bath - Ceiling Li Down Hallway - Hallw Entry - Keypad Great Room - Curio	ay	>>	Office - Motion Sensor Stairway - Motion detector	
Dining Room - Lights Down Bath - Ceiling Li Down Hallway - Hallw Entry - Keypad Great Room - Curio Great Room - Holiday	Lights	>>		
Dining Room - Lights Down Bath - Ceiling L Down Hallway - Hallw Entry - Keypad Great Room - Curio Great Room - Holiday Great Room - Keypad Great Room - Lights	ay Lights			
Dining Room - Lights Down Bath - Ceiling L Down Hallway - Hallw Entry - Keypad Great Room - Curio Great Room - Holiday Great Room - Keypad	ay Lights			
Dining Room - Lights Down Bath - Ceiling Li Down Hallway - Hallw Entry - Keypad Great Room - Curio Great Room - Holiday Great Room - Keypad Great Room - Lights	ay Lights Left		Stairway - Motion detector	

If any device in the set doesn't have a reception within the specified time then the alert happens.

This alert is a bit different that the others. In that the alert can automatically clear when the device is heard from. Normally alerts only clear by user action. But in the overdue alerts, if a device is currently overdue and then is heard from, then any alert for it is cleared.

As with all alerts you can configure an action if the alert occurs to run a program. In the case of overdue alert the program is only run once even if the device continues to be overdue. The program doesn't get run again until after the device has checked in and then goes overdue again. For example suppose that device D is overdue if not heard from in 2 hours. Here is a timeline of what happens.

00:00: HCA Starts

00:50: Device D reception

**02:50** Two hours since device D was heard from so the overdue action happens and that can include starting program P

05:00: Device D is still overdue but program P isn't started

05:04: Device D is received. This clears the overdue alert

07:04: Device D is again overdue. This time program P is run as part of raising the alert

The overdue mechanism only checks every 15 minutes for overdue devices so you can't rely on tothe-minute reporting.

### Per device alerts

Alerts that apply to devices now keep track of the count per device. This means that you can say, for example, "log once" and that means log once per device. The alerts that this kind of counting applies to:

- UPB: Missing sequence in transmission
- UPB: Missing ACK
- Insteon: Message ACK

- Status request and no reply
- Confirm receipt needed retransmission
- Confirm receipt failure after all retransmissions
- Program error
- Overdue devices

While the logging for these alert conditions is driven by the alert setup and the per-device count, the red/yellow/green determination for the alert comes from the totals of all devices.

Suppose, for example if you have the "Program error" configured as "log once a day", yellow after 4, red after 8.

- If program P makes an error it will log since it is the 1<sup>st</sup> for "P" today.
- If program P makes another error it will not log since it is the 2<sup>nd</sup> today
- If program P1 makes an error it will log since it is the first for "P1" today

In this alert (program error) each program treats the log options based upon its own counts. To continue this example, at this point there have been 3 total program errors and that's still a green condition.

If program C now makes an error, it logs – first for "C" today - and since the total count is now 4 a yellow condition exists.

# Alert colors

An alert that appears in the details log doesn't have - in itself - a red/yellow/green level. This is different than the static inspector which classifies all things it finds as red or yellow so each item listed in the inspector report does have a level for it.

The alert mechanism is different and looks at all alert counts and makes a determination if overall there is a green/yellow/red level for alerts. So the determination of the current level is the higher level of the static inspector level and the alerts level.

# Alert manager final issues

There are two issues related to your automation interfaces. Interface capabilities problems are reported as an inspector issue – for example needing a UPB interface but not having once configured. Issues with interfaces configured but not connected are now reported to as an Alert issue.

There is a "disable" for devices to opt out of the alert general mechanism. Suppose for example you have a device that tends to have status request response problems and you have a program that polls it several times to get the result. You may want that device to opt out of the alert mechanism so it doesn't get reported upon.

References						Power T	ack		20 5 11 3		Green	
lame	Notes	Room	Туре	UPB Id	Triggers	Options	Restart	lcon	Display	Log	Groups	Schedul
s made	in the HCA Don't log rec ignals are se Send loggin Don't log tra	log. Use th reptions ent to this de g. nsmissions	is option to evice, a Se	disable rece	ne of the trigg	CA log. Use t	his option to	(	02 			
can be v	watched for	and are con	nfigured in t	he Alert Mar	ager. But the							
can be devices	watched for participate	and are con	nfigured in f anism but s	he Alert Mar ome shouldr	ager. But the							
can be v devices	watched for participate This device og file shoul	and are co in this mech	nfigured in t Ianism but s any configu e log to?	he Alert Mar ome shouldr	ager. But the							

# The Log

Logging is a vitally important first step for troubleshooting because it helps you keep track of what's going on. You can also use the log to help diagnose odd behavior in your home.

The log keeps track of:

- when commands are sent and received
- which interface, if applicable, was associated with the message
- when errors are encountered
- start and stop times
- actions that programs take

As you can see, the log is a file that contains an entry for just about every action that HCA takes.

You can configure HCA to use a single log file, or you can configure up to three log files each assigned to log different actions.

There are two parts to each log. These are:

- The current log file. The contents of this file are stored in a proprietary format and its contents are viewed using the Log Viewer. HCA always has the current log file open.
- The historical log file is stored in a comma separated format and can be loaded into spreadsheet and/or database programs. HCA opens the historical log file only at

midnight so you can almost always access it with other programs (for example, Microsoft Excel or Microsoft Access) in order to view its contents.

## Log Setup

Before discussing how to view the contents of the log, the first steps are to establish where the log files reside, what information is placed in them, and how big the files can become.

These choices are made in the Log setup dialog. There are three tabs for log setup – one for each log.

Log Setup	rep it with other programs (for all		X
Log 1 Log 2 Lo	g 3 Log Reset		
Log Name: Prin	nary Log		
What to log			
Tum logging	on		
Log comman	ds sent		
Log comman	ds received		
Log when pr	ograms start and stop		
Log execute	d program elements		
📃 Log each tim	e a flag value changes		
For protocols	that separate addresses from commands, log received address separate from command		
Log room on	off and auto off timers for devices and rooms		
What to do with	og entries		
Retain 500	current log entries. Can be viewed in the log viewer.		
Retain 5000	historical log entries. Can be loaded into spreadsheet and database programs.		
Where to store th	ie log		
Current log file	$\label{eq:c:locuments} C:\label{eq:c:locuments} C:eq:c:locumen$		Browse
Historical log file	$\label{eq:c:locuments} C:\label{eq:locuments} C:eq:locument$		Browse
		ОК	Cancel

Each log is given a default name "Log 1", "Log 2", "Log 3" but that isn't very descriptive. It is a good idea if possible to name the logs somehow associated with their intended use. In the above example the log names are "Primary Log", "Program Log", and "Port Interface Log". There are advantages in naming the logs with something descriptive. Each device and program and interface can specify where they log. The choices are made by the log name. Also the troubleshooter log viewer tab names use the log names you enter.

The next option in this tab, **Turn logging on,** controls whether or not logging takes place at all. Until this option is checked, nothing is placed in the log, regardless of the other settings in this tab.

#### Where to store the log

Once you've decided that you want to log HCA activities, you need to provide the path of where the log files are to be placed. Use the Browse button to locate and specify the directory to use and the file name for each file.

#### What to do with log entries

Associated with both log files are separate *retain* values. The operation of these two files and their *retain* values is as follows.

• At midnight of each day the number of entries contained in the current log file is compared to its retain setting. If there are fewer log entries than the setting, nothing more is done.

• If there are more entries than the retain setting, the oldest log entries are moved from the current log file to the end of the historical log file. The number of entries moved is the number necessary to bring the entry count of the current log file down to the retain setting. If there is no historical log file, the excess log entries are simply deleted.

Once the current log file has been pared down to its retain value, the same operation is performed on the historical log to reduce it, if necessary, to the number of entries in its retain value. Any excess entries removed are simply deleted.

HCA can operate without an historical log file. Without an historical log file, only those entries in the current log will be retained and only up to the limit specified in the "retain" value.

#### What to log

The other options in this dialog allow you to determine what activities are entered in the log. If an option is not checked, that type of entry is not included in the log.

#### Log commands sent

Check this box, and every time an On, Off, or Dim command is sent to your interface hardware, HCA enters it into the log.

#### Log commands received

Check this box, and every time an command is received from your interface hardware, HCA enters it into the log.

#### Log when programs start and stop

Check this box if you want to log whenever a program starts or stops. Unlike the "Log executed program elements" option, this option only adds log entries when a program starts running and when it stops. No other executed elements are logged.

#### Log executed program elements

Check this box if you want to log program elements. This means that for every program that is started, as each element of the program is executed, HCA makes an entry in the log. You may find this useful for verifying new or modified programs perform as you expect them to.

#### Log each time a flag value changes

Check this box if you want to log whenever one of your flags changes its value. Flags are described in the *Programs* chapter.

#### Log addresses received separate from commands

Used only for older X10 commands. X10 commands are received in pairs with an address and a command. HCA can consolidate this into one entry in the log, for example "A1 ON". If you would rather see a log entry for each reception, enable this option

#### Log room on/off and auto off timers for devices and rooms

The log can show when rooms are determined to be on and off and the action of auto off configuration for devices.

Note: When configuring each log the paths to the log files must be different from each other!

In the configuration for each interface - HCA Options Hardware tab - are logging options.

For example,

Interface Configuration	x
Logging Log entries associated with this interface go to: Primary Log	•
OK Cancel	

Using this, each interface can direct any log entries for it to a specific log.

In addition to this, any device or program can also direct log entries for it to their own log. This choice is made on the Log tab of a device, or program properties dialog.

Entry - Keyp	oad Pr	opertie	s	-	_		_	_		-			_	_	_	×
Name N	otes	Room	Туре	UPB Id	Triggers	Options	Restart	Icon	Display	Key Names	Log	Groups	Schedule	References	Power Track	Green
_											,					
								or this de	evice, a Re	eceive entry						
is made in	n the H	ICA log.	Use this	option to	disable rec	eption log	ging.									
Do	on't log	g recepti	ons													
When sig disable Se			o this de	vice, a Ser	nd entry is r	nade in th	e HCA log	). Use th	nis option t	0						
Do	on't log	g transmi	ssions													
Which log	g file s	hould thi	s device	log to?												
Log to	o: P	rogram L	00			•										
			- 3													
															ОК	Cancel

For devices, in addition to choosing a specific log, you can also direct the device to log to the same log that is used by the device's interface.

For example, if a UPB interface is configured to use Log2, and a UPB device is configured as *Log for this device protocol* then it entries for it go to Log2. If the UPB interface was subsequently changed to use Log3, then the device follows and now entries for it go to Log3.

# Log Viewer

Each log has a viewer associated with it that can be opened from the log button in the ribbon Control category.

intry	Date	HW	Cmd	ld	Name	Info
●X10	3/6/2016 12:41:51 PM	W80	OFF	E8	Motion - Moti	
X10	3/6/2016 12:41:51 PM	W80	OFF	E8	Office - Motio	
X10	3/6/2016 12:41:55 PM	W80	OFF	E5	Motion - Moti	
X10	3/6/2016 12:41:55 PM	W80	OFF	E5	Great Room	
<b>UPB</b>	3/6/2016 12:59:43 PM	UPB	ACTIV			House Yellow
UPB	3/6/2016 1:05:01 PM	UPB	ON	042	Crawl Space	
Note	3/6/2016 1:05:06 PM					Weather observation taken
UPB	3/6/2016 1:05:07 PM	UPB	OFF	042	Crawl Space	
X10	3/6/2016 1:17:16 PM	W80	ON	E5	Motion - Moti	
X10	3/6/2016 1:17:16 PM	W80	ON	E5	Motion - Moti	
X10	3/6/2016 1:17:16 PM	W80	ON	E5	Great Room	
X10	3/6/2016 1:17:27 PM	W80	ON	K8	Programs - H	
X10	3/6/2016 1:17:27 PM	W80	ON	K8	Motion - Moti	
X10	3/6/2016 1:17:27 PM	W80	ON	K8	Motion - Moti	
X10	3/6/2016 1:17:27 PM	W80	ON	K8	Dining Room	
ROff	3/6/2016 1:17:27 PM				Dining Room	Room Triggered ON by: Dining Room - Motion d
AutoX10	3/6/2016 1:17:28 PM				Dining Room	Room Triggered Off by: Dining Room - Motion de
X10	3/6/2016 1:18:39 PM	W80	OFF	E5	Motion - Moti	
X10	3/6/2016 1:18:39 PM	W80	OFF	E5	Great Room	
X10	3/6/2016 1:18:51 PM	W80	OFF	K8	Motion - Moti	
X10	3/6/2016 1:18:51 PM	W80	OFF	K8	Dining Room	
ROff	3/6/2016 1:18:51 PM				Dining Room	Room Triggered ON by: Dining Room - Motion d
AutoX10	3/6/2016 1:18:53 PM				Dining Room	Room Triggered Off by: Dining Room - Motion de

At first glance, the Log Viewer appears very complex but don't panic! The log viewer contains these items:

- A large display area lists each log entry—one per line. Each entry contains these items:
  - The type of entry
  - The date and time it was added to the log
  - The automation interface used if there is one. For an interface connected to a serial port, the port numbers is enclosed in ()'s
  - For Send and Receive entries, the type of command sent or received
  - The address or id or the transmitter or receiver. For X10, this is the house code (HC) and unit code (UC). For UPB, this is the unit id of the device, and for Insteon the address of the device.
  - The name of the device, program, group, or controller for this entry.
  - Any additional information or notes
- Along the bottom, an area labeled *Filter* provides options you can use to see just certain kinds of entries that the log contains.
- A *Clear* button. Click it to move the contents of the current log to the historical log and totally clear the current log file.
- A *Copy* button. Select a range of entries in the log then press the copy button. This places the log entries on the Windows clipboard. This is a very useful way to send sections of the log to Technical Support.
- A Push-pin that can stop or resume the log from updating while you have it open on the screen. When *pinned*, no new entries appear. When *un-pinned* any receptions, transmissions, programs, etc that are happening in the background log in real time as they occur. You may want to pin the log while you are looking though it, sorting, filtering, etc. When *un-pinned*, the log viewer jumps to the top or the bottom depending upon the sort when something in the background adds an entry while the log viewer is open.

Entry type	Used for
Note	For general messages.
Send	For commands sent.
	There are many different sib-types of Send for the various protocols: X10, UPB, Insteon, Zwave, etc.
Receive (Rcvc)	For commands received. These are for commands whose source or target matches a device, group, or program in your design.
	Like Send there are different sub-types of Receive for the different protocols.
Program (Pgm)	For programs when they start, stop, and for each element while a program executes.
	There is also a sub-type used to show program errors.
Error	For problems.

There are different types of log entries that you may see. They appear in the Entry column. There are these general types

For send and receive log entries, each interface type – Insteon, UPB, IR – has a different color and you can use the colors to quickly see where the messages are coming from if your automation solution integrates different protocols.

**Hint:** Remember that depending upon the configuration you can have a log record only a subset of these possibilities. For example, a log can be configured to save only entries about programs.

When HCA generates a log entry it checks each log configuration to see which log it should add it to. This is done in order and the 1<sup>st</sup> log that is configured for that type of entry receives it.

For example, if Log1 and Log2 – whatever their names – are both set to log program elements, Log1 will always receive those log entries since it is the first one checked.

Entry type	Used for		
ON	On command		
OFF	Off command		
DIM	Dim command		
BRT	Bright command		
AUF	All Units Off command		
ALO	All Lights On command		
ALF	All Lights Off command		
S-REQ	I     Status On       F     Status Off		
S-ON			
S-OFF			
ADDR			
GOTO	UPB Goto command		
FADE+	UPB Fade up command		
FADE-	UPB Fade down command		
FDST	UPB Fade stop command		
ACTIV	UPB Activate command		
DEACT	UPB Deactivate command		
BLINK	UPB Blink command		
IR	IR transmission		

There are several types of entries in the *Cmd* column. They show what type of command was sent or received. The Log Viewer shows these as:

### Using the Log Viewer

In working with the Log Viewer, there are a few things you can do to make it easier to see and use the entries:

- You can resize each column (with the mouse pointer) by dragging the breaks between the column headers in either direction, to make the columns larger or smaller.
- Click a column header to sort that column. The first time you click the column it sorts in ascending order. If you click it again, it re-sorts into descending order. The sort column is show with a gray background. The column header shows the sort direction with an upward pointing triangle (sort ascending) and a downward pointing triangle (sort descending).

# Log Filters

When viewing the log it is often difficult to focus on the specific data you want to see. The log filters allow you to select:

- Only a specific type of long entry such as Notes, Sends, Receives, etc.
- Only entries for selected devices, programs, groups, and controllers
- Only entries for a specific date, time, or range of dates and times.

In addition to selecting the type of entries to view, you can also specify the order these entries display in the log viewer.

Each filter you create must be given a name. Once you have created a filter, it is saved with your design file.

To manage filters click on the Filters button at the bottom of the log viewer window. This opens the filter management window and in it list all the filters and their effects.

Filter Name			View count	
LV	Edit	Delete	0 / 1786	
temp	Edit	Delete	0 / 1786	
only send	Edit	Delete	71/1786	
Errors today	Edit	Delete	0 / 1786	
Chime	Edit	Delete	0 / 1786	
Only errors	Edit	Delete	0 / 1786	
only garage motion	Edit	Delete	7 / 1786	
Bath motion	Edit	Delete	0 / 1786	
Logged in last 10 minutes	Edit	Delete	0 / 1786	
Logged in last hour	Edit	Delete	19 / 1786	
Logged today	Edit	Delete	1286 / 1786	
Test Sort	Edit	Delete	1786 / 1786	

At a glance you can see which filters you have and how many entries would appear in the log viewer using each filter. From this dialog you can edit or delete the filter using those buttons. To edit a filter you can also double-click on the row for that filter.

To create a new filter, press the New Filter button. The filter creation dialog opens as:

Log Filter	×
Name: Only Downstairs	
Select only these types of entries	
✓ Note ✓ Error ✓ Unexpected ✓ Program ✓ Send ✓ Receive	
Iselect only entries for these devices, programs, and groups	
Select only entries for these devices, programs, and groups     Opevices Crawl Space - Driveway Sensor     Down Bath - Ceiling Lights	
Crawl Space - Sensor Power  Crawl Space - Sensor Power  Programs  Down Bath - Motion detector  Down Hallway, Hallway,	
O Groups Entry - Keyad	
Rooms     Great Room - Curio     Great Room - Holiday Lights	
Great Room - Keypad Great Room - Lights	
Select entries by date and time	
O Any time on days between 11/ 9/2013 ▼ and 11/ 9/2013 ▼	
○ Any time between 12:00:00 AM and 11:59:59 PM on days between 11/ 9/2013    and 11/ 9/2013	
Special time conditions     Last hour	
Select only entries from this interface UPB PIM(4)	
Sort By	
Type	
OK Cancel	

The creation dialog for a filter is complex. It contains these sections.

#### Filter Name

Provide a descriptive name for the filter that you wish to create and save.

#### Select only these type of entries

If you want to limit the entries you see in the log display to only some kind of entries, check this option and then check the kind of entries you want to see.

#### Select entries for devices

If you want to limit the entries you see in the log display to only selected devices, programs, groups, and controllers, check this option. Then using the two lists move what you want to the right hand list. The option buttons on the left control what sort of things you see in the left hand list.

#### Select entries by date and time

To select entries created during a range of dates or times, check this option and then choose the selection type and the date/time range.

#### Select only entries from an interface

If you want to show only entries that are tagged with a specific interface.

#### Sort By

To control how the log entries are ordered in the log viewer when this filter is active, select the column to sort and in what direction.

In this example, a filter called *Downstairs only* is being created. Three devices are selected and only entries logged in the last hour are selected. When this filter is active the log viewer shows only entries for those three devices and only entries logged in the last hour.

**Note**: For an entry to pass the filter **all** the criterion must be met. Each log entry is checked and it must pass each selected criterion. In this example an entry must be made for one of the three devices and must be made in the last hour. There is no way to create a filter that passes entries that meet one set of criterion or another set of criterion.

### Show Log

Device, Programs, Groups, and Controllers have a right-click popup menu pick called ShowLog. What this does is to create a filter for showing just that object (or objects if there is a multiple selection) and opens the log viewer with that filter. This allows you to quickly focus in on one object and see what the log contains for it. These special ShowLog filters are temporary and are deleted when the log viewer is closed.

### Log Focus

There is an additional tool in the log viewer to give you to method to locate useful information in tracking down problems. If you double-click on a line in the log viewer a "Focus" dialog opens.

Focus Log on	×					
V Object	Crawl Space - P					
Room	Crawl Space					
Entry type	Pgm					
Interface						
	of conds before: 0 1 0 1 Minutes : Seconds after: 0 1 0 1					
	OK Cancel					

You can choose what you want to focus on. The log entry you double-clicked on pre-loads the details into this dialog and from the checkboxes you can specify what you want to focus on. Each box checked tells the focus to show only those log entries that have all of those properties.

But this is more than a simple filter. The "context" settings let you not only see the log entries that meet the filter requirements but also to show log entries before and/or after these to show the context of what you are looking at.

For example suppose that you focus in on a program but that program is started by some reception. Using the context settings you can focus on the program and the action that started the program. In effect the settings in the top section of the dialog tell what you want to see and the settings in the bottom part of the dialog give you the log contents "around" what you want to see.

Once you close the focus dialog with OK then the log viewer shows the focused entries. At the bottom of the log viewer is a "Back" button to remove the focus.

You can create a new focus on a view that was itself created by a focus. The back button moves you back a focus level.

	Date	HW	Cmd	ld	Name	Info
•	3/5/2015 6:10:25 AM				Crawl Space - P	Start here
I	3/5/2015 6:10:25 AM				Crawl Space - P	Compute void=_On("Home-My Lights")
1	3/5/2015 6:10:25 AM				Crawl Space - P	_on("Home-My Lights") No such device or group or UPB Device name
2	3/5/2015 6:10:25 AM				Crawl Space - P	Exit
					m	
	with: No Filter		Filters			Back Cear Copy to clipboard

The log focus has one additional property. You can have the focus go back into the historical  $\log -$  if you have created one – a number of days. This is the only time that HCA itself supports viewing of log entries in the historical log.

Why would you use this feature?

The log is a great debugging device but it can be difficult to find what you are looking for and more importantly the "context" of what you found. This feature lets you answer the questions like, why did this device go on at this time and discover from the context the other things happening around that time.