THE Z-WAVE ALLIANCE CERTIFIED INSTALLER TOOLKIT USER'S GUIDE

Version 0.5

Basis: v2.3.0-34-gcf63f8b

February 23, 2017

47467 FREMONT BLVD.
FREMONT, CA 94538 USA
Z-WAVEALLIANCE.ORG

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INTRODUCTION

The Certified Installer Tool (CIT) is designed to aid in the installation of new Z-Wave networks and the diagnosis of Z-Wave networks that are experiencing issues. For all uses except when tracking down a source of noise, the CIT should be physically located in the same place as the customer's own gateway controller. The reason for this is that the CIT should then be able to hear and transmit the same Z-Wave signals as the customer's gateway, and it will be able to easily talk to the gateway to get information from it.

The CIT is used by placing it in the network that you wish to troubleshoot or verify after installation. This allows the CIT to get network information from the primary controller (gateway) as a node in the network. It is important to remember to remove the CIT from the customer's network so that you do not inadvertently create a "bad node" in their network when the CIT is taken off the premises.

We will be enhancing the CIT very much in the future; we have a long list of todo items and wishes, but please take a moment to drop us a line and let us know of any feature that would help you in your job. Contact us at CITFeedback@Z-WaveAlliance.org. The mailbox is not checked frequently so please do not use this email for any support related issues.

KNOWN LIMITATIONS

Z-Wave did not have any installer tools or diagnostic features only a few years ago. The CIT is fully utilizing what is available today and will be updated – along with Z-Wave – and keep adding diagnostic features as soon as they are developed by Sigma Designs. As most of the diagnostic features used by the CIT are available to controllers, use the CIT when the manufacturer of your customer's gateway controller does not have diagnostic tools embedded into it, or when the diagnostic tools are a smaller subset of what the CIT offers.

The CIT cannot get information from the nodes of a Z-Wave network where Sigma Designs has not provided a mechanism to do so.

This is an important thing to remember because often the CIT will present information such as a neighbor table, but the neighbor table was obtained from the CIT itself; it is not possible to get the ***actual*** neighbor table from the customer's primary controller because there currently is no mechanism to get this information. If the CIT is placed physically near the customer's primary controller or the node being examined, then the CIT will present a good approximation of what the customer's controller or device should also be experiencing. The CIT will present as much information as it can, but in a network made up of a mix of newer Z-Wave nodes and those from several years ago, features that do not exist in the older nodes may prevent useful information from being able to be retrieved or measured.

GETTING STARTED

Please refer to the quick start guide that came with your CIT to get connected to the CIT's user interface (UI). This section discusses getting started using the CIT after you have successfully connected to the user interface.

The first time you access the CIT, you will be prompted to enter information to assign the CIT to your Z-Wave Alliance account. **As these evaluation units do not have all of that software functioning yet**, let's walk through a few setup items that you should do the first time you start using your CIT:

SETUP

- At the top of the UI, to the right of Analytics, click on the GEAR icon to access the CIT setup:
    - Click Language and then click on the flag of the country whose language you wish to use on the user interface.
    - Click System Settings, and enter a CIT Identifier that will help you to know which CIT this is for companies that have multiple CIT units or are leaving CIT units at customer sites.
        - Also select a Date format, Time format, and Time zone that you wish to use the CIT with.
    - When you are done setting the language and system settings, click the green Save button at the bottom of the System Settings, and when you get the message that it is done saving the Settings, please reboot the CIT by removing power, wait a few seconds, plugging the power back in, and accessing the UI again with the help of the Quick Start Guide.

NAVIGATION

The CIT has one menu across the top of the user interface along with the current time and the number of Z-Wave commands (Jobs) in the CIT's Z-Wave command queue. When there are a high number of jobs listed, results of some commands will take longer to show up in the user interface.

Home (Icon)

The house icon represents the home screen, which is where you will get a summary of the network that the CIT is a part of (if it is included into a network) as well as providing a place where you can join or leave a network, assign a name to the network, take notes, or backup/restore the network.

Include Into Network or **Leave network (name)** – This button, under the heading "Enter / Leave different Networks" will change depending upon whether the CIT is a part of your customer's Z-Wave network.

- When the CIT is not a part of a network, the banner under the top menu will be green, and the button will show "Include into Network". Start the process of including a new node (or including a controller, or replication send) on the customer's primary controller, and click this button to have the CIT included into the customer's network.
- When the CIT has been successfully included into a network, the banner under the top menu will be red, and this button will change to "Leave network (name)" where (name) is the text shown on the left under the "Network name" section. In this case, start the Exclusion process on your customer's primary controller and click this button to remove the CIT from the customer's network.

Backup and Restore – These buttons will make a copy (Create Backup) of the node information for the network that the CIT is a part of. In other words, the names of the nodes and their device descriptions, association information, etc. This information is placed into a file which is immediately downloaded to your browser for safe keeping on the device that you are using to access the CIT interface. Use the Restore button to browse to a previously saved backup to have the node information restored. Note: This does not add or remove nodes to/from the network, only the descriptive information that goes with those nodes.

User Guide – This button accesses this user guide. It will attempt to access the latest version if there is Internet connectivity, otherwise it will display the version of this guide embedded into the CIT.

Network name (pencil icon) – Clicking the pencil icon next to the network name will allow you to set a name for the current network. This name is used in several places in the UI and is displayed in the banner at the top of the page so that you will always know which network you are working on.

Notes (pencil icon) – Clicking the pencil icon under the Notes section allows you to enter freeform text that is saved in the CIT or in the data file downloaded with the Create Backup button.

Device

The menu items under the device menu allow you to get information about or work with Z-Wave devices in the network.

Status

The status page gives you a quick status of the devices and when it was that the CIT last heard from each device. You can click the green circle at the end of a device row to cause the CIT to attempt to communicate with that device, or click the blue Check all button to have the CIT try to reach all of the devices (which may take a long time depending upon the size of the network).
If a device line shows a red magnifying glass icon with a line through it, this indicates that the CIT has not completed interviewing that device to learn of its capabilities.
You may click on a device name to be taken to the various configuration and test functions for that device.

Type info

The type info page goes into more detail regarding the devices in the network, showing you at a glance which ones are included securely into the network (green padlock instead of red), which support Network Wide Inclusion & the Explorer Frame (NWI & EF), which are Z-Wave Plus devices, the Z-Wave library version, the Vendor/Manufacturer of the device, the product name (if it was found), the device firmware version (manufacturer version), and the Z-Wave device type for the device.

Configuration

Clicking on the device's name in several other pages, such as Device/Type info, will also bring you to this page. This is not a standalone page as it will take you to the device properties of a node, and you can select the other nodes in the network using the list on the left hand side. This page has several functions accessed by clicking on the tabs at the top. The Device/Configuration function tabs are as follows:

Interview

This tab allows you to view or control the results of the device interview. When the CIT is added to a network, it attempts to contact all of the devices in the network (listening devices) so that it can get detailed information about that device and the command classes that it supports and controls. Information about the device and bar graph showing the interview progress are shown.

- Call for NIF – Pressing this button will ask for the device's Node Information Frame (NIF) and it will cause the interview to start all over if the NIF is received.
- Force Interview – If the NIF is already retrieved, this will force an interview that previously stopped (perhaps due to too many attempts) to be retried.
- View Interview Result – this allows you to see the results of the individual items that the interview process is asking for from that particular device, and

you may also force the individual items to be retrieved by clicking on a button to force the CIT to do that interview item immediately.

- Select Device Description – this allows you to apply a known device description to the node, in the event that you are aware of the exact make and model of the device. This will short circuit the interview process by bringing in the information for that device that were previously established by somebody else. This is particularly useful for battery devices as their interview may not be easy to complete due to their sleeping nature.

Configuration

This tab will display a UI to change settings of a configuration nature, such as the Configuration Command Class, Switch All Command Class, Protection Command Class, etc. If the device does not support any of these, in the current version, the user is taken to the Expert commands screen so that any commands that are possible with this device may be shown.

Association

The Associations tab allows you to work with the device's associations through the Association Command Class (or other association command classes if present). The screen lists the association groups reported by the device, and any associations that are present in any of those groups.

- Update from Device – This will cause the CIT to re-request the association information from the node shown above the button.
- + (button) – The "plus" button is shown for any association group that has not used up the maximum number of associations supported in the group. If all of the associations for that group are in use, it will be necessary for you to first remove an association before the + button will appear, allowing you to add/set a new one.
- X (button) – Clicking the red X button next to an associated device in an association group will cause the CIT to remove that association.

Link health

The Link health tab shows you the strength of the link from the node selected at the top of the page, to each of the other nodes in the network. It is not necessary to know the link health between every node in the network, but this is useful if there is a reason for two nodes to directly communicate (e.g. associations) or if you are trying to track down a failure point in the network and need to examine the link quality between certain nodes. The result shown under the Link quality column will be a circle with a color code indicating at a granular level, the quality of the link between the two nodes.

Expert commands

This page presents a dialog for doing Set and Get operations on the command classes present in the device selected at the top of the page. As the name implies, use of these should be for experts

who have a familiarity with the Z-Wave Application Layer. Some of the functions available here are duplicated from the Configuration and Association tabs.

Firmware update

If the device chosen at the top of the page supports over-the-air firmware updating, then here is where a URL to a firmware file, or a file uploaded to the CIT from the device you are connecting to the CIT with can be loaded to the device. If necessary, a Target ID may be required from the manufacturer.

Active associations

The Active associations page provides one place to list all of the associations that have been retrieved from the nodes in the network during the interview process. On this page a comprehensive view of all of the associations can be seen. Note that a device attempting to send to a node that no longer exists, perhaps because it was replaced with a newer model, will cause delays in the device attempting to reach the now missing node. For this reason, you want to make sure that there are no orphaned associations in your network.

Network

The Network menu option allows you to access information pertaining to the entire network, or items affecting multiple nodes. Here are the menu options under Network:

Control

The Control page provides access to controller functions. The CIT is being fully certified as a gateway controller and as such has the ability to carry out all of the required network commands. At this time, documentation and usage scenarios for these functions is being prepared for a future release of this guide. Please refrain from using the functions on this page unless you know very specifically what the function is for and how it is used. For diagnostic purposes should it be called for by support, clicking the "Controller Info" link at the top right column will display information about the CIT controller and its version information.

- **Controller Factory Default** - Controller Factory Default is need only in the event that the CIT was removed from the customer premises without being excluded from the customer network first. This leaves an orphan node in the customer network and should be corrected at the earliest possible convenience. This button may be used to reset the CIT so that it may be used with another network. Once this has been done, "Remove Failed Node" on the customer's gateway must be used to remove the orphan node from the original customer network that the CIT was added to.

Statistics

Statistics is a new feature and as such, is being further developed. The Statistics page conveys information about Z-Wave frames transmitted on the network that it is a part of.

- **Update** – The update button will re-draw the bar charts using information collected since the last reset.
- **Reset** – This will reset the statistics information collected by the CIT. Use this after you have made changes to the network and wish to re-measure the network statistics to see new results. As it may take a while for the CIT to hear enough information to adequately represent the latest statistics, this should be used sparingly; use after many/all of the desired changes have been made and allow for adequate time for new statistics to be collected.

- **Frames with Frequency Backoff** – this bar represents how often a transmission was delayed waiting for the desired transmission channel to be available. With newer Z-Wave devices, the unavailability of one of the transmission channels can cause the node to switch to a different speed channel.
- **Number of corrupted CRC8 Frames received** – frames transmitted using a cyclical redundancy check (CRC) can be verified as having been received without any data degradation. Frames that fail this check are indicated here.
- **RFRxForeignHomeID** – this represents the number of frames in the network that the CIT is a part of, measured against frames heard from another (foreign) Z-Wave network such as one from a neighboring residence.

Neighbors

Neighbors shows you the relationship of each node in the network to each other node in the network by indicating information about the route that would be used for them to communicate. Nodes do not communicate with themselves, and so the series of gray squares running diagonally from top to bottom, left to right represent intersections of the same node number. To read any other neighbor relationship, pick a node along the left hand side of the chart, and then move along that row to your right until you are under the column numbered for the node that you wish to check the neighbor status. If a square at a desired intersection contains an asterisk, this indicates that there is an association between those nodes, and so the neighbor status should be made to be good. The neighbor status is indicated by color using the chart at the bottom of the page.

- **Update** – Clicking the Update button at the end of a row for a node will cause the CIT to retrieve the latest neighbor information for that node.
- **Update all** – This updates the neighbor information for all nodes in the network.

Timing Info

The timing info page is useful for seeing, at a glance, which nodes are using multiple hops to communicate because their time for a transmission is long. Long transmission times can also indicate other network problems. The “Last packets” column shows the time, in 10ms units, for the last 10 transmissions to that device by the CIT. The Total column shows the number of transmissions, and the Ok column shows what percentage of those transmissions were successful. Transmissions that encountered difficulty, high latency, or failed are indicated in red as the key at the bottom of the page shows.

- **Update** – Clicking this button will update the timing information shown on the page.

Network Map

The network map page is a graphical representation of the same information on the Neighbors page. It is useful for determining – at a very quick glance – how well the network is meshed for any given node. The nodes are displayed according to the number of connections that they hold when you initially enter the page, so note that the nodes in the same row may appear to only have a connection to one another left and right. Using your pointing device, click on a node and hold it while you drag it to another portion of the screen; this will then highlight the true connections that the node has to other nodes in the network. The layout of the nodes on the page is not saved. The network primary controller or SIS is indicated with a blue circle.

Analytics

The menu items on the analytics tab are used to perform deeper analysis of what is going on in the network in terms of the Z-Wave RF signals, and the Application Layer Frames of data.

Zniffer

"Zniffer" is the name of a popular Z-Wave SDK diagnostic tool by Sigma Designs; it is a shortened form of Z-Wave Packet Sniffer. Zniffer displays the partially decoded Z-Wave frames so that you can see the actual command class and command that was sent or received. In this version of Zniffer, the CIT is using an eavesdropping mode of the Z-Wave library, which means that it only displays frames heard for its own network, and does not show certain special Z-Wave frames such as the "Beaming" signal that FLiRS devices use and the protocol messages exchanged during network events such as inclusion, exclusion, replication, etc. It is very useful when you have confirmed that the network has a robust health, but perhaps a node is still not reacting to the receipt of a transmission from another node as the customer is expecting. For example, when an association is set up between a dimmer switch and a controller, the dimmer switch – upon being turned on locally – may send a BASIC REPORT command when the receiving controller may have been expecting a SWITCH MULTILEVEL REPORT. These types of signaling issues are normally handled by an integrator with additional knowledge regarding the application layer of Z-Wave. For the installer or integrator, Zniffer is a great tool for determining that nodes are communicating at the application level.

The information displayed on this page is the same as the Zniffer history page – please go to that section for more information.

- **Play (button/icon)** – When the screen is first entered, Zniffer is not running and will indicate this by having the STOP button highlighted. Clicking the play button will start Zniffer displaying the frames that it hears.
- **Pause (button/icon)** – When the pause button is clicked, the display of captured Z-Wave frames is suspended until resumed by pressing Play or stopped by pressing Stop.
- **Stop (button/icon)** – The stop button stops the display of frames on the page.

Background Noise

Z-Wave devices may select from one of two RF channels to transmit information. If a Z-Wave device is sending at the 9.6Kbps or 40Kbps rates, it is using Channel 1. If the device is sending at the 100Kbps rate, it is using Channel 2. The background noise page shows the effects of RF noise and how it may affect your Z-Wave network. The information to be retrieved from this page is the "Noise Floor", which is the typical level of noise in the location where the CIT has been installed. In the case of the CIT being placed physically near the central controller, the CIT can measure the noise floor at the controller. If you were to draw a line across these two graphs (which will be done for you in a future release) at the point at which it is darkest – eliminating the spikes that go higher – this is your noise floor. You should have very few spikes above this level. If you have a lot of spikes above this level, then you have a very noisy RF environment for

Z-Wave and steps should be taken to try to reduce the cause of the noise. The noise floor, once established, will help you examine transmissions subject to difficulties because of noise on the Zniffer page(s).

The Zniffer page shows you the Speed (if it was able to be determined) and the RSSI of the frames received. RSSI stands for Receiver Strength Signal Indicator – it is a measurement in dBm (decibel-milliwatts) of the strength of the RF signal that brought the frame to the receiving node. Typically, it is good to have about a 20dBm difference between a transmission and the noise floor shown on the background noise page. If the noise floor of Channel 1 appears to be -60dBm, and Zniffer is showing transmissions with an RSSI of -50dBm or lower, then signals may be starting to be affected by background noise. Z-Wave may be having to retransmit often or wait for openings in the noise to make a transmission, slowing down your network performance.

If a home's noise floor is around -70dBm or lower, this is normal. -80dBm or lower is preferred, but it is not uncommon to have -70dBm or lower.

Using your pointing device, you may hover over points along the graph to see the precise measurement and time of any point in the graph.

Noise Meter

The noise meter examines the "floor" of the RF traffic in the Z-Wave frequency spectrum for each channel that Z-Wave uses. (Channel 1 for 9600bps and 40Kbps, Channel 2 for 100Kbps) When the noise floor is sufficiently low, the meter will show green. When there is RF traffic on these channels, the levels may turn yellow or red. It is normal to see the meter go yellow or red for normal Z-Wave transmissions, but long, sustained periods of being yellow or red indicate a potential source of noise on that frequency other than Z-Wave, or a Z-Wave node that has gone bad and is transmitting too much.

Zniffer History

Zniffer history is the same as the Zniffer page, but the collection of frames never stops. All of the frames that have been collected by the CIT are available here. The page will show the most recent frames, and using the numbered buttons and forward/back buttons at the bottom of the page, you can navigate through the pages of frames to find what you are looking for.

The information shown by Zniffer is as follows:

- **Date** – The date the frame was heard according to the date set on the CIT.
- **Time** – The time the frame was heard according to the time set on the CIT.
- **SRC** – The source (transmitting) node number. Next to SRC is a funnel icon. Click on this icon and you can filter the display to show only a specific node, or to hide a specific node from the display.
- **DEST** – The destination (receiving) node number. Next to DEST is a funnel icon. Click on this icon and you can filter the display to show only a specific node, or to hide a specific node from the display.

- **Speed** – Newer Z-Wave nodes have a way of returning information which includes the speed at which the transmission took place. Most of the time, this information is not available. If it is available, it is shown here.
- **RSSI** – Receiver Signal Strength Indicator is a measurement of the strength that the Z-Wave signal was heard in dBm. If the CIT is placed physically near the customer's gateway controller, you can expect that the customer's controller is receiving signals with the same approximate strength shown here.
- **Hops** – If the frame was sent by routing through other nodes, then the number of hops is indicated here. A value of 3 hops indicates that the signal was routed through 2 other nodes to reach the destination.
- **Encaps** – If the message was sent using any Z-Wave encapsulation methods, they would be indicated here. Encapsulation methods include Multi Command (multiple commands in one frame), Multi-Channel (data from or to an endpoint of a multi-channel device), CRC16 (a 16 bit cyclical redundancy check), Security S0 or S2 (encrypted data), Supervision or Transport Service.
- **Application** – This is the actual application layer command class and command. For example, Version Command Class Report indicates that a Report type command for the "Version" Command Class. This would be an example of what a node would send after another node issued a Version Command Class Get to the node.

TROUBLESHOOTING

Now that you are familiar with the screens of the CIT, let's take a look at how you can diagnose specific things about the Z-Wave network being examined.

Missing communication, delayed execution of commands or nodes that appear in the failed node list indicates problems in Z-Wave networks. For trouble shooting it is helpful if the problem nodes are already identified however sometimes the whole network seems to be infected.

To find the root causes of the problem follow the steps below:

Defect and/or nonconforming electrical gear causing noise (baby monitor, old cordless phones, wireless speakers, motors …)

Check Noise Floor. The noise floor is the middle line of the viewgraph. If < 80 dBm you are fine, if its > - 60 dBm it can cause severe problems. You can move the CIT to find the direction of the noise source. Use instant noise floor testing for this. The Noise Meter provides instantaneous measurements of the noise floor – look for prolonged periods of the meter(s) being red.

Other Z-Wave Networks nearby

If you see too many spikes above noise floor this is an indicator that other Z-Wave networks may be interfering with your network. You can verify this with network statistics and compare the portion of foreign Z-Wave frames to the total amount of received frames. Please keep in mind that Z-Wave devices have to comply with the 1% duty cycle rule.

Faulty behavior of devices in own network (e.g. endless loop)

Check the Zniffer!

Weak mesh of devices

It is the best if you already know the trouble making devices. You can test their connection to the controller and to the devices they have association connections to. If the device in trouble does not have a stable direct link to the controller or the associated device, you need to dig in and fix the routing. Look at the network map to see problems with routing.

Weak signal of devices

Use Zniffer to look at the traffic between nodes and the RSSI to determine the links that have a low (e.g. < -60 dBm) connection strength between two devices that are communicating. If the device has a low number of routes, it is advisable to add a node in between as two strong hops are better than one weak one.

Wrong configuration - Polling

Check the Zniffer – devices should be getting polled, or sending unsolicited frames, more often than the 1% duty cycle of the network. Polling is done by the controller (change the setting for anything polling too often) and unsolicited frames are usually caused by bad configuration settings in the device.

Dead Associations

Check the association overview! See “Occasional Delays” below for further details.

No Battery Levels / Reports

Battery level can only be obtained by the CIT if it “eavesdrops” on the battery level being sent to the primary controller at a wake-up event; it is very rare. However, a lack of accurate battery level and updates on the primary controller indicates either A) that the wake-up interval needs to be set/reset, or that B) the battery device does not have a route back to the controller. After making sure that there are valid path(s) between the battery device and the controller, remove and re-add the association using the CIT or – preferably – the primary controller.

Here are some **Further scenarios** and ways you can detect and repair:

- **Communication to the nodes** – The first two device screens should give you an indication of any nodes that cannot be reached, excluding the sleeping battery devices. For any nodes that you should be able to reach but cannot, use the neighbor table and the network map to see if there are obvious gaps in the mesh network that can be easily fixed by adding a repeater device. If this is an older network where the Explorer Frame is not always available, then you may try using Node Neighbor Update or “Repair Network” as some gateways call it to cause the nodes in the network to re-discover their neighbors. Remember, at the end of inclusion of a node (let’s say node 10 for example), its neighbor information is transmitted to the controller. If more nodes are added which are neighbors to node 10, the controller may record nodes that are neighbors to 10, but will not know that 10 is a neighbor to them unless the neighbor information is updated. You may think that if two nodes are neighbors that it works both ways, but not always! Another way to force the update of the neighbor information is to repeat the inclusion procedure. Re-including a node that is already a part of the network will not cause it to get a new node number, but it will cause the examination of its neighbors to take place again.
- **Occasional Delays** – There can be a few causes of this including noise, but one situation that you definitely want to resolve are nodes which have associations to nodes that no longer exist. When a node is replaced, it is possible that another node that had an association to it was never updated to use the new node ID. The customer may not notice this because it is an infrequently used device, or perhaps the association is to keep an indicator up to date and the customer never noticed that it was inaccurate. The attempts to reach a node that no longer exists are no different than if the destination node failed – Z-Wave will make several attempts to reach it including use of the Explorer Frame, which will make multiple seconds to complete on even a medium sized network. Make sure – using the Device/Active Associations page, that you do not have any associations in place to old node numbers.
- **Occasional Delays** – Another cause of this could be other Z-Wave networks, in the situation where the customer is in a multi-family dwelling. A quick check of the ForeignHomeID bar on the Network/Statistics page will tell you if many of the transmissions of your customer’s Z-Wave network

are hearing (and thus having to wait for) another network's transmissions. This is usually OK and is a logical reason for occasional delays, but if the RSSI of the neighboring network is strong enough that it is blocking communication to some of your nodes, then it may be time to add nodes to the mesh network so that each hop is stronger than the background noise of the other network.

- **Transmission failures, Signals not being received, Occasional delays** – this can be indicative of weak links between nodes, which are then being blocked or delayed by some of the previously mentioned reasons. On the Network/Statistics page, frequent Frequency Backoff or a high number of CRC frames being corrupted are sure signs of either strong noise, or weak transmissions that are being affected by noise that would otherwise have not caused a problem. If there is a specific node experiencing this problem more than others, go to the Link health page for that device and update the link quality measurement, then take steps to improve the mesh in areas where there are weak links. If the links appear strong, check the Analytics/Background noise page for a potentially high noise floor. You can physically move the CIT closer to a node experiencing an issue with noise so that you may more accurately measure the noise near the affected node. If a plug-in power source is not available, the CIT can be powered using a commercially available cell phone portable battery source for a period of time. Remember once you have moved the CIT to allow for adequate time for the measurement of noise at the new location to take place.
- **Controller Not Updating** – when you know the network is robust and a node sends a status update to the controller, but the controller is not updating, it may be that the controller was not expecting the type of signal it received. When a controller requests the status from a node, it may use a specific command class supported by the node, but when the node is sending an unsolicited update, it may be sending a different type of command class. A great example of this is when a controller requests the level from a dimmer using SWITCH_MULTILEVEL command class, but status updates sent by the dimmer unsolicited use BASIC command class. Use the Zniffer screen to capture what is sent unsolicited, as well as when the controller requests the status (this means having to use the customer's controller to request the status). Take this information to the controller manufacturer along with the information about the product used in the sending node, and you may find the controller manufacturer receptive to addressing the situation.

EVALUATION FEEDBACK

As part of being an evaluation participant for the CIT, you will be receiving a survey link in eMail. Please fill it out when you get it; your feedback is very much appreciated and needed.

This guide, as well as the Getting Started Guide included with the CIT unit, are also “beta” versions. What sections are we missing? What troubleshooting scenarios did we neglect to list? Was there enough detail in each section of the guide(s)? At any time, please send us an email to: CITFeedback@Z-WaveAlliance.org and let us know!

Thank you