Installation and Troubleshooting

This document covers installation and troubleshooting of the Wireless Video Bridge and Wire
or C41W.

Wireless Video Bridge Setup/Beacon Mode

1. Select the placement for the WVB. Select a location for the WVB based on the following factors:
   - Best location to provide signal to all C41Ws and potential locations the customer may move a C41W client to.
   - Access to the coax SWiM network
2. Power on the WVB and observe the power up sequence. The WVB will boot up to **Beacon Mode**.
   - WVB LED flashes **blue** during boot up.
   - The boot up takes approximately one to two minutes.
   - Once boot up has completed, the WVB LED alternates **green**/**yellow**.
   - The WVB is now in Beacon Mode.
     - Beacon Mode works only on WVB and clients that have not previously been paired (factory fresh) or client that have been reset to factory defaults.
3. Setup the wireless clients (C41W) in the location they will be used.
   - If the C41W is to be mounted behind the TV, it should be placed as close to its final mounted position as possible to fully verify signal quality to the WVB.
   - Make sure you remove the plastic film from the C41W;
4. Connect the C41W to the TV and power on. The C41W will boot up to the **Connecting to Video Bridge** screen. Proceed to the next step in the installation, but ***do not select Connect Now (or Continue, depending on your software version; older software versions will state Continue) at this time***. Move to the next client to verify signal.
5. The signal strength on every C41W should be checked by ensuring that the LED and on-screen signal meter is **green**.
   - The LED on the front of the C41W has roughly a ten-second refresh rate, so when moving the C41W, wait about ten seconds and verify the color of the LED.
   - If one or more of the C41Ws' netw the WVB will need to be relocated signal range to all clients and mini than one C41W will be installed ar be achieved on all C41Ws the tec options:
     - Use a wired client (C31/C41). install the wired client if neede
     - Use more than one WVB. Choo first WVB that covers most of t a location for a second WVB to that have poor signal coverage
6. Do not proceed if the signal strength is A **yellow** LED on the C41W indicates p WVB. Consider moving the WVB, addi wired client.

If a technician is finding it very difficult to g coverage on all C41Ws in a single househ locations in Beacon Mode, they can add a Bridge to the work order without calling TS households, we found that a single Wireles the entire network of C41Ws and a second not necessary. In 98.5% of all installations WVB was needed.

Try to focus on good WVB placement; this good signal, and can prevent future servic

WVB Installation

1. If not previously performed, install the ODU/SWiM and run the coax cable to the WVB location(s).
2. If not previously performed, install, update the software, and activate the Genie Server.
3. Connect the WVB to the SWiM/MoCA network (if more than one WVB is used, connect all WVBs to the SW
4. If the WVB is not powered on, power on the WVB. After a short delay (one to two minutes) the LED shoul
   The LED will be solid **blue** if the Genie Server previously had ANY clients (wired or wireless) paired to it.
   green or solid **blue,** refer to Troubleshooting section. (Full boot takes one to two minutes, so be patient.)
5. On the Genie Server, verify the OSD "A wireless video bridge has been found and configured successfu
   Select OK to clear the OSD. This often takes only 30 seconds, however it can take up to five minutes in s
   - If the OSD does not display on the Genie Server, check the WVB LED and refer to the troubleshootin
6. Verify all WVBs are connected to the Genie Server by checking the WVB status under **Whole Home** - **Vi**
   Status on the Genie Server.
   - Each WVB in the system should show ACTIVE.
7. Installation of the WVB is complete once all WVBs appear ACTIVE on the Genie Server's Video Bridge St
   have a solid **green** or solid **blue** LED. (This means that the Genie Server and the WVB are connected, ev
   have a wired or wireless client connected).

The installation preference of the WVB is as follows:

- **Home run wiring from the SWiM splitter to both the WVB and HR44.**
- **Home run wiring from the SWiM splitter to the WVB; then a coax jumper from the WVB to the HR44.**
  - **A split cable run to the WVB is not recommended.**

Installing Wireless Genie Mini Clients

1. On the Genie Server, go to **Whole-Home - Manage Clients - Add Clients** and note the PIN on the screen; keep the Genie Server on this screen until all C41Ws are installed.
   - **Upon selecting Add Clients, there will be a warning screen. You must use the Dash (-) key on the remote before you can add clients.**
   - **Do not exit the Add Clients screen until all the clients are added.**
   - **Add one client at a time all the way to Live TV video and programming the remote. This is important because the process will abort if attempting to add multiple clients at the same time. It is not necessary to wait for the client to update software before moving onto the next client.**
2. If not already powered on, power on one of the C41Ws.
3. If the C41W is not displaying a **green** signal strength icon or **green** network LED, do not proceed. Consider moving the WVB to improve signal strength.
4. On the wireless client (C41W), select **Connect Now/Continue** while on the **Connecting to Video Bridge** screen.
5. **Attempting to connect to video bridge…** will be displayed. During this step, it is common to see a gray screen or a flashing red LED.
6. When the wireless connection between the WVB and wireless client (C41W) completes, enter the PIN from the Genie Server.

At any time throughout the installation, the Software Download OSD may appear. If the OSD appears, select **OK, Download** to start the download. Do NOT exit Add Client on the Genie server until the download completes. If the Software Download fails, it will reboot itself.

7. Once the PIN is entered, select Add a New Location on the Client.
   - If the user does not have enough Client services on the account, you will get a 'Call DIRECTV' screen on the Client. You must call DIRECTV to add the Client to their account.
   - If the user has enough Client servi DIRECTV to add the client service Name the Client screen.
8. Enter a name for the Client, and you wi don't copy the location settings from th Client.
9. After these steps have been completed will be registered to the Genie Server a been added, the registration is maintai wireless client (C41W) are power cycle should begin on the wireless client (C4
10. Complete the wireless client (C41W) se remote and selecting "Watch DIRECTV
    - In order to program other items su to an RC71 remote, you must setu
11. If a 2nd and/or 3rd wireless client (C41 step 4 of Add a Wireless Client. If more added (4-8 C41Ws), place the other w in standby before adding the additiona clients can be powered on at the same
12. After all C41Ws have been added, go select DONE on the Add Clients scree
13. All wireless clients (C41W) that are ON network LED. After 1-2 minutes, the WV solid **blue**.

As mentioned earlier, make sure to add c is important because the process will ab multiple clients at the same time. When a likely to see a momentary disruption on is stabilized.

Troubleshooting Basics

Where do you see the issue? : C41W (wireless client), WVB or Genie Server

- WVB initial setup: Is the WVB LED blinking **red**?
  - Reset. If doesn't fix, replace.
- C41W: is the network LED solid **yellow** or solid **red** (indicating poor signal strength to WVB)?
  - Focus should be on WVB placement.
- C41W: Is the PIN screen not displayed?
  - Verify state of WVB (flashing **green**/**blue** as long as the Genie Server is in Add Clients mode).
  - If not, verify the Video Bridge status on the Genie Server (was it added?).
  - If yes (WVB added to Genie Server), is the Add Clients screen displayed on Genie Server?

C41W: Did the Add Clients fail? Common Symptoms that could cause failure:

- Common Causes:
  - Did someone exit the Add Clients screen on the Genie Server? Re-enter the Add Clients screen on the Genie Server.
  - Do you have fair signal strength from the wireless client to the WVB? Focus should be on WVB placement.
- Troubleshooting Tips:
  - Check LED on C41W (should be green) and on WVB (should be Blue or Blue/Green).
  - Searching for Server may be caused by: the C41W is not paired/registered (C41W flashing red), or the WVB is disconnected from the server (WVB flashing yellow)
  - If WVB will not go to Blue/Green flash when server is in Add Clients, reboot WVB and server.

How to troubleshoot for signal strength issues a possible structural interference and verify WVB

- Range – the WVB wireless technology is designe walls
- Construction – The construction reference refers t construction.
  - External walls are denser by nature to protect sound proofing and strength of the building, t WVB signal.
  - There could be additional loss with walls cons brick, stone or double walls.
  - Barriers and contruction materials can impac
- Placement – positioning the WVB behind a blocki reduce range. Blocking structures could be TV, ca

Customer Internet Changes/Issues

If a change occurs to the customer's internet con Genie system. Even though the Wireless Video Br operate on a completely separate wireless netwo the C41Ws are still sharing Internet access over t so changes to network settings affect them. If cha customer's Internet connection, the first step is to Settings & Help - Settings - Network Setup on the the Genie Server. Once the Genie Server has fully normally, power-cycle the Wireless Video Bridge (solid blue LED). On the Genie Server, perform a R a code 88 is seen, power-cycle all wired clients.

There is a one to two minute period after reset wh Full functionality will not be immediately available should give the system this time to recover before

Wireless Client Troubleshooting

C41W Gray/Black screen no Banner

Troubleshooting

1. If the wireless client (C41W) network LED is Green, follow normal Gray/Black screen troubleshooting.
   - Change channels
   - Turn off the wireless client (C41W) for 15 seconds and then turn it back on.
   - Verify the customer's TV is on the correct input
   - Verify cables and connection to the TV is good (including trying a different cable and input to the TV)
     - If the LED is not green, or normal Gray/Black troubleshooting does not resolve, continue to step 2.
2. Run system test on the Genie Server. Troubleshoot any error codes that appear.
3. If there are no error codes, check the LED status light on WVB.
   - If LED is **not blue**, see WVB LED status troubleshooting
   - If WVB LED is **blue**, check LED status light on the wireless client (C41W)
   - If LED is not solid **green**, see wireless client (C41W) status troubleshooting
4. On the Genie Server go to **Setting & Help** - **Settings** > **Info & Test** - **More System Info**
   a. Scroll down to the Wireless Client(s) that is having the issue and look at its "RSSI".
   b. If the RSSI does not show "Excellent" then troubleshoot the same as a "Yellow" Network LED on the C41W"
5. If internet connected, power-cycle the router.
6. Reset the WVB.
7. Reset the Genie Server, and wait for it to boot up to video.
8. If the client does not have live TV, reset the client, wait for client network LED to turn **green** and wait 2 minutes.
9. If the Genie Server is connected to the router wirelessly (HR44 internal Wi-Fi/CCK-W), change to a BB-DECA, and refer to Resetting a Genie with Clients section later in the training. If still unresolved, complete an FPR.

C41W Program Banner displayed, no Video on TV

Follow the troubleshooting steps listed for Gray/Bla

Freeze Frame/Pixelization on C41W

Follow the troubleshooting steps listed for Gray/Bla

C41W Video/Audio on TV but no Menu, Guide or List d

Follow the troubleshooting steps listed for Gray/Bla

C41W: Add Clients failed (does not display video)

Follow the troubleshooting steps listed for Gray/Bla Troubleshooting

Wireless Client Network LED Failures/Bad Wireless C

Symptoms

- WVB has a Solid Red LED
- Wireless Client has Yellow, Red or Blinking Re

Probable Cause

- Poor placement of the WVB and/or Wireless C

Troubleshooting

1. For Yellow or Solid Red Network LED on the W
   a. Ensure there are no obstacles around the degrade signal quality.
   b. Try moving the WVB to a better location to Client locations. Remember the minimum WVB from other wireless devices like the c in Wi-Fi, or, for example, a Playstation 3 wi
2. For a blinking Red network LED on the Wireles
   a. Put the Genie Server back into "Add Client **Settings** - **Whole Home** - **Manage Clients**
   b. The Wireless Client should be on the **Selec Lost** screen. Select **Reset Wireless** from t
   c. Follow the installation steps to check the s Client.

Client Troubleshooting

Here are some basic troubleshooting tips and tricks.

C41W does not display the Enter PIN screen

Troubleshooting

1. If the Genie server is not in the Add Clients screen, put the Genie server in the Add Client mode and follow the installation procedures.
2. If that does not resolve the issue, follow the installation steps.

C41W Menus in Spanish

Factory-reset the affected clients by holding down the power button for 15 seconds; this should clear the problem.

C41W Component Cable Problems

Some older model televisions may not be
pin component cable used with a C41W. T
use the 10-pin to composite cable adapte
back to the 10-pin to component cable ad
after setup is complete. **Submit an FPR if**
issue.

OSD Troubleshooting

Genie Server OSD

- *"Wireless Connection Lost. The connection to wireless video bridge has been lost. Please make sure all wireless video bridges are connected and have power. If the problem persists call DIRECTV at 1-800-531-5000"*

Probable Cause

- The WVB lost connection to the Genie Server
- The WVB lost power or is rebooting
- Troubleshooting should focus on the connection from the WVB to the Genie Server

Troubleshooting

1. Check if the clients are having a problem. If yes, troubleshoot client symptoms.
2. If no, educate customer that the OSD was temporary and choose to ignore OSD.

C41W OSD

- *"Wireless Connection Lost. The connection to wireless video bridge has been lost. Please make sure all wireless video bridges and server are properly connected and that this client is within range of the wireless video bridge"*

Probable Cause

- The WVB lost connection to the Genie Server
- The WVB lost power or is rebooting
- The C41W is not in range of the WVB

Troubleshooting

1. Check the C41W LED and troubleshoot accordingly.
2. If LED is **green**, troubleshoot as per C41W Gray/Black screen symptoms.

C41W OSD

- *"Select a Server. No Servers Were detected. C connections"*

Probable Cause and Troubleshooting

3. Verify the wireless client (C41W) network LED
   - Verify C41W LED is green AND WVB LED flashing).
   - If not, troubleshoot for whichever LED sta
   - If both C41W and WVB LEDs are good, a resolve, reboot WVB, then reboot server.
4. If the wireless client (C41W) network LED is bli needed in case the WVB has not loaded the n
5. Treat the same as Genie Server OSD "Wireless

C41W OSD

- *"Connecting to Video Bridge"*

Probable Cause and Troubleshooting

1. Make sure the Genie Server is in the Add Clien
2. Follow the normal installation process starting client (C41W).

C41W OSD

- *"Unable to connect to Video Bridge. Make sur survey mode and this client is within range of*

Probable Cause and Troubleshooting

1. Make sure you are not selecting "Connect now one client at a time.
2. Select the OK button will bring the user back t screen
3. Ensure the Genie server is on the Add Clients
4. Ensure that the WVB LED is alternating **blue**/**g**

Reset to Factory Defaults

If any of the troubleshooting steps call for a reset on either the WVB or C41W, here are the procedures.

To reset the WVB back to factory defaults perform the following.

1. Unplug all the C41W clients
2. Remove the COAX from the WVB rear panel input labeled “Towards LNB”.
3. Press and hold the red reset button on the rear panel of the WVB.
4. Continue to hold the reset button until the WVB status light displays the following colors.
   - **Red**
   - **Yellow**
   - **Green**
5. Then release the reset button.
6. The WVB status will then begin to blink **blue** as it boots up. The WVB will then blink **green**/**yellow** as it will be reset back to beacon mode.
7. Follow the installation process to pair the C41Ws and configure the WVB to the HR44.

Genie Mini Wireless (C41W) Reset

Reset Duration	Type of Reset
Press Power button and hold > 5 seconds	Factory reset all parameters except Wi-Fi Resets remote from RF to IR
Press Red Button Reset and hold > 20 seconds	Resets Everything Factory reset all parameters inclusive of Wi-Fi Resets remote from RF to IR
Press Red Button - No Hold	Standard reset.

Genie Reset Process

Resetting a Genie With Clients

If something has changed with the cus
connection, or anytime a Restore Defau
need to reset the system.

If the Genie was connected to the Inter
and Repeat Network Setup is performe
need to be performed:

1. On the Genie Server, perform **Resto**
   Network Setup. R
2. Reset the Genie Server and wait for
3. Reset the WVB and wait for the LED
4. After the Genie Server and WVB ful
   Network Setup on the Genie Serve
5. Reset all wired and wireless clients,

Genie Server Diagnostic Codes

Diagnostic Code	Text	Cause	Action
89 (Genie only)	Unable to connect to the Wireless Video Bridge(s) on your network. In order to display any video the receiver needs to be connected to a Wireless Video Bridge. Please verify that all Wireless Video Bridges on your network are powered on and have the coaxial cable connected. Select “Test Again” to see if this has solved the issue. Diagnostic Code: 89	The Genie server does not detect the WVB	1. Determine if the WVB was delib by the customer. If it was, remo by using the system menus. (M Whole Home - Video Bridge) 2. Ensure all WVBs are powered o network
90 (Genie only)	One or more of the Wireless Video Bridges on your network reports an error. You may experience poor quality or intermittent loss of video on your wireless clients. Please reset your Wireless Video Bridge(s) using the red reset button on the back panel. Select “Test Again” to see if this has solved the issue. Diagnostic Code: 90	WVB Internal Error. (Hardware Issue)	1. Perform a reset on the WVB. 2. If WVB continues to blink Red,
91 (Genie only)	“One or more of the Wireless Video Bridges on your network reports an error. You may experience poor quality or intermittent loss of video on your wireless clients. Please check the coaxial cable connection to your Wireless Video Bridge(s) then reset them using the red reset button on the back panel. Select ”Test Again” to see if this has solved the issue.” Diagnostic Code: 91	WVB MoCA Error	1. Troubleshoot the MoCA / Coax connectors.
92 (Genie only)	“One or more of the Wireless Video Bridges on your network reports an error. You may experience poor quality or intermittent loss of video on your wireless clients. Please reset your Wireless Video Bridge(s) using the red reset button on the back panel. Select ”Test Again” to see if this has solved the issue.” Diagnostic Code: 92	WVB Ethernet Error.	Should not occur. Escalate to NET, NET to escalate to

WVB LED States

LED State	Description	Action
Off	Device not powered	Plug in the approved power supply to a reliable pow
Blink Blue	Booting up. Start within 10 seconds of power ON.	Normal WVB boot up process, takes approximately
Solid Blue	Normal Operation Wireless Clients should have a connection to the Genie Server.	No Action.
Solid Yellow	MoCA Network Established but MoCA network is degraded	Troubleshoot the MoCA / Coax network. Verify cabl
Blink Yellow	No MoCA Network Detected.	Troubleshoot the MoCA / Coax network. Verify cabl
Solid Red	The WVB has a good connection to the Genie server; however there is a Poor Wireless connection to one or more Wireless Clients (C41W).	Follow "Wireless Client (C41W) Network LED Failu the Wireless Client(s) that has a Yellow or Red Net
Blink Red	Device Error Detected	1. Perform a reset on the WVB. 2. If WVB continues to blink red, replace the WVE
Blink Green and Yellow	Wireless Video Bridge in Beacon Mode.	Normal Wireless Video Bridge survey/Beacon mod connected. Used to position the WVB and Wireless Clients dur survey/Beacon Mode.
Blinking Green	Transitioning out of Wireless Video Bridge Beacon Mode MoCA network connected, however there is no communication between the Genie server and the WVB	This is normal when initially connecting to the MoC LED to change to Solid Green.
Solid Green	Good Connection to the Genie server but no Wireless Clients paired with WVB.	Follow "Adding Wireless Clients" steps to pair and r
Blink Green and Blue	Wireless Client Add mode	Normal state when adding Wireless Clients (C41W next steps

C41W LED States

Power LED State	Network LED State	Description	Troubleshooting Steps
OFF	OFF	Device not powered	Plug in the approved power supply to a rel
Flashing Blue	Any	Client is updating Software	Allow the C41W to finish downloading. Up
ON	OFF	Wireless Client (C41W) booting	Allow Wireless Client (C41W) to finish boot boot in 1-2 minutes
ON	GREEN	Normal operation	This means the Wireless Client had a gooc
ON	YELLOW	Wireless Client (C41W) connected to the WVB, but wireless connection is degraded.	Follow “Wireless Client (C41W) Network LE
ON	RED	Wireless Client (C41W) connected to the WVB, but wireless connection is severely degraded.	Follow “Wireless Client (C41W) Network LE
ON	Blinking RED	Wireless Client (C41W) not connected to the WVB.	Follow “Wireless Client (C41W) Network LE

Notes on Blinking **Red** LED

There are several times during an installation when a blinking **red** LED is normal behavior for the C41W.

1. When the C41W is first connected to the TV and power supply, it will boot up into Beacon Mode and display a blin empty signal bar on the on-screen display on the TV). This is because the internal wireless network has not yet be and data transfer from the Genie Sever to the wireless client.
2. After the Wireless Video Bridge has been connected to the Genie and technicians begin connecting the C41W cli Bridge, the C41W will switch from Beacon Mode to Client Addition Mode, so the connection to the Wireless Video reset. This causes the C41W’s LED to blink **red** during the two-minute countdown displayed on the TV. The LED wi C41W re-establishes its connection to the Wireless Video Bridge, which can take one to two minutes.
3. When the Genie enters or exits out of the Add Clients screen, it changes from Client Addition Mode to Operating M the connection to the C41W clients to be temporarily reset. During this transition, the C41W’s LED light will briefly c will return to green after the C41W re-establishes its connection to the Wireless Video Bridge, which can take one
4. When selecting Continue or Connect Now, the LED on the C41W will flash red, and is normal behaviour. Be patien to two minutes. If it is still blinking red and doesn’t finish the connection to the server, troubleshoot according to the

Remember, it’s important to be patient and follow the steps! Don’t assume that a blinking red LED means trouble!

Removing a WVB

This process is only intended to be used if the WVB is to be permanently removed from the Genie Server. If to the "Replace WVB" section in this document. If more than one WVB has been installed and a WVB is rem procedure should be performed to stop an error from occurring on the Genie Server.

1. Navigate to **Menu** - **Settings & Help** - **Settings**.
2. Select **Whole-Home** - **Video Bridge**.
3. If a WVB is configured to the network, the "Remove Video Bridges" option is enabled.
4. Select the option Remove Video Bridges. The screen will list all the WVB's that are configured to the netw remove the WVB. If there are multiple WVBs, select the checkbox next to the WVB to remove, and select
5. Follow the on-screen instructions and press - (dash) to complete the removal of the WVB.
6. A successful completion OSD will appear. Press "OK".

The removal will cause the wireless clients that are paired with this WVB to disconnect from the wireless netw

Replacing a Wireless Video Bridge

To replace a WVB, use the following procedure:

1. Turn on the Genie Server.
2. Put all C41Ws in standby.
3. Remove power and disconnect the coax from the WVB to be replaced.
4. Install, connect and power on the new WVB.
5. Allow WVB to fully boot up (one to two minutes). The Genie Server will display OSD, "A wireless video bri configured successfully".
6. Select OK to dismiss the OSD.
7. Turn on the clients to verify they connect to the Genie Server through the WVB. There may be brief gray s connections are established but video/audio should stabilize shortly (less than one minute).
8. If the clients do not connect within one to two minutes, reset the clients.
9. Next, remove the previous WVB from the Genie by following the steps to "Remove WVB from the Genie S that needs to be removed. This step is required to stop any errors related to the Genie not able to access

Wireless Video Bridge Software Updates

The WVB is capable of getting software updates, however, the customer's system must be internet connecte receive firmware updates. The WVB initiates the request to update its firmware. It does this between the hou 4AM (time zone as per the Genie Server) after booting up and will continue every 7 days thereafter.

While the WVB is downloading the firmware it will remain online and operational so there should be no interr the download has completed the WVB will reboot and switch to the new firmware image. During the reboot, While rebooting, the Genie Server and clients will display the "Wireless Connection Lost" OSD.

Click "Remind Me Later" or "OK" to clear the OSD.

In the event that the download server does not respond or an error occurs during the firmware file transfer, t next update cycle. The WVB will remain online and operational in this event.

Downloading the WVB firmware is transparent to the customer and occurs in the background. Once the dow will boot up in approximately one to two minutes. During the reboot process the WVB light will blink **blue**. Vi the wireless clients while this is on progress. Clients may display Searching for Server or WVB Connection H

C41W Software Update - Special Note

Occasionally, while on the PIN screen, the C41W will start a software download. **Do not exit the Add Client Server during a software download on the C41W**. Doing so will interrupt the software download and requi client reboots; there is no need to troubleshot or factory reset clients for this.

Maximum Distances and Material Loss

The WVB and the Wireless Client (C41W) should be placed no further than 80 feet apart and have no more t
between them. It is important to recognize this guidance, and that home construction may significantly decr

Walls and other barriers can decrease the range and significantly impact the maximum distances. Use signa
installation quality.

Below are examples of various barriers and how they degrade the signal and lower the maximum distance f

TABLE 1.

Standard	Medium	Strong	Extren
<5 dB	5-10 dB	10-20 dB	>20 d
■ Plexiglass ■ Sheet plywood ■ Internal wall (2 layers drywall + 2”x4” studs)	■ Fir lumber ■ Non-stucco external wall (wood siding) ■ Wood floor/ceiling	■ Stucco wall (with diamond metal mesh) ■ Brick/Stone wall/fireplace ■ Double-pane tinted high efficiency door/window	■ M ap
No impact up to 5 barriers; up to15 ft distance impact for each additional barrier	Up to 30 ft distance impact per barrier	Up to 45 ft distance impact per barrier	Poten solid