Welcome to ZeeVee.

ZeeVee products convert your video and audio source to a digital cable channel and broadcast it over coax to all your HDTVs. This guide walks you through basic and more enhanced setup for ZeeVee’s HDBridge 2840 modulator. If you run into problems during setup, feel free to contact Technical Support at +1(877) 4-ZEEVEE (1.877.493.3833).

What’s in the Box

Here’s what you can expect to find when you open the package:

- ZeeVee Modulator
- AC Power Cord
- HDMI Cables
- RCA Cables
- 2 Coax Cables
- Coax Connectors
- 2 Instructions
- Warranty
- Front and Back Panels
- ZeeVee USB Dongle
- ZeeVee USB Cable
- ZeeVee Maestro Accessory Kit
- USB Adapter
- Warranty Information
- FCC Compliance and Advisory Statement
- ZeeVee Guarantee
- ZeeVee Technical specification

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

Important Safety Instructions. Save These Instructions.

WARNING: When using electronic products, basic precautions should always be followed, including:

1. Keep these instructions.
2. Read all warnings.
3. Follow all instructions.
4. Do not use this apparatus near water.
5. Clean only with dry cloth.
6. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
7. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
8. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
9. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit the apparatus.
10. Unplug the apparatus during lightning storms or when unused for long periods of time.
11. Only use attachments/accessories specified by the manufacturer.
12. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

FCC Statement

FCC Compliance and Advisory Statement: This hardware device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference received including interference that may cause undesired operation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: 1) reorient or relocate the receiving antenna; 2) increase the separation between the equipment and the receiver; 3) connect the equipment to an outlet on a circuit different from that to which the receiver is connected; 4) consult the dealer or an experienced radio/TV technician for help. Any changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment. Where shielded interface cables have been provided with the product or specified additional components or accessories elsewhere defined to be used with the installation of the product, they must be used in order to ensure compliance with FCC regulations.

Available Separately

- HDMI Cables
- RCA Cables
- 2 Coax Cables
- Coax Connectors
- 2 Instructions
- Warranty
- Front and Back Panels
- ZeeVee USB Dongle
- ZeeVee USB Cable
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Front and Back Panels

1. HDb2840 - Name and description of unit
2. Color Display - Configuration and system status
3. 5-Way Control - Navigate options on front panel display
4. Coax Output - Up to 2 paired, frequency-agile QAM RF CATV output channels for up to 4 video sources. Output power can be set between +45 to +25 dBmV using the Maestro web interface or the front panel.
5. Audio/Video Inputs - Digital Audio/Video: Unencrypted HDMI, Closed Caption: Composite, Analog Audio: 3.5mm Audio
6. Delay Matched Audio Out - For matching audio to external audio system (first port only, requires analog audio as input)
7. Event Detection - This function not implemented yet
8. 10/100 LAN Port - Two symmetrical Ethernet ports for configuration and remote management
9. AC Power Input - 100-240VAC / 50-60Hz
10. SD Card Slot - For use with ZvShow

Basic Installation

Factory default settings allow HDb2840 units to broadcast up to 4 unencrypted HDMI sources on RF channels 2, 3, 5, and 6 for reception at connected HDTVs. We recommend using the most updated version of firmware. You can find the latest version on the Support section of our website.

Beginning setup
1. Apply power.
2. Connect an HDMI video source to the HDMI input port of the HDb2840, using an HDMI cable (which is sold separately). For Closed Captioning, connect a composite (yellow) cable from the video source to the Caption port.
3. Optional – Connect the Analog Audio if the digital audio is not present on HDMI or if you want to implement the delay matched audio feature.

Tuning your channel at the HDTV (Auto Scan)
1. Connect the Coaxial Output of the HDb2840 to your RF network.
2. Specify Cable (not Air or Antenna) setting in your TV menu.
3. Enter the RF number to tune directly to the channel. For default channel lineup information, refer to the Default Channel Lineup table.
4. Run the Auto Scan through the menu system of your HDTV to find the channels.
Front Panel Configuration

You can set the RF broadcast channels using the front panel controls. In many cases, your ZeeVee modulator will require only these configurations.

Setting the RF broadcast channels or power
1. Unlock the panel by pressing/holding together the left and right arrow buttons (▶◀) until “Setup” lights up.
2. Press “OK” to enter the Configuration screen.
3. Press “OK” to select “RF Setup”.
4. Use the arrow buttons (▶◀▲▼) to go to each item you want to configure (such as RF Number or RF Power), then press “OK” to edit the highlighted field. Use the up and down (▲▼) arrow buttons to scroll through the options for that field.
5. Once you’ve made changes, press “OK” to accept. You can then select the next item for configuration.
6. When finished making changes, use the arrow buttons to scroll down and select “Apply,” then click “OK” to save your changes.

To update firmware:
• If a unit is connected to the internet and can communicate with our servers, select Update Firmware from the Setup screen and press “OK.”

To reset IP address:
• When using DHCP, select Reset IP Address to force a release/renew of your IP address, and set IP address back to factory defaults.

To restore factory defaults or revert firmware:
• Hold the left and right arrow buttons down and press “OK” to boot normally.

IMPORTANT NOTES
• RF numbers are applied in pairs based on the frequency map. For instance, if you enter RF # “2,” then RF # “3” automatically populates.
• RF numbers “4” and ”5” cannot be paired together because of a gap in the frequencies (MHz).
• The RF numbers are not always paired in numerical sequence (as with RF # 6, which pairs with 59, and RF # 99 which pairs with 14 and so on).
• ZV channels can be set directly adjacent to any other well-formed channel and will not cause interference. No channel spacing is required.

Map for configuring RF numbers and virtual channels

The Cable TV Channels vs RF Frequency (MHz) Map shows how the RF channels are paired and matched with RF frequency.

You will need to refer to this map when configuring RF numbers and virtual channels.

Cable TV Channels vs RF Frequency (MHz) Map

<table>
<thead>
<tr>
<th>RF Ch</th>
<th>Band MHz</th>
<th>RF Ch</th>
<th>Band MHz</th>
<th>RF Ch</th>
<th>Band MHz</th>
<th>RF Ch</th>
<th>Band MHz</th>
<th>RF Ch</th>
<th>Band MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>54.60</td>
<td>27</td>
<td>140-146</td>
<td>53</td>
<td>420-426</td>
<td>87</td>
<td>830-846</td>
<td>123</td>
<td>790-798</td>
</tr>
<tr>
<td>3</td>
<td>50.66</td>
<td>28</td>
<td>136-142</td>
<td>52</td>
<td>416-422</td>
<td>88</td>
<td>835-852</td>
<td>124</td>
<td>795-792</td>
</tr>
<tr>
<td>4</td>
<td>46.72</td>
<td>29</td>
<td>132-138</td>
<td>51</td>
<td>412-418</td>
<td>89</td>
<td>840-856</td>
<td>125</td>
<td>797-791</td>
</tr>
<tr>
<td>5</td>
<td>42.78</td>
<td>30</td>
<td>128-134</td>
<td>50</td>
<td>408-414</td>
<td>90</td>
<td>845-862</td>
<td>126</td>
<td>802-806</td>
</tr>
<tr>
<td>6</td>
<td>38.84</td>
<td>31</td>
<td>124-130</td>
<td>49</td>
<td>404-410</td>
<td>91</td>
<td>850-866</td>
<td>127</td>
<td>807-811</td>
</tr>
</tbody>
</table>

The highlighted areas in the frequency map show the RF numbers that can be paired together but not numerically sequential.

RCH Frequencies = Standard Frequencies minus 1.25 MHz

Except for:
• Channel 5, Video = 78.0 MHz
• Channel 6, Video = 84.0 MHz

IRC Frequencies = Same as Standard Frequencies

To make more changes, press/hold the left and right arrow buttons again to unlock front panel capabilities.

shows audio/video being encoded
Green — Both audio and video are detected
Yellow — Video, but no audio detected
Red — No video detected
Maestro Configuration

Maestro is a configuration tool that you use optionally to customize your system beyond what is allowed in the front panel. For example, using Maestro you can assign a channel number (virtual channel) independent of the RF number and label the channels.

Connecting with Maestro
1. Connect your computer directly to the ZeeVee modulator using a standard Ethernet cable (not a cross-over cable) or connect the unit and your computer to any LAN that has a DHCP server.
2. After a few moments, an IP address will appear at the top of the front panel display.
3. Using any web browser (Chrome or Firefox preferred), enter the IP address to launch Maestro.
4. You will be directed to a login page. Your user name is always “admin”. The default password is “admin” but you can change the password. Login is case-sensitive.
5. After you log in, the Maestro Status tab appears. Here you can see the general information status.

Configuring RF numbers and virtual channels
1. Click on the Channel Plan tab.
2. In the RF # field and enter the RF number as you choose from the RF Frequency Map (on page 7). Make sure you’ve reviewed the RF Frequency Map Important Notes before completing this task.
3. Click in the Channel # field and enter a channel number (virtual channel). The channel number is what the TV displays. You can configure a channel number two ways: • As a dotted number — Enter the number with a “.” following it, for example, “5.1”. This is the default display. • As a dotless number — Enter the number with a “#” preceding it, for example, “#5”. Note that you can choose a channel number that is different from the RF#. For instance, if your RF# is 3, you can choose a channel number of 10.1 or #10.
4. Click Apply to save changes. Your unit stores configurations so they are not lost on power-down.
5. Run Auto Scan at TV (see Tuning your channel at the HDTV, page 5) when you have saved configuration changes.

Labeling channels with channel and content information
1. In the Channel Plan tab, click in the Name field and enter the channel short name (up to 7 characters).
2. Click in the Long Name field and enter the long or more descriptive channel name (up to 33 characters). The TV displays these names and descriptions when the channel is changed or info guide information is requested.
3. Click Apply to save changes.

Using the Maestro tabs
Click on the Maestro tabs to configure your unit as needed. We provide brief information here. Please click on the Help bar on each tab or refer to the Support section of our website for further detail on configuration options.

THE RF TAB
Allows you to change the RF power output.

THE DEVICE TAB
Allows you to change the device password and update firmware as well as configure Emergency Alert System (EAS). You can find detailed information on EAS in the Support section of the website.

THE NETWORK TAB
Allows you to assign a static IP address.

THE SUPPORT TAB
Provides technical support contact information and allows you to send logs for troubleshooting.

AV SOURCE TAB
Allows you to specify audio and video sources as well as other configuration options for the sources.

ADMIN TAB
Allows for creating user accounts which limit access to specific parts of Maestro including ZvShow, STB and EAS access.
Verifying TV and Speaker Timeouts

Both TV and speaker timeouts must reach the same rendered video delay. This is the amount of time that VCA-MTs configured to the same HDMI input will display the same video and audio, including any audio that has gone through the encoding and decoding process just as the video did. This typically means that the TV will display the same image as the speakers. If you have a problem with one of these, you may need to adjust the delay or use a different set of VCA-MTs.

Audio and video are not synchronized

If both audio and video are being sent through the unit to the TV, but your firmware is fully updated, latest version of firmware may have lip sync corrections.

Audio from the ZeeVee unit may not be heard from the audio directly from the source into a distributed (whole house) audio system and not through the ZeeVee unit. This will arrive to the speakers before the video arrives to the HDTV. This happens because the video is being encoded into a digital signal, modulated onto the signal at the unit and then demodulated at the HDTV. Each of these steps adds latency that the audio signal cannot keep up with the image. Since the audio is sent through a different path, there may be a delay between the audio and video.

Audio and video are not synchronized

In your configuration, ensure that the audio and video are synchronized by verifying that the audio and video are reaching the same destination, such as a speaker or TV, at the same time. If they are not synchronized, you may need to adjust the delay or use a different set of VCA-MTs.

Audio and video are not synchronized

If audio and video are not synchronized, you may need to adjust the delay or use a different set of VCA-MTs. This is especially important if you are using a ZeeVee unit in a distributed audio system, as the audio and video need to be synchronized to ensure that the audio is heard at the same time as the video.

VGA or HDMI inputs are not displaying an HDMI TV screen

If you are getting a page not found error when directly connected to a PC, try disabling WiFi. If the problem persists, try adjusting the IP settings on your PC to ensure that it is on the same subnet as the ZeeVee unit.

If your PC is using a static IP address, it will arrive to the speakers before the video arrives to the HDTV. This happens because the video is being encoded into a digital signal, modulated onto the signal at the ZeeVee unit and then demodulated at the HDTV. Each of these steps adds latency that the audio signal cannot keep up with the image. Since the audio is sent through a different path, there may be a delay between the audio and video.

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Contact ZeeVee

Support

Contact us for installation and technical support, repairs, and warranty service:

+1 (877) 4-ZEEVEE (1.877.493.3833)
support@zeewe.com

Representatives are available from 9:00 AM to 6:00 PM, Monday through Friday (Eastern Time).

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