

User's Manual



ZvMXE +

Media eXperience Engine...plus!



Updated September 2019

Notice

Warnings Cautions and Notes

Throughout the entire user's manual, pay special attention to the following marks that indicate hazardous situations:

Warning

Indicates a hazardous situation which could result in serious injury

Caution

Indicates a situation which could damage the equipment or other apparatus.

Note

Indicates additional information to make the user aware of possible problems and important information to help understand, use and maintain the installation.

Important Symbols



To reduce risk of electric shock, do not open unit or breach power supply enclosure. There are no user serviceable parts inside. Contact ZeeVee support at +1.877.493.3833.



DANGEROUS VOLTAGE

This symbol indicates dangerous voltage inside the receiver that presents a risk of electric shock or personal injury.



IMPORTANT INSTRUCTIONS

This symbol indicates important instructions accompanying the receiver.

Safety Instructions and Precautions

This receiver has been manufactured to comply with international safety standards. Please read the safety precautions carefully.

1. Main Supply (100-240V ~50-60Hz AC)

- Operate this product only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to the location where the receiver is to be used, consult your local power company. Disconnect the product from the main power source before you start any maintenance or installation procedures.

2. Connection to the network feed

- Disconnect the product from AC Power before connecting or disconnecting the Ethernet cable.

3. Overloading

- Do not overload a wall outlet, extension cord or adapter as this may result in electric fire or shock hazard.

4. Liquids

- This product should not be exposed to liquid of any kind. In addition, no objects filled with liquid should be placed on the apparatus.

5. Cleaning

- Disconnect the product from the wall outlet prior to cleaning.
- Use a light, damp cloth (no solvents) to dust or clean the product.

6. Ventilation

- The slots and openings on the case of the product must be left uncovered to allow for air to pass in and out for proper cooling.
- Do not operate the product on soft furnishings or carpet.
- Do not stack anything on top of the product.

7. Attachments

- Do not use unsupported attachments as these may be hazardous or cause damage to the product.

8. Extraneous Objects

- Do not insert anything into the openings of the unit.

9. Location

- Place the product indoors and avoid exposing it to lightning, rain, or direct sunlight.
- Do not place the product near a radiator or heat register.
- Try to place the unit at least 2 inches (~10cm) from any appliance susceptible to electromagnetic influences, such as a television or radio.
- Insure the ventilation considerations are followed when the unit is in service.
- Do not place the product on an unstable cart, stand, tripod, or bracket where it can fall. A falling object can cause injury and may cause serious damage to the product.

10. Lightning, Storm, or Not in Service

- Unplug the product from the wall outlet and disconnect the aerial during a thunderstorm or when left unattended and unused for long periods of time. This will prevent damage due to lightning or power surges.

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1 Introduction

The ZvMXE+ IP Set Top Box is a small, powerful, unit designed to receive IP streams, decode, and present to the user the IP and RF delivered content as simply as if they were watching broadcast television.

The ZvMXE+ is designed to work in tandem with ZeeVee ZyPerMX, ZyPerMX2/4, HDbridge and ZvPro iSeries streams; as well as RF modulated signals from ZeeVee HDbridge and ZvPro series products. ZvMXE+ features include:

- ZvMXE+ auto-discovers the ZyPerMX, ZyPerMX4, HDbridge and ZvPro iSeries streams, which are added automatically to the channel lineup.
- Additional channels/streams can be added manually.
- Supports common compressed HD formats: H.264, MPEG-2, MPEG-4, and others.
- Supports many kinds of IPTV programs.
- Infrared remote control with programmable buttons allows direct control of the television (unified remote control for controlling user experience).
- Built in QAM and ATSC Tuner.



2 Quick Setup

Connect the ZvMXE+ to power and connect the ZvMXE+ to a display using an HDMI cable. Use a standard Ethernet cable to connect to the Network Router or Switch. If streaming RF signals; connect a Coax cable from the modulated signal network.

Prior to streaming video, you must first configure the Network settings on the ZvMXE+.

Using the remote control, hit the MENU button to access the Main options screen. Using the arrow keys navigate to the setup icon (the GEARS) and click there. See details below in the section “Configuring the Network”.

Tip: The ZvMXE+ can make use of a USB HID device. Simply connect a standard USB keyboard to one of the USB-Type A ports on the ZvMXE+. The on-screen keyboard can be used with the remote control, but it is slow and cumbersome for anything more than a single box.

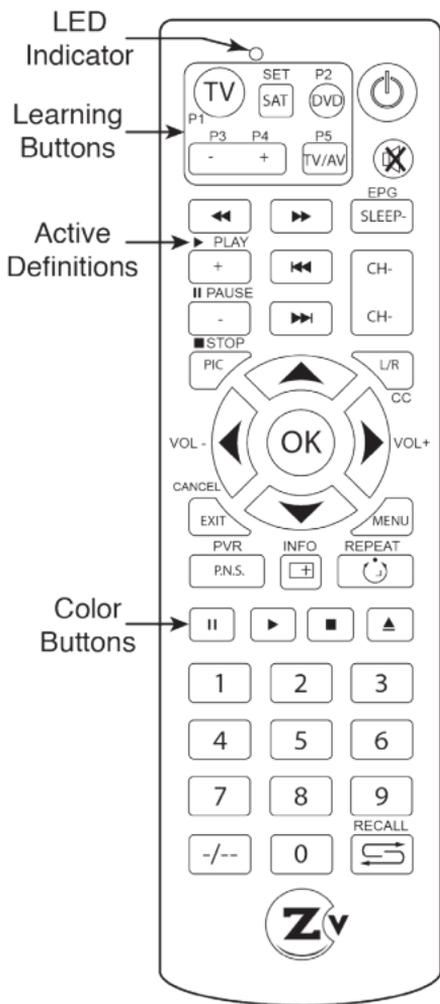
Note: It is critical to ensure that the ZvMXE+ is assigned an IP address either statically or using DHCP before you will be able to stream video.

Once the Network is configured the ZvMXE+ will automatically detect and add to the channel lineup any multicast video stream from ZyPerMX, ZyPerMX2/4, HDbridge and ZvPro iSeries devices on the same network. To add video streams from other sources the Channel Guide must be updated manually. Please see the “Channel Guide File Specification” chapter for details.

See the section on Configuring RF channels to add RF channels to the lineup.

Note: The MXE+ cannot be configured to receive IP streams over a WiFi Network. WiFi networks do not provide enough bandwidth and reliability for streaming to the MXE+.

3 Remote Control



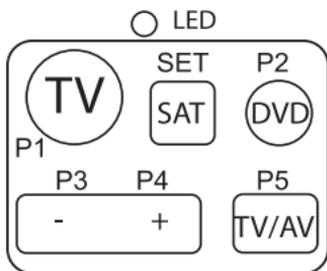
The ZvMXE+ decoder is supplied with a partial learning remote control device. Buttons P1-P5 can be programmed to mimic the functions of a select set of buttons from another remote control unit.

The intention is that the TV viewing experience can be controlled from a single handset to include power and volume control of the television set and all other functions directed at controlling the ZvMXE+ decoder.

Button Definitions

Key	Definition
	Power. Pressing once turns on ZvMXE+ again turns it off
	Mute. Disables/Enables audio
	Displays Electronic Program Guide information
	Quick channel up and down buttons when watching television programs.
	Cancels/Exits menu levels when navigating interface.
	Displays current playback information
	Causes repeat mode to be entered when playing stored media
	Color buttons. Program specific meaning. Red button used to insert a dash for RF tuner channels.
	The Dash button does not work with the MXE+ RF tuner app. Users must use the "red" button to insert a dash.
	Recall last channel being played
0-9	Numeric digits for entering channel numbers
	Navigation buttons when driving configuration interface. During normal playback Up/Down sets channels, Left/Right sets volume and OK displays channel list.

Programmable Buttons



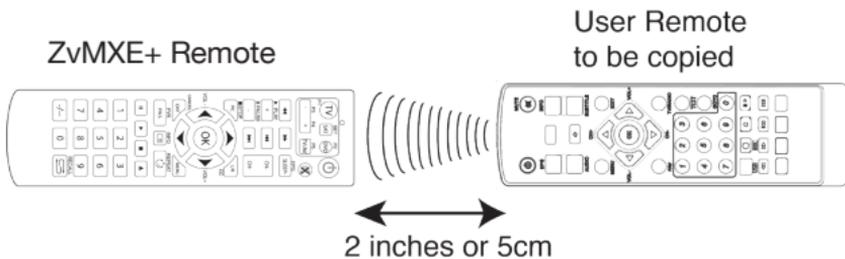
The upper-left portion of the remote houses a set of programmable keys. The intent is to allow for common television functions to be programmed so the user only needs to use a single remote control device to manage their television experience when using the ZvMXE+ receiver/decoder.

Keys P1 through P5 can be set to any function the user desires. The labeling is present only to provide visual cues the user may use to help remember which key has been programmed to which function.

The "SET" key has a fixed function that is not programmable. It initiates the programming process for setting the P1-P5 key functions.

Programming P1-P5 Buttons

The ZvMXE+ remote has been tested to be compatible with a large number of remotes. However, some manufacturers use infrared codes that are obscure and cannot be "copied" into the programmable keys of the ZvMXE+ remote.



To program a key the following sequence shall be executed:

Step 1: Press and hold the "SET" button for three seconds

- The RED LED lights immediately when the button is pressed
- After 3 seconds the LED changes to a very bright state

Step 2: Press the key you wish to program (P1-P5)

- The RED LED changes to a slow flash (1/second)

Step 3: Press the key on the remote that you are copying

- The RED LED performs three quick flashes to acknowledge
- RED LED turns on solid again.
- Repeat steps 2 and 3, or simply wait for light to extinguish

Step 4: Test Programmed key on television or device to be controlled

- If command is not executing properly, repeat steps 1-3

4 Adjusting the TV Screen

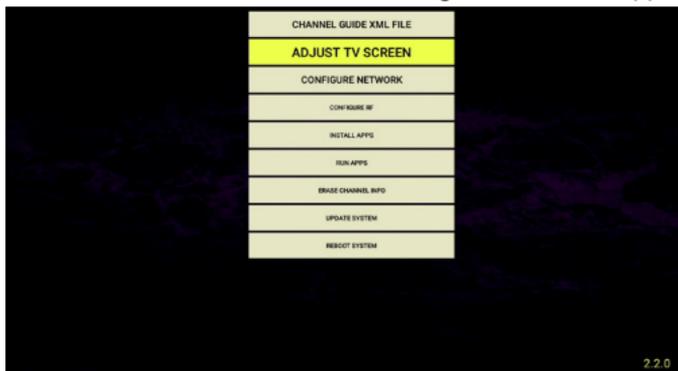
While watching television -> Hit the MENU button

That brings up the Main options screen.

Then navigate over to the Setup icon (the GEARS) and click there.

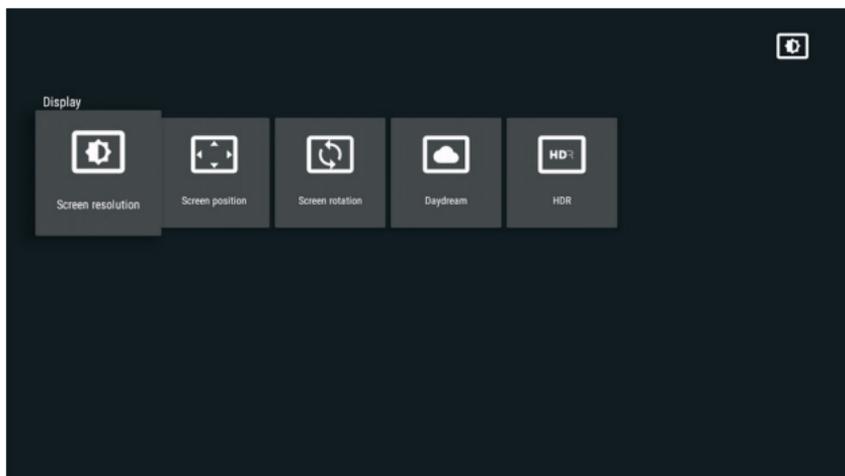


After the Gear icon has been clicked, the Configuration Screen appears.

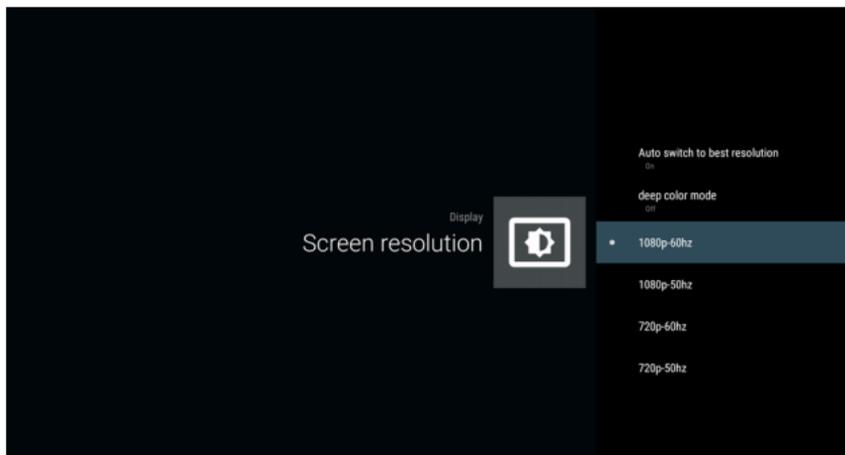


Click on the "ADJUST TV SCREEN" button.

Click on “Adjust TV Screen” This will bring up the Display menu for adjusting Screen Resolution, Screen Position, Screen Rotation, Daydream/Sleep and HDR



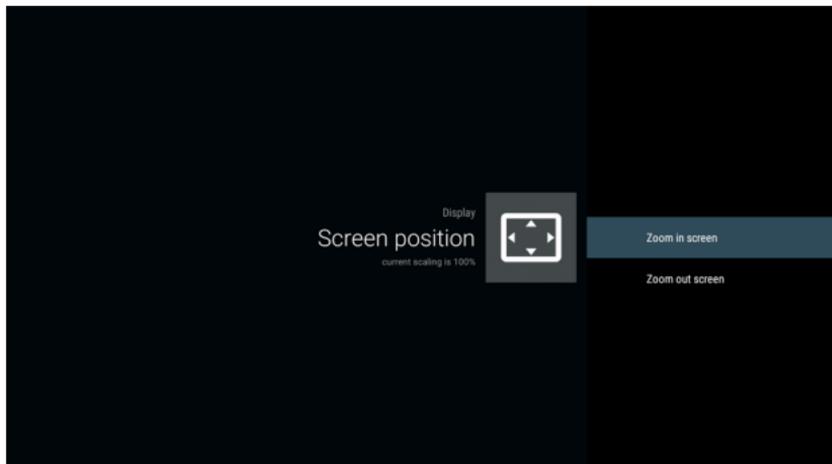
Screen Resolution examples:



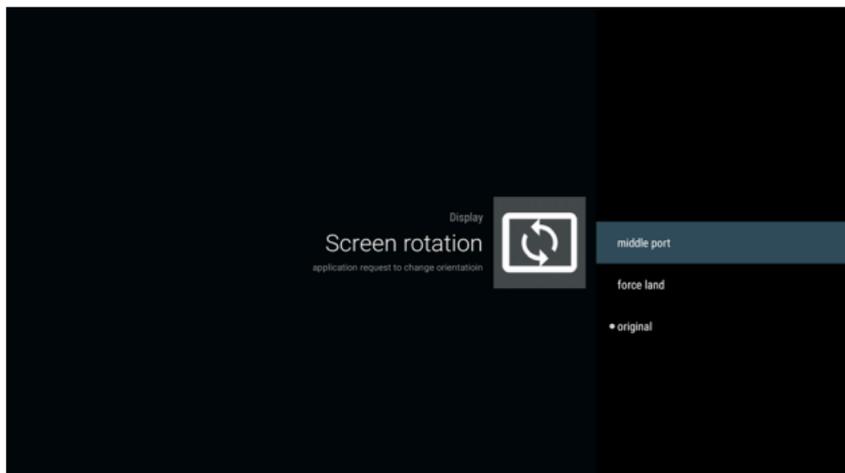
Note: Display must support selected resolution. Selecting a resolution not

supported by the display can result in loss of image.

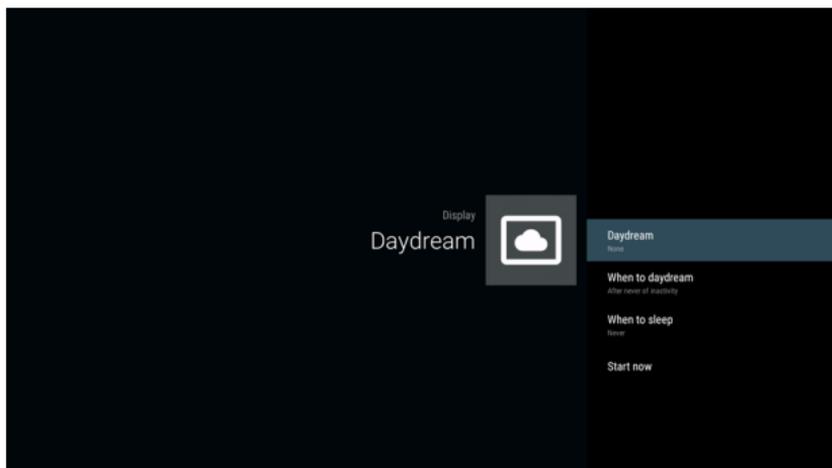
Screen Position control:



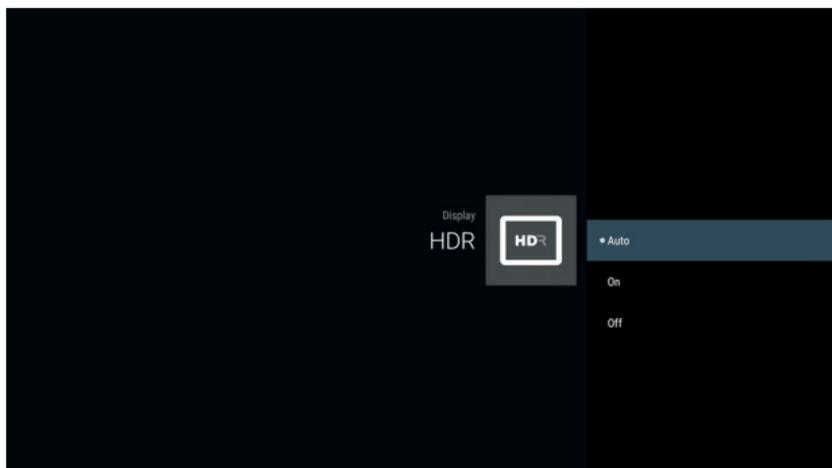
Screen Rotation control:



Daydream/Sleep control:



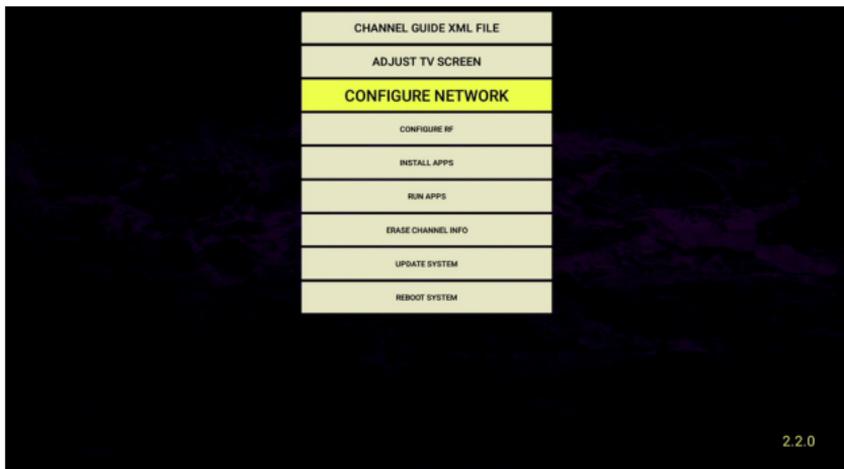
HDR Settings:



5 Configuring the Network

Note: These directions are based on firmware version 2.1.3 and newer.

Navigate to, and click on the “CONFIGURE NETWORK” button.



This will bring up the Network Select menu for configuring Ethernet and Wi-Fi.

Select the Ethernet option from the menu to configure Network settings for the MXE+.

Note: The MXE+ cannot be configured to receive IP streams over a WiFi Network. WiFi networks do not provide enough bandwidth and reliability for streaming to the MXE+.

< Network select

Wi-Fi >

Ethernet >

If a DHCP server is on the network, the IP address and associated fields will automatically be filled in. Otherwise the fields must be manually entered.

< Ethernet

DHCP On Off

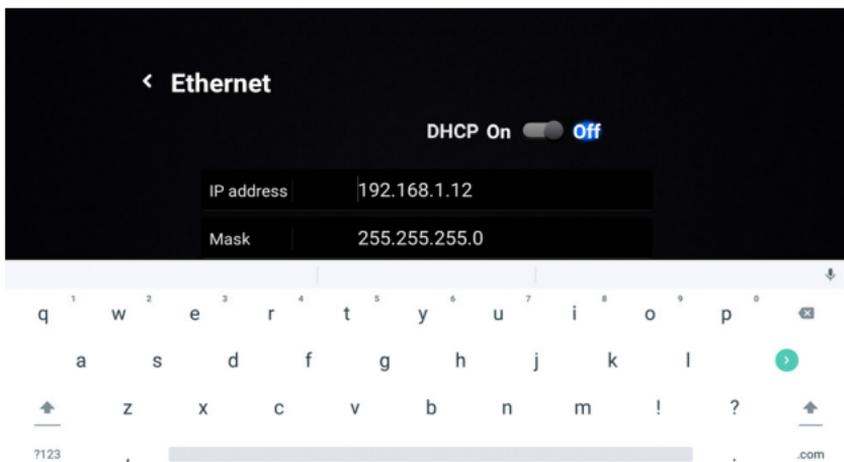
IP address 192.168.1.12

Mask 255.255.255.0

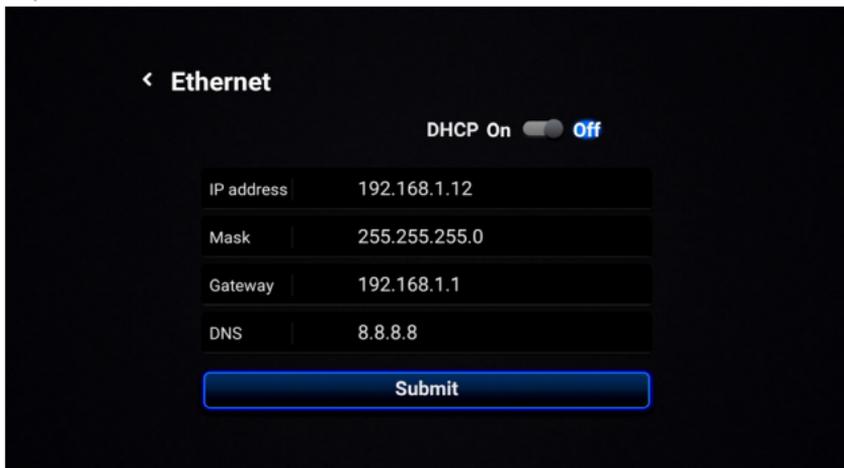
Gateway 192.168.1.1

DNS 8.8.8.8

Submit



Enter the IP address manually. It is recommended to use a USB keyboard and mouse. Highlight the arrow key on the onscreen keyboard (where the enter key is normally found). Once it is selected, press enter on the keyboard or the OK button on the remote to move to the next line item.

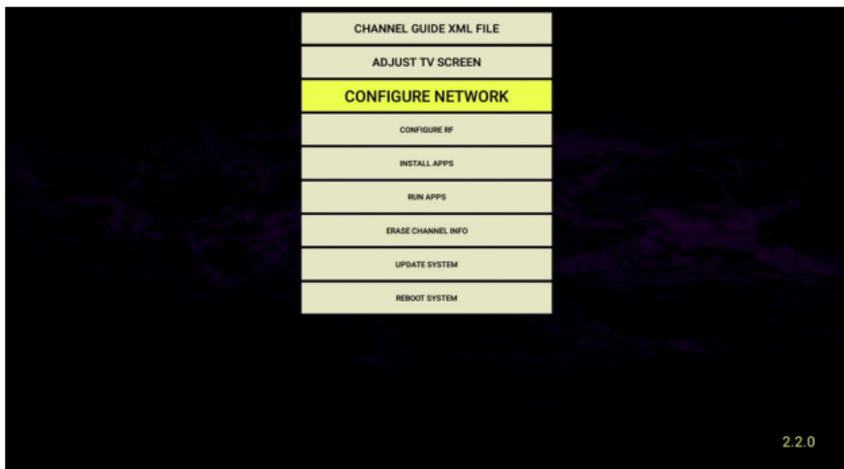


Once the IP address, Mask, Gateway and DNS are entered manually, highlight "Submit" and click the OK button on the remote.

Configuring the Network

Note: These directions are based on firmware prior to 2.1.3

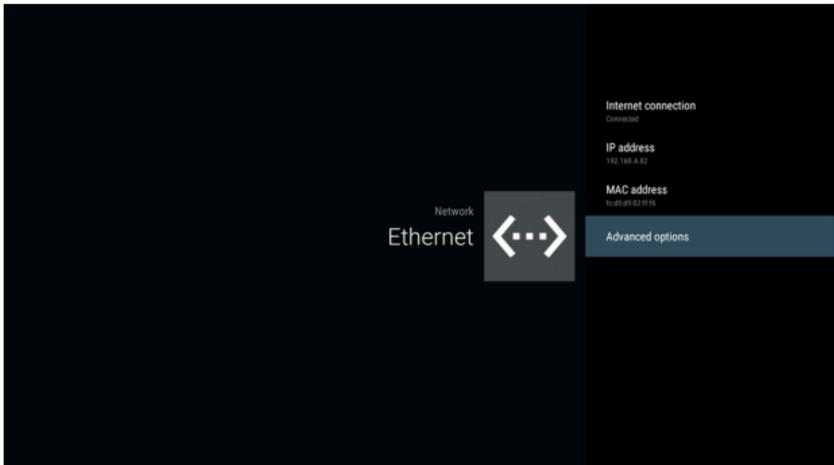
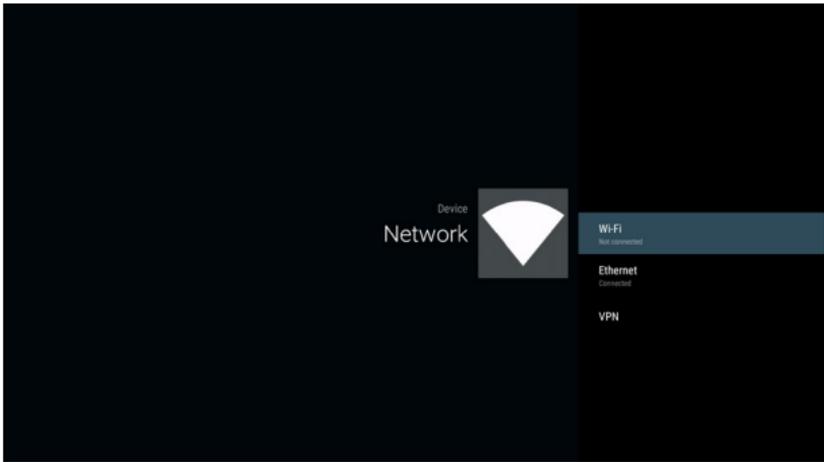
Navigate to, and click on the “CONFIGURE NETWORK” button.

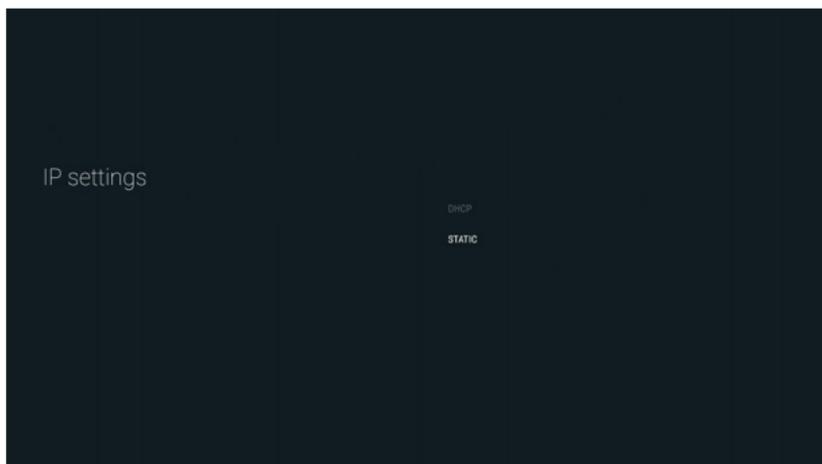
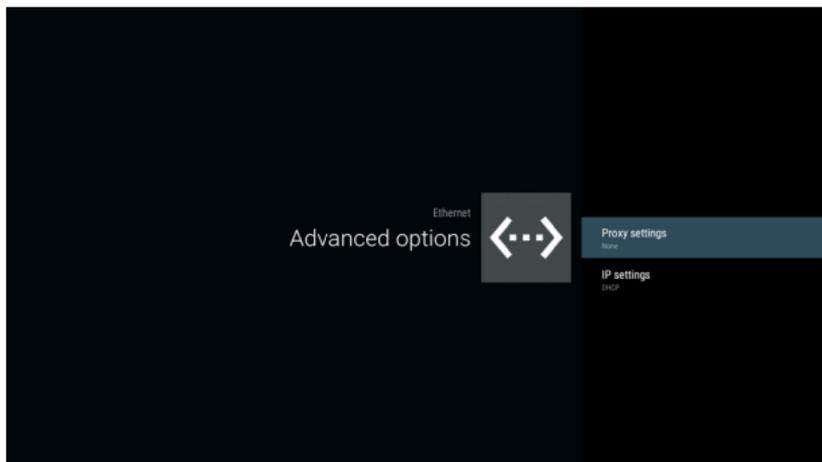


This will bring up the Wireless & Networks menu for configuring Ethernet and VPN.

Select the Ethernet option from the menu to configure Network settings for the MXE+.

Note: The MXE+ cannot be configured to receive IP streams over a WiFi Network. WiFi networks do not provide enough bandwidth and reliability for streaming to the MXE+.





IP address:

Enter a valid IP address.
Example: 192.168.1.128

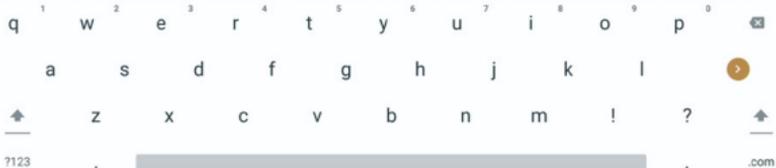
192.168.4.82



Gateway:

Enter a valid IP address or leave empty.
Example: 192.168.1.1

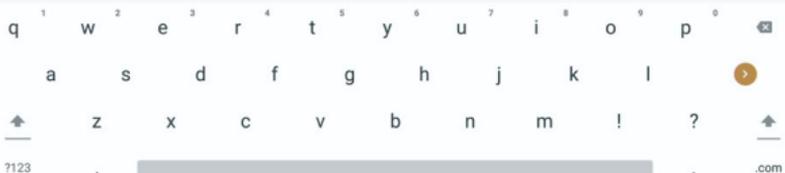
192.168.4.1



Network prefix length:

Enter a valid network prefix length.
Example: 24

24



The value for Network Prefix Length corresponds to the Subnet Mask setting.

Examples:

Subnet Mask: 255.255.255.0 Prefix Length = 24

Subnet Mask: 255.255.0.0 Prefix Length = 16

Subnet Mask: 255.0.0.0 Prefix Length = 8

DNS 1:

Enter a valid IP address or leave empty.
Example: 8.8.8.8

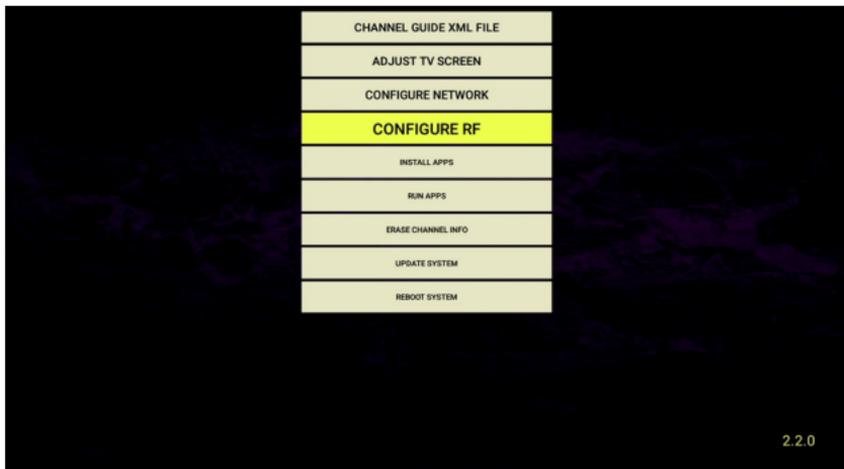
8.8.8.8



6 Configure RF Channels

Click on the “Configure RF” button. This will bring up a menu to search for available RF channels. (North American QAM or over air ATSC)

Note: A coax cable must be connected to the MXE+ unit that is carrying the RF channels to be searched for.



Note: The Configure RF feature was added with firmware version 2.2

It is not supported with earlier firmware releases.

Important Note: Early MXE+ units have a front panel with the ability to display four characters and so it may not fully display a channel number. For instance, channel 100-1 will show up as “100-” on the display. Dotless channels like 25 will show “-16-”. Basically the front panel of these MXE+ units should be ignored.

Newer generation MXE+ units have removed the front panel display.

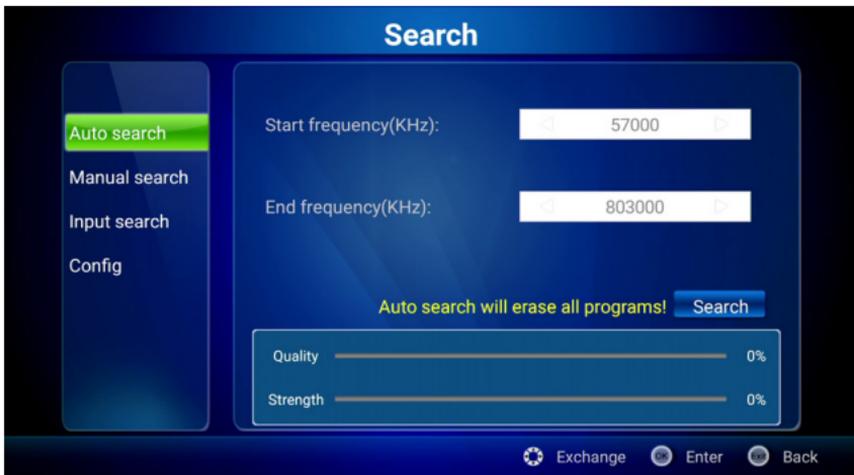
The first thing you need to do is arrow down to the Config option and press the OK button on the remote.



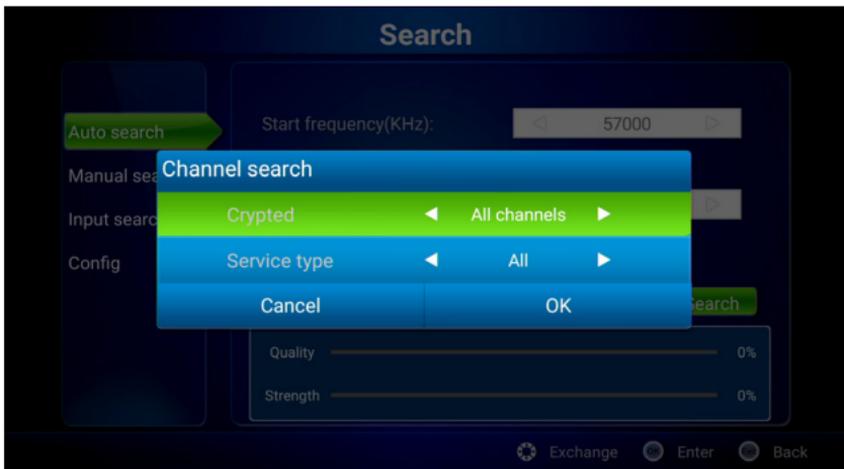
Now arrow over to Signal type and select either "Air" to "Cable". Hit the "Exit" key on the remote once the selection is made.



Now arrow up to the “Auto search” option and hit the OK button on the remote.



A Channel Search dialog window will appear. Arrow down to OK and click it to start the search process.



The search will begin and Progress will be shown across the top of the screen. This process can take several minutes to complete.



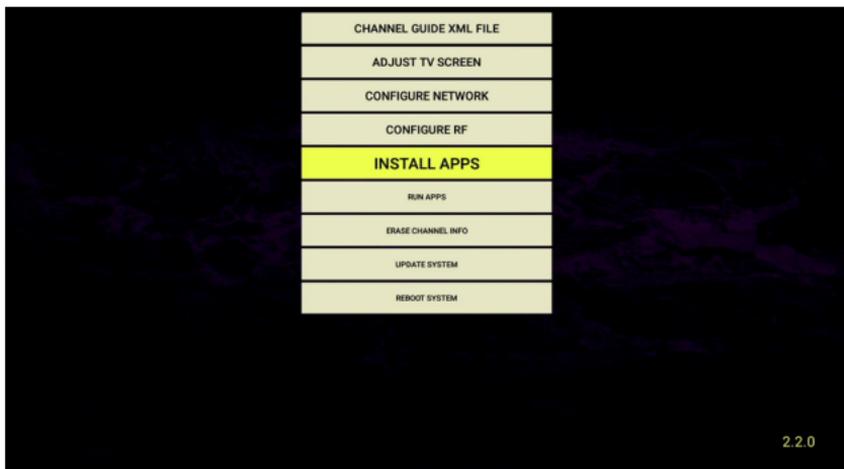
Once completed you will need to Exit back out to the main menu. You can now Watch TV and all available RF and IP channels will be shown.

7 Installing Applications

Navigate to, and click on the “INSTALL APPS” button. This will bring up a menu to select any valid Android applications.

Note that any applications must be on a connected USB Flash device. The MXE+ cannot search for applications on the Network and cannot access the Play Store.

Please note that ZeeVee will not support the installation of any 3rd party applications on the ZvMXE+. Please contact the software provider for the support of any applications.

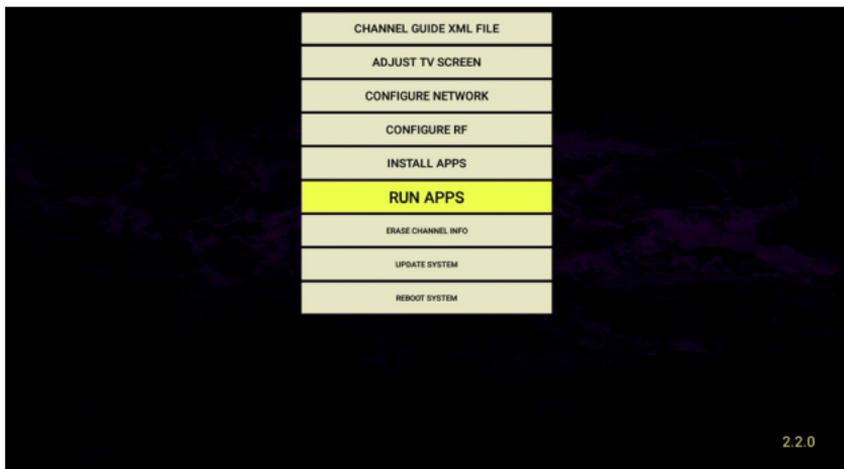


8 Running Applications

Navigate to, and click on the “RUN APPS” button. This will bring up a menu to showing all Android apks applications that have been installed on the MXE+.

Select one using the arrow keys on the remote and hit “OK” to run.

Please note that ZeeVee will not support the running of any 3rd party applications on the ZvMXE+. Please contact the software provider for the support of any applications.



9 Custom Channel List Deployment

9.1 BACKGROUND

The ZvMXE+ IP Set Top Box is a small, powerful, unit designed to receive IP streams, decode, and present to the user the IP-delivered content as simply as if they were watching broadcast television.

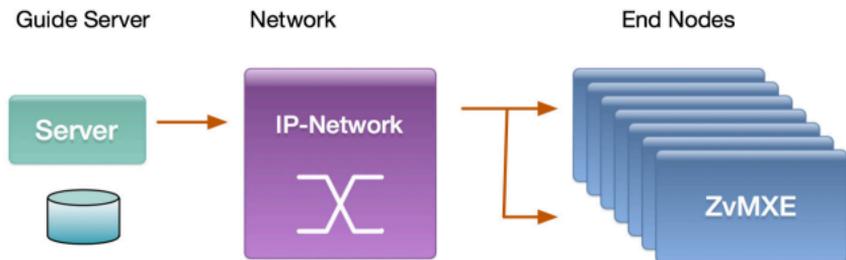
When decoding and displaying content generated by ZeeVee content sources, the discovery of the streams and the population of a channel list and plan is automatic. The sources send “beacons” and the ZvMXE+ units receive those beacons, learn the sources, and populate a channel guide and list for selection by the user.

There are cases where a custom channel list is desired:

- Restricting User Access to certain channels
- Adding custom names and logos
- Adding content to the ZvMXE+ channel list that is NOT sourced by ZeeVee
 - streaming video files from a server, for example

Requirements:

- ① All ZvMXE+ units to participate in the remote guide must be connected to a common network.
- ② An accessible server capable of serving files.
- ③ A means for the manager to edit, install and manage the files on that server.



9.2 CHANNEL GUIDE MODES

Full-Auto

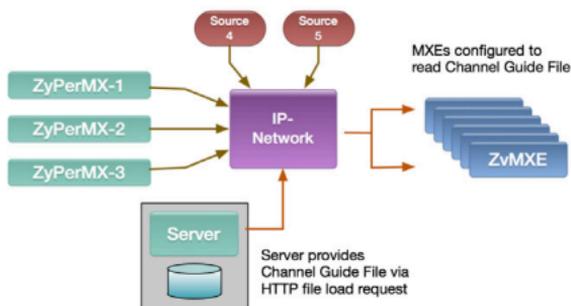
The default channel guide mode is “Full-Auto”. This mode is available when the streaming sources are ZeeVee products (ZvProxxx-I, ZyPerMX, HDb2920-i, or HDb3000 media module with IP options). The ZeeVee products automatically broadcast “Beacons” which contain information about the available stream.

The channel guide in the ZvMXE+ will be populated based on information contained in the received beacon information from each of the sources. No the management is required. This is the baseline “Plug-and-Play” option and may be sufficient for the majority of installations.



Additive

Normally, if a channel guide file is specified, the channels specified will be added to the plan. If channels are specified in the channel plan file that overlap those that correspond to Beacons being generated by ZeeVee equipment, the information in the channel plan file will supersede that being broadcast by the ZeeVee unit sending the beacons.

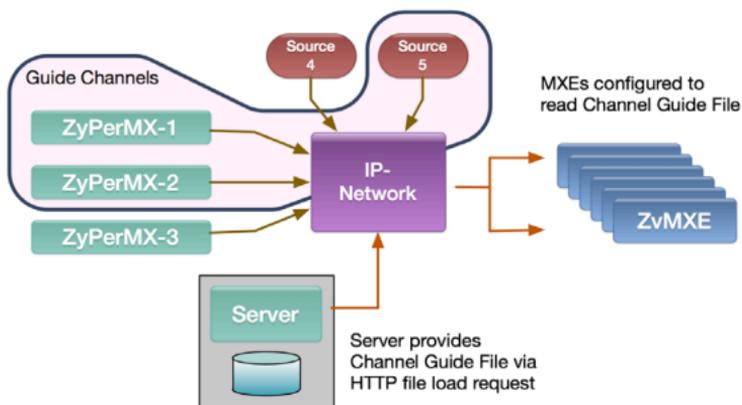


If the guide file is in “Additive” mode only the non-ZeeVee channels need to be specified in the guide file. The ZeeVee channels will send beacons that are learned by the ZvMXE+ and those channels will automatically be added to the guide. In the diagram shown Source4 and Source5 are streams supplied by non-ZeeVee equipment. Only stream information for Source 4, and Source 5 need to be specified in the guide file.

Even in additive mode, the ZeeVee channels can be specified in the guide file. This allows for the channel number, label, icon, etc., to be altered in one common place without having to individually manage the ZeeVee sources. Information provided in a guide file supersedes the information contained in the beacon.

Exclusive

A channel guide file can be specified such that it is “exclusive”. Guide files that are exclusive specify that ONLY the channels in the guide file are to be included in the channel lists presented to the user. Any beacons or self-advertised channels are to be ignored by the ZvMXE+ if there is not an entry in the guide file.



In the diagram shown, if the guide file is specified as exclusive, and the only entries in that guide file are for ZyPerMX-1, ZyPerMX-2, and Source 5, then any other channel will be ignored and not included in the guide. The only stream the user will be able to select are for the channels described in the guide file.

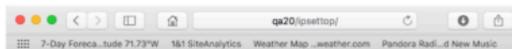
9.3 SERVER REQUIREMENTS

The ZvMXE+ may be configured to fetch a channel list and supporting elements.

The channel list file and others (icon files, etc) must be served by a web server on a network accessible to the ZvMXE+ units.

That server (LAMP, WAMP, whatever...) should be configured to serve a directory that contains the files that will be used to control the channel list of the ZvMXE+ units.

If the Internet is accessible, a Google drive could even be used. The ZvMXE+ units only fetch the channel guide files at power-up or upon direct request by the user. At all other times the ZvMXE+ units use locally cached copies of the channel guide information.



Index of /ipsettop

Name	Last modified	Size	Description
Parent Directory	-	-	-
Bangles.mp4	2016-09-07 17:24	24M	
FengTV.png	2016-02-10 11:58	19K	
ICONS/	2016-09-08 13:41	-	
JayneMansfield.mp4	2016-09-07 17:24	26M	
LogoSmall.png	2016-02-10 11:58	4.3K	
OfficePlanA.xml	2016-09-07 17:29	1.4K	
OfficePlanA_djif.xml	2016-09-08 16:07	2.1K	
SDM_73_s.png	2016-02-10 11:58	39K	
SDM_75_s.png	2016-02-10 11:58	41K	
SDM_170_s.png	2016-02-10 11:58	49K	
SDM_171_s.png	2016-02-10 11:58	49K	
ZeeVeeSwoosh.mp4	2016-02-10 11:58	13M	
ZeeVee_Seasons_v5.mp4	2016-09-08 15:59	66M	
ZeroDSZeroMotorcycle.>	2016-09-08 15:59	74M	
billchannels.xml	2016-08-03 15:21	577	
billchannels2.xml	2016-08-03 14:08	578	
captain_america_tra1.>	2016-09-08 15:54	39M	
chan.lst	2016-02-10 15:51	1.5K	
channels	2016-05-31 13:32	1.3K	
djif_channels.xml	2016-06-08 17:26	356	
djif_channels2.xml	2016-08-10 13:00	335	
hbo.png	2016-02-10 11:58	1.8K	
hisicap.265	2016-06-29 14:28	14M	
zvmxe_channels.xml	2016-06-08 17:20	1.2K	

Easy Test: Point a browser at the directory that will be used and make sure the supporting information is visible while on the same network as the ZvMXE+ units.

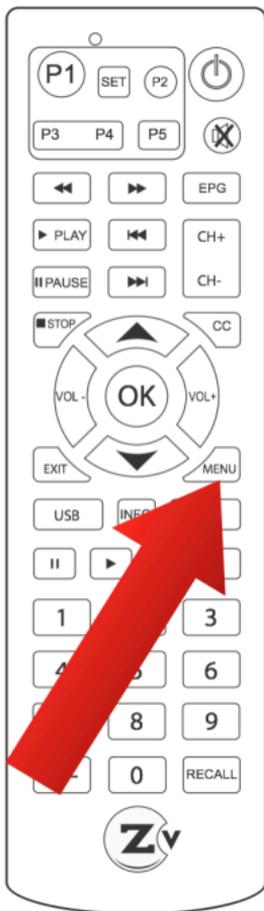
In the case shown, the server QA20 is serving a directory called “ipsettop” to the same network as the ZvMXE+.

If a browser can see the files, the ZvMXE+ units will be able to see the files.

All file accesses by the ZvMXE+ device are via HTTP file requests.

9.4 SETUP ON ZVMXE+ FOR REMOTE GUIDE

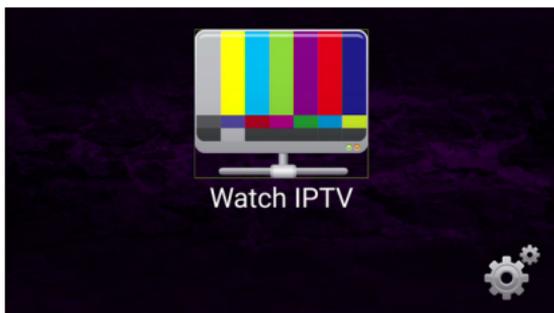
To configure the ZvMXE+ to use a remotely specified guide, the device itself must be configured to point to the location from where the guide file(s) are being served.



While watching television —> Hit the MENU button

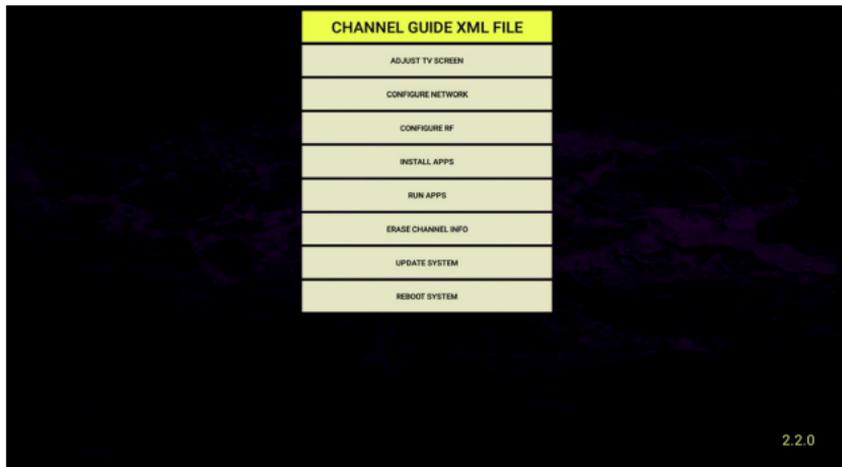
That brings up the Main option screen.

Then navigate over to the Setup icon (the GEARS) and click there.

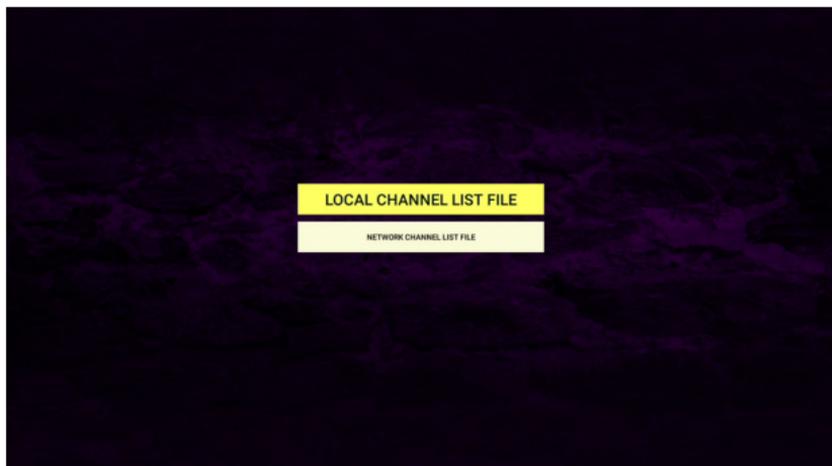


After the Gear icon has been clicked, the Configuration Screen appears.

Navigate to, and click on the “CHANNEL GUIDE XML FILE” button.

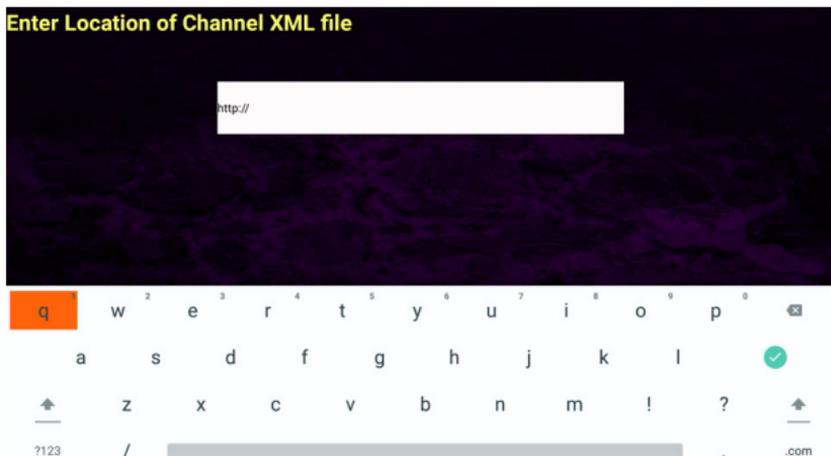


This will bring up a file dialog



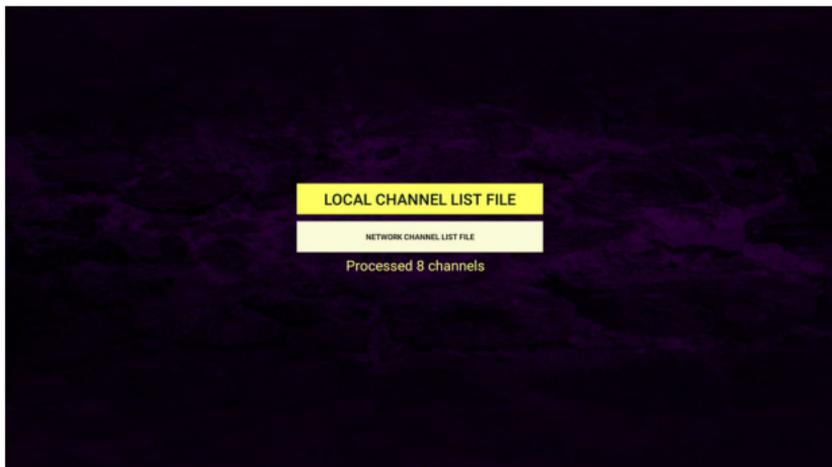
In the dialog, enter the pointer to the location on the web server where you have placed the Channel Guide file. Local Channel List File would be located on a USB memory stick plugged into one of the ZvMXE+ USB ports. The location of a Network Channel List file depends on where the IT admin has allowed HTTP file browsing to.

Pro Tip: The ZvMXE+ can make use of a USB HID device. Simply connect a standard USB keyboard to one of the USB-Type A ports on the ZvMXE+ and the name can be typed in. The on-screen keyboard can be used with the remote control, but it is slow and cumbersome for anything more than a single box.



Once the name is entered, navigate to and click the “Green Check” button.

The ZvMXE+ device will read the remote Channel Guide file. The number of channels configure will be shown as below. Verify that this matches the expected number.



This completes all the setup required on the ZvMXE+.

Hit the EXIT button once to return to the Configuration Buttons.

Hit the EXIT button again to return to the main Option Screen.

Then Navigate to the “Watch IPTV” icon and click that. You should be watching the streaming content.

At any time while watching television, the CHAN+ CHAN- keys will advance sequentially up or down the channel list.

At any time the up and down arrows can also be used to advance sequentially up and down the channel list.

Hitting the **EPG** button on the remote brings up the entire electronic program guide.

Scroll up and down with the arrow keys to verify presence of all the expected channels.

Hitting the **OK** button will tune directly to the highlighted channel.

9.5 CHANGING CHANNEL AND CONTROL VOLUME REMOTELY

There is a feature that allows MXE+ channel to be changed and volume controlled remotely.

HTTP channel change feature:

`http://ip_address:8080` returns the MXE+ channel list. The current channel has an '*' next to it.

`http://ip_address:8080/channel=n` tunes the MXE+ to specified channel number. Will return "Invalid Channel Number" as appropriate.

Volume control options include Mute, Unmute, Volume Up and Volume Down. Please note this controls volume on the MXE+, not the connected display. The syntax for each command is similar to the channel command and are shown below:

`http://ip_address:8080/mute`

`http://ip_address:8080/unmute`

`http://ip_address:8080/volumeUp`

`http://ip_address:8080/volumeDown`

EXAMPLES

Assuming MXE+ IP Address is: 192.168.1.23

`http://192.168.1.23:8080` This will return MXE+ channel list

`http://192.168.1.23:8080/channel=77` This will tune MXE+ to channel 77

`http://192.168.1.23:8080/mute` This will mute the audio

`http://192.168.1.23:8080/unmute` This will unmute the audio

`http://192.168.1.23:8080/volumeUp` This will increase the audio

`http://192.168.1.23:8080/volumeDown` This will decrease the audio

9.6 POWER ON/OFF DISPLAY USING CEC

There is a feature that allows MXE+ to remotely turn a display on or off using the HDMI CEC feature.

CEC power on/off feature:

`http://ip_address:8080/poweron` will power on the display

`http://ip_address:8080/poweroff` will power off the display

Note: The display must support CEC functionality for this feature to work properly.

EXAMPLE

Assuming MXE IP Address is: 192.168.1.23

`http://192.168.1.23:8080/poweron` This will turn display on

`http://192.168.1.23:8080/poweroff` This will turn display off

Important Note for Samsung displays

Only Samsung displays with the 3.5mm jack for RS232 work. They must NOT be labeled “ex-link”. Those will not work.

These displays also require a special Serial Cable available from ZeeVee. Part number: ZvMXePlus-SCO

If the hardware is correct, it is also important to be sure any CEC options are turned OFF in the Samsung settings, including Anynet+.

Action: power on Samsung TV using USB serial dongle

`http://ip_address:8080/poweronSamsung`

Action: power off Samsung TV using USB serial dongle

`http://ip_address:8080/poweroffSamsung`

9.7 LOADING AND DISPLAYING A STATIC IMAGE

There is a feature that allows an MXE+ channel to display a customer provided static image when not displaying video.

HTTP static image feature

The following commands are used to implement this feature: `imageUpload`, `imageDelete`, `imageOn`, `imageOff`.

The system status will persist across reboots in terms of being in image mode or video mode.

The `imageUpload` command expects an argument passed that specifies the path to the image file.

The syntax for each command is similar to the channel and volume commands and are shown below:

```
http://ip_address:8080/imageOn
```

```
http://ip_address:8080/imageOff
```

```
http://ip_address:8080/imageDelete
```

```
http://ip_address:8080/imageUpload/http://ip_of_file_server/image.jpg
```

EXAMPLES

Assuming MXE+ IP Address is: 192.168.1.23

```
http://192.168.1.23:8080/imageOn
```

 This will display the image

```
http://192.168.1.23:8080/imageOff
```

 This will stop image display

```
http://192.168.1.23:8080/imageDelete
```

 This will delete current image from memory

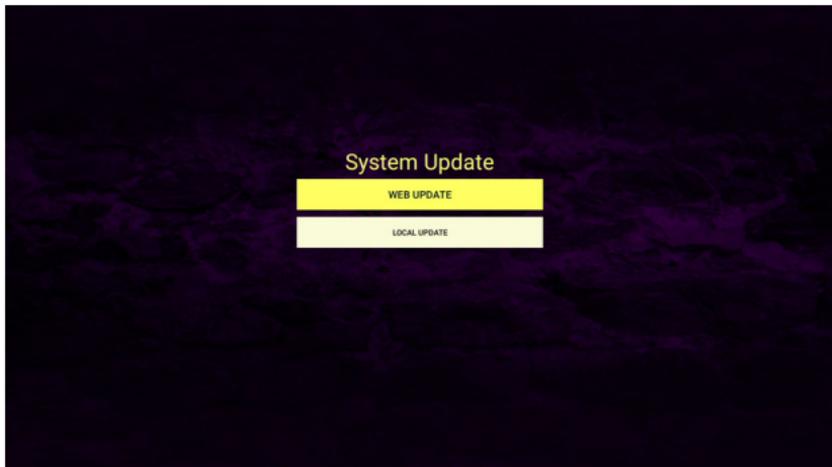
```
http://192.168.1.23:8080/imageUpload/http://192.168.1.25/ZeeVee.jpg
```

This will load an image named ZeeVee.jpg into memory

10 Updating System

Navigate to, and click on the “Update System” button. This will bring up a menu to showing options for updating the system firmware.

Select one using the arrow keys on the remote and hit “OK” to run.



Web Update will attempt to access the Internet to download the latest update. No update will be performed if the current firmware is up to date.

Please note that the Web Update feature requires firmware version 2.1.5 or newer to already be installed. If an earlier firmware version is installed, please follow the Local Update process.

Local update will all you to install the update locally from a USB memory stick.

11 Channel Guide File Specification

The Channel Guide file is an XML files that describes the program information to be displayed as part of the channel guide to the ZvMXE+ user.

Basic File Format:

IP channel stream information will be describe with the following XML syntax.

```
<?xml version="1.0" encoding="UTF-8"?>
<ZVIP type=["guide" | "guideonly"] >
  <CHAN>
    <ip>streamIPAddr</ip>
    <port>streamPort</port>
    <srcip>sourceIPAddr</srcip>
    <tstype>[tsoverudp | tsoverrtsp | http]</tstype>
    <name>shortChanName</name>
    <icon>webLink</icon>
    <pnum>channelNumber</pnum>
  </CHAN>
  ...
</ZVIP>
```

Header Line:

```
<?xml version="1.0" encoding="UTF-8"?>
```

The header line defines the file type and must appear exactly as shown as the first line in the file.

ZVIP Type Line:

The second line must be the Type line and defines attributes that apply to the entire guide.

```
<ZVIP type=["guide" | "guideonly"] >
```

type is a required tag and must have one of the following options

"guide" - channels described are added to auto discovered channels to form ZVMXE+ channel list. For duplicate channel descriptions(same stream address and port), the data in the guide file will supersede data from auto discovery.

"guideonly" - Disable auto discovery of Zeevee channels on the network. Only channels described in guide file will be presented in channel list of the ZVMXE+.

Channel Guide Information Block:

The following represents a block of data that would describe the associated guide information for a given stream.

```
<CHAN>
  <ip>streamIPAddr</ip>
  <port>streamPort</port>
  <srcip>sourceIPAddr</srcip>
  <tstype>[tsoverudp | tsoverrtsp | http]</tstype>
  <name>shortChanName</name>
  <icon>webLink</icon>
  <pnum>channelNumber</pnum>
</CHAN>
```

Note that there can be as many <CHAN> ... </CHAN> blocks in a Channel Guide file as the user wishes to add to the guide.

In the case of Additive operation (the **type** field set to **guide**) only those streams that are desired to be included that are not sourced by ZeeVee equipment need be described. The rest can be auto-discovered and the guide information included as it is delivered in the channel beacons.

Alternately, if it is desired to override the information that arrives in the ZeeVee source beacons, the information contained in the Channel Guide files will supersede the beacon data.

In the case of Exclusive operation (the **type** field set to **guideonly**) only those channels explicitly listed in the Channel Guide file will be included in the channel list presented to the ZvMXE+ user. None of the auto-discovered beacons channels will appear in the user list.

IP Tag: <ip>streamIPAddr</ip>

The IP tag indicates the stream address/pointer associated with the channel. *required

streamIPAddr is a required value for the channel

String describing the IP address/string specification for the stream to be "tuned".'

For UDP or RTP multicast streams, the streamIPAddr represents the IP multicast address for the IP stream (example: <ip>224.1.2.99</ip>)

For files played from a server that allows serving of http requested media files the streamIPAddr is the URL describing the location of the file to be played (example: <ip>http://qa20/ipsettop/Bangles.mp4</ip>)

Port Tag: <port>streamPort</port>

The Port tag indicates the stream data associated with the channel. *required when the streamIPAddr is a multicast IP address. Not required for when the tstype is http.

streamPort is a required value for non-http streams

String describing the IP port for the stream to be

"tuned" (example: <port>21216</port>)

SourceIP Tag: <srcip>sourceIPAddr</srcip>

The SourceIP tag indicates the IP address associated with the channel.
Optional

streamIPAddr is a optional value for the channel

String describing the Source IP address
specification for the stream to be "tuned".'

TSTYPE Tag: <tstype>[tsoverudp | tsoverrtp | http]</tstype>

The transport stream tag indicates the stream data associated with the channel.

tstype is a required tag for a channel description block

"**tsoverudp**" - indicates the stream is carried in
UDP transport format

"**tsoverrtp**" - indicate that the stream is carried
in RTP transport format.

"**http**" - indicate that the stream is delivered as
a file from an http server.

NAME Tag: <name>shortChanName</name>

The name tag of the stream. The specified name will be displayed in the guide when browsing or tuning the channel. *required

shortChanName is a required string of 7 ASCII characters or less.

String describing the short channel name for the stream to be "tuned" (example: <name>CNN-HD</name>)

ICON Tag: <icon>webLink</icon>

The file pointer to an icon picture to be used as a display icon when browsing channels on the ZvMXE+ guide page. Optional.

webLink is a string representing the pointer to a file.

The file pointed to by webLink shall be a .PNG formatted file to be used as the channel icon when displaying the guide on the ZvMXE+. The .PNG image size target is 128x128 pixels. Images smaller than this will be scaled up to 128x128. Larger images will be scaled down to fit. Images that require "on-the-fly" scaling may affect the performance when scrolling through the guide. (example: <icon>http://qa20/ipsettop/cnn128.png</icon>)

If no icon is specified the image shown will be the "ZVdot" logo.

PNUM Tag: <pnum>channelNumber</pnum>

The Program Number tag for the stream. The specified name will be displayed in the guide when browsing or tuning the channel. *required

channelNumber is a required string representing the

program number for the stream .

Number in the range of 0-999. The number will represent the channel number of the stream. The number will determine the order the channels are displayed in the guide. Additionally, the use may enter the program number directly into the remote to tune immediately to the channel (example: <pnum>801</pnum>)

The following is a complete Channel Guide File shown as an example.

```
<?xml version="1.0" encoding="UTF-8"?>
<ZVIP type="guideonly">
  <CHAN>
    <ip>224.1.2.20</ip>
    <port>21216</port>
    <srcip>192.168.0.55</srcip>
    <tstype>tsoverudp</tstype>
    <name>ABC-HD</name>
    <icon>http://qa20/ipsettop/ICONS/abc.png</icon>
    <pnum>600</pnum>
  </CHAN>
  <CHAN>
    <ip>224.1.2.24</ip>
    <port>21216</port>
    <srcip>192.168.0.55</srcip>
    <tstype>tsoverudp</tstype>
    <name>Weather</name>
    <icon>http://qa20/ipsettop/ICONS/twc.png</icon>
    <pnum>601</pnum>
  </CHAN>
  <CHAN>
    <ip>224.1.2.25</ip>
    <port>21216</port>
    <srcip>192.168.0.56</srcip>
    <tstype>tsoverudp</tstype>
```

```
<name>History</name>
<icon>http://qa20/ipsettop/ICONS/history.png</icon>
<pnum>602</pnum>
</CHAN>
<CHAN>
<ip>224.1.1.73</ip>
<port>25600</port>
<srcip>192.168.0.56</srcip>
<tstype>tsoverudp</tstype>
<name>NFL-Net</name>
<icon>http://qa20/ipsettop/ICONS/nfl.png</icon>
<pnum>701</pnum>
</CHAN>
<CHAN>
<ip>224.1.1.75</ip>
<port>25600</port>
<srcip>192.168.0.57</srcip>
<tstype>tsoverudp</tstype>
<name>ESPN-HD</name>
<icon>http://qa20/ipsettop/ICONS/ESPN128.png</icon>
<pnum>702</pnum>
</CHAN>
<CHAN>
<ip>http://qa20/ipsettop/JayneMansfield.mp4</ip>
<port>0</port>
<tstype>http</tstype>
<name>5-6-7-8</name>
<icon>http://qa20/ipsettop/ICONS/badj128.png</icon>
<pnum>801</pnum>
</CHAN>
<CHAN>
<ip>http://qa20/ipsettop/Bangles.mp4</ip>
<port>0</port>
<tstype>http</tstype>
<name>Bangles</name>
<icon>http://qa20/ipsettop/ICONS/anubis128.png</icon>
<pnum>802</pnum>
</CHAN>
</ZVIP>
```

12 Troubleshooting

Problem	Potential Reason	Possible Action
No Picture	Power is not connected	Connect power supply Check wall source
	The power is switched off	Switch on Power to ZvMXE+
No Sound from speaker	Incorrect or faulty connection with audio cable	Correctly connect the audio cables
	Sound on Mute	Select the mute/unmute on the remote
	"i-series" of the HDbridge3000, ZvPro or HDb2000 defaults to "AC3" audio which is not supported by the MXE+	In Maestro on the "i-series" change the Dig. Audio field to MP2 via the Device page with "advanced controls" checked. Note – i-series will require a reboot after this configuration change is made.
Remote control is not working	The battery is exhausted	Replace the remote control's batteries
	Remote control is not facing or visible to ZvMXE+ sense window	Reorient ZvMXE+ sense window and remote control
No channels found	No IP address assigned to the ZvMXE+	Connect ZvMXE+ to network with DHCP server or assign static IP address to ZvMXE+
Not working over WiFi	ZvMXE+ is not supported over a WiFi network	Use a hardwired network only

13 Technical Specifications

Item	Sub-Item	Parameter
Video	Decoder Format	MPEG4 AVC/H.264 HP@I4 MPEG2 MP@ML/HL
	Output Format	480i, 480p, 720p, 1080i, 1080p60Hz
	Aspect Ratio	4:3, 16:9, Auto
	Output Port	HDMI(v1.3C)
Audio	Decoder Format	MPEG-1(layer 1 & 2 & 3)
	Audio Output	Digital Audio over HDMI, RCAx2(L/R)
USB2.0	Supported Capacity	Unlimited
	Supported Media	MP3, WMA, JPEG, BMP, AVI

14 Declaration of Conformity

The Original Equipment Manufacturer herewith declares the conformity of the product with the following directives and standards:

Low Voltage Directive 2006/95/EC

EN 60065:2002+A1:2006

EMC Directive 2004/108/EC

EN 55 013:2001+A1:2003+A2:2006

EN 55 020:2007

EN 61 000-3-2:2006

EN 61 000-3-3:2008

FCC, CE, C-Tick

SK-903

15 Contact ZeeVee

Support

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

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