

entoneTM

Amulet

High Definition Television Receiver

User's Guide

P/N: 98-80xxxx-01

P/N: 98-80xxxx-03

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Table of Contents

<i>Declaration of Conformity</i>	2
<i>Preface</i>	5
TYPOGRAPHICAL CONVENTIONS	5
OVERVIEW OF THIS USER'S GUIDE	5
1.1 Safety Precautions	6
OPERATION AND CARE.....	6
2.1 Index to Parts and Controls	7
CONTENTS IN THE BOX	7
FRONT PANEL AND REAR PANEL.....	8
REMOTE CONTROL.....	9
3.1 Amulet Introduction	10
ABOUT THE AMULET HIGH DEFINITION TELEVISION RECEIVER.....	10
4.1 Connecting the TV.....	11
CONNECTING THE TV USING COAXIAL CABLE	12
SETTING UP TV TO USE CATV.....	12
CONNECTING THE TV USING RCA COMPOSITE.....	13
CONNECTING THE TV USING HDMI OR COMPONENT	14
SETTING HDMI AND COMPONENT OUTPUT RESOLUTION	16
SETTING CHANNEL ID	16
5.1 Connecting Audio System.....	17
6.1 Powering-Up Amulet	19
7.1 Remote Controls	21
LOADING BATTERIES	21
CONTROLLING THE AMULET	22
CONTROLLING YOUR TELEVISION AND OTHER A/V DEVICES	24
8.1 Closed Captioning.....	25
9.1 Aspect Ratio	26
10.1 User Menu	27
USING USER MENU.....	28
SETTING HDMI AND COMPONENT OUTPUT RESOLUTION	32
SETTING CLOSED CAPTIONING.....	32
SETTING URC IR KEYCODE.....	32
11.1 Specifications.....	33
12.1 Troubleshooting the Amulet.....	35

Declaration of Conformity

	<p>To ensure proper use of this product, please read this manual carefully and retain it for future reference. Should the unit require maintenance, contact an authorized service location.</p>
 	<p>WARNING: This symbol indicates the presence of uninsulated dangerous voltage within the product's enclosure that constitutes a risk of electric shock. Do not open the product's case.</p> <p>CAUTION: This symbol indicates you must take care; there is risk of damage to the equipment or to yourself.</p>
 	<p>To prevent fire or shock hazard, do not expose this product to rain or moisture. To reduce the risk of electric shock, DO NOT remove the cover or back. No user serviceable parts are inside. For servicing refer to qualified personnel.</p> <p>Declaration of Conformity (United States Only) This device complies with Part 15 of the FCC Rules. Operation is subject to the following 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 has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the Federal Communication Commission (FCC) Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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:</p> <ul style="list-style-type: none"> • Reorient or relocate the receiving antenna. • Increase the separation between the equipment and the receiver. • Connect the equipment to a different circuit from that to which the receiver is connected. • Consult the dealer or an experienced radio/TV technician for help.

	<p>Part 68 - Compliance Registration</p> <p>This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. A label on the bottom of this equipment contains, among other information, the Ringer Equivalence Number (REN) and the product identifier. For products approved after July 23, 2001 the product identifier is in the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g. 03 is a REN of 0.3). The REN is used to determine the number of devices that may be connected to a telephone line. For earlier products, the REN is separately shown on the label. If requested, this number must be provided to the telephone company. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. This equipment is designed to connect to the telephone network or premises wiring using a compatible modular jack that is Part 68 compliant. An FCC compliant telephone cord and modular plug is provided with the equipment. If this terminal equipment causes harm to the telephone network, the telephone company may request you to disconnect the equipment until the problem is resolved. The telephone company will notify you in advance if temporary discontinuance of service is required. If advance notification is not practical, the telephone company will notify you as soon as possible. You will be advised of your right to file a complaint with the FCC if you believe such action is necessary. If you experience trouble with this equipment, do not try to repair the equipment yourself. The equipment cannot be repaired in the field. Contact your ISP for further instructions. The telephone company may make changes to their facilities, equipment, operations, or procedures that could affect the operation of this equipment. If this happens, the telephone company will provide advance notice in order for you to make the modifications necessary to maintain uninterrupted service. If your home has specially wired alarm equipment connected to the telephone line, ensure that the installation of this equipment does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer. This equipment cannot be used on public coin phone service provided by the telephone company. Connection of this equipment to party line service is subject to state tariffs.</p>
	<p>Declaration of Conformity (Europe Only)</p> <p>This product is in conformity with the Council Directives:</p> <ul style="list-style-type: none"> • EMC Directive 89/336/EEC • Low voltage Directive 73/23/EEC
	<p>Entone products are designed and tested to meet IEC00065, the standard for the Safety of Information Technology Equipment. This is the international standard for these types of products to reduce the risk of product damage and of personal injury. The standard protects against the following hazards:</p> <ul style="list-style-type: none"> • Electric shock • Hazardous voltage levels • Fire — Overload, temperature, material flammability • Energy — Circuit with high energy or potential as burn hazards • Heat — Accessible part of the product at high temperatures • Radiation • Noise



Canada Certification Notice The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective operations and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The department does not guarantee the equipment will operate to the user's satisfaction. This equipment meets the applicable Industry Canada Terminal Equipment Technical Specification. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment. The Ringer Equivalence Number (REN) is 0.0. The Ringer Equivalence Number that is assigned to each piece of terminal equipment provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.0. Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local Telecommunication Company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations. Connection to a party line service is subject to state tariffs. Contact the state public utility commission, public service commission, or corporation commission for information. If your home has specially wired alarm equipment connected to the telephone line, ensure that the installation of this equipment does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer. If you experience trouble with this equipment, do not try to repair the equipment yourself. The equipment cannot be repaired in the field and must be returned to the manufacturer. Repairs to certified equipment should be coordinated by a representative, and designated by the supplier. Users should ensure, for their own protection, that the electrical ground connections of the power utility, telephone lines, and internal, metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION: Users should not attempt to make such connections themselves, but should contact the appropriate electrical inspection authority, or electrician, as appropriate.

Preface

TYPOGRAPHICAL CONVENTIONS

The following typographic conventions are used in this manual to provide visual clues as to the purpose or specific features of the IOM application.

- **Bold** text describes menu options and selections displayed on the screen.
- *Italics* emphasize statements and points to reference documentation.
- Ellipses (...) indicate truncated text for long examples depicting output that is too long to be shown in its entirety.
- **NOTE/TIP:** A note or a tip describes actions or conditions that can help you obtain optimum performance from IOM.
- **WARNING:** A caution or a warning describes conditions that can result in an error.
- **IMPORTANT:** An important note.

OVERVIEW OF THIS USER'S GUIDE

This User's Guide provides generic information about connecting Amulet to your audio and video equipments. Some of the topics covered in this guide are:

- Safety and regulatory information
- Setup
- Connecting Amulet to your audio and video equipment
- Connecting Amulet to the network
- Powering Amulet
- Using the Remote Controls
- Troubleshooting

For a full listing of all of the topics covered in this User's Guide, see the Table of Contents.

Chapter 1

1.1 Safety Precautions

Before installing Amulet, be sure to unplug Amulet, your TV and any other audio-video equipment you are using. This precaution will help to prevent danger of electrical shock and damage to Amulet and your equipment.

Be careful when moving your television to avoid accidental tipping or movements that might cause injury to you or those around you.

To ensure proper use of this product, please read this user manual carefully and retain for future reference. Should the unit require maintenance, contact your service provider.




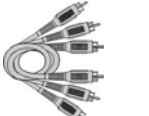
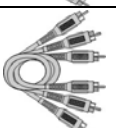
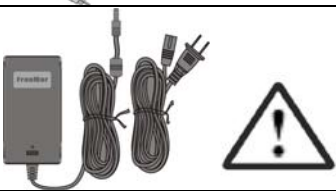

OPERATION AND CARE

- To prevent fire or shock hazard, do not expose this product to rain or moisture.
- To reduce the risk of electric shock, DO NOT remove cover or back. No user serviceable parts inside. Refer servicing to qualified personnel.
- To help prevent electric shock, plug the power cable into properly grounded sources. Use only properly grounded extension cords and adaptors, if they are needed.
- Make sure nothing is lying on any of the cables.
- Be sure the cables are located where they will not be stepped on or tripped over.
- Do not spill food or liquids onto the unit.
- Do not push any objects into the free slots. Doing so will damage the unit, can cause fire or electrical shock, and can short out interior components.
- Keep the equipment away from heat sources and radiators.
- Do not block cooling vents.
- Do not place the equipment in a closed-in wall unit.
- When you disconnect a cable, pull on its connector or on its strain relief loop, not on the cable itself. Some cables have a connector with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before disconnecting the cables.
- When you connect a cable, make sure both connectors are correctly oriented and aligned before connecting to avoid bending connector pins.

Chapter 2

2.1 Index to Parts and Controls

CONTENTS IN THE BOX

Item	Picture	Quantity
Amulet High Definition Television Receiver (Amulet)		1
RF Cable (with F type connectors) (6 feet)		1
RJ45 Ethernet Cable (10 feet)		1
3 Color RCA A/V Cable (6 feet)		1
3 Color Component Cable (6 feet)		1
Power Supply with 6 feet power cord (100-240V, output 12V/2.5A)		1
URC PLUS Remote Control (Universal Remote Control)		1
Battery (AA-size)		2

FRONT PANEL AND REAR PANEL

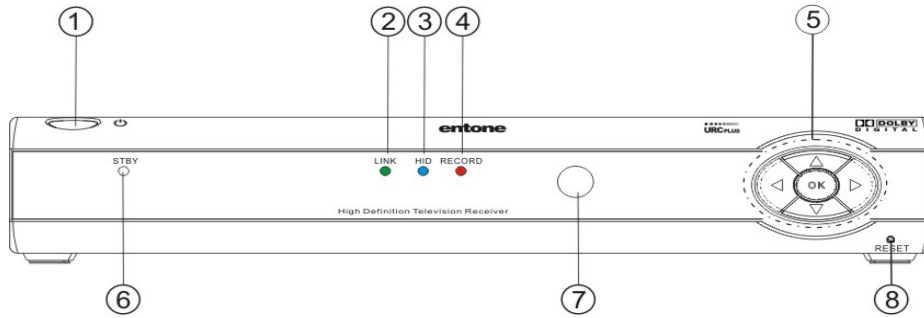


Figure 2-1 Amulet Front Panel

Part Name	Description
1. Standby Switch	Power up or put Amulet in standby mode
2. LINK Indicator	Green when Ethernet connection is active
3. HD Indicator	Blue when the output resolution is HD (720p or higher)
4. RECORD Indicator	Red when PVR (Personal Video Recording) is recording
5. Arrow Keys and OK Button	OK Button for triggering remote registration mode Other usage according to middleware
6. Standby / On Indicator	Orange in standby mode and starting Green when started
7. IR receiver	Remote control IR receiver
8. Reset Pin Hole	Restart Amulet

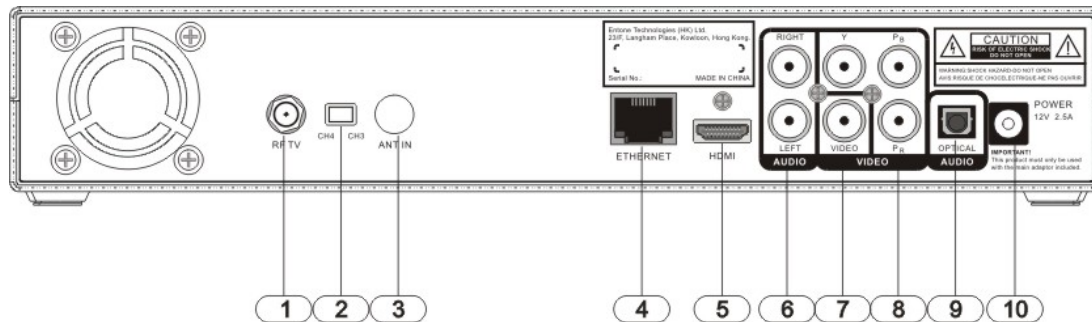
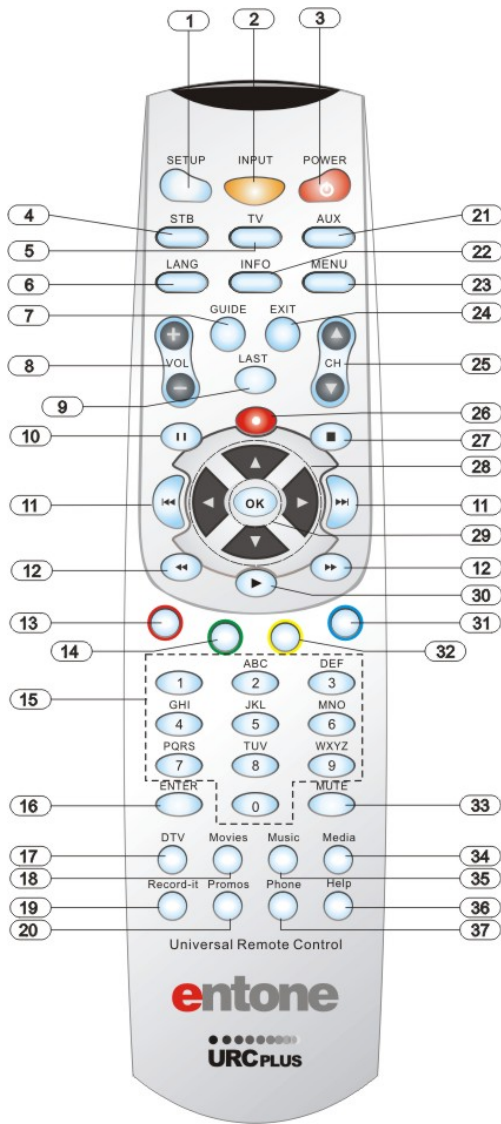


Figure 2-2 Amulet Rear Panel

Part Name	Description
1. RF TV	Type-F connector for RF TV output (factory set to channel 3 or channel 4)
2. CH4/CH3 Switch	Switch for toggling the RF TV default channel (either channel 3 or channel 4)
3. ANT IN	Type-F connector for ANTENNA IN to connect to cable wall outlet
4. ETHERNET	RJ45 plug for connecting to ADSL modem or network access equipment
5. HDMI	HDMI output
6. AUDIO LEFT / RIGHT	Composite audio output
7. VIDEO	Composite video output
8. Y Pb Pr	Component video output
9. DIGITAL AUDIO	S/PDIF digital audio output
10. DC INPUT	DC power jack

REMOTE CONTROL



Part Name	Description
1. SETUP	Special Key reserved for remote programming functions.
2. INPUT	Changes the current A/V input of the selected device. INPUT + MENU triggers STB User Menu.
3. POWER	Switches the power on/off for the currently selected device. Switches STB to power on/standby mode.
4. STB	Puts remote control in STB mode. Presses for more than 5s will trigger remote control registration mode.
5. TV	Selects to control TV
6. LANG	Toggles closed captioning on or off on decoder 1.
7. GUIDE	Displays electronic program guide.
8. VOL +/-	Raises or lowers volume of the currently selected device.
9. LAST	Changes channel to the most recently viewed channel.
10. PAUSE	Pause button for VOD or live channel.
11. PREVIOUS / NEXT CHAPTER	Goes to previous or next movie chapter for VOD.
12. FAST REVERSE / FORWARD	Starts fast reverse or fast forward for VOD or live channel.
13. RED	*
14. GREEN	*
15. NUMBER KEYS	Allows direct access to specific channels and menu items.
16. ENTER	*
17. DTV	Returns to live programming.
18. Movies	Displays the VOD menu.
19. Record-it	Displays the digital recorder menu.
20. Promos	Displays the promotion menu.
21. AUX	Selects to control AUX device.
22. INFO	Displays on-screen information about the current television program.
23. MENU	Displays the on-screen menu. INPUT + MENU triggers STB User Menu.
24. EXIT	Exits the current menu item.
25. CH UP / DOWN	Changes channel up or down.
26. RECORD	Records live channel.
27. STOP	Stop button for VOD or live channel.
28. ARROW KEYS	Navigates right, left, up, down in the on-screen guide.
29. OK	Executes the currently selected menu option.
30. PLAY	Play button for VOD or live channel.
31. BLUE	*
32. YELLOW	*
33. MUTE	Turns the volume of the currently selected device off.
34. Media	Displays the web menu.
35. Music	Displays available music channels.
36. Help	Displays the help menu.
37. Phone	Displays the Caller ID menu.

Figure 2-3 Remote Control

NOTE: *Please refer to your service operator or middleware vendor for detailed functions and usages.

Chapter 3

3.1 Amulet Introduction

ABOUT THE AMULET HIGH DEFINITION TELEVISION RECEIVER

Amulet HD Television Receiver is one of Entone's line of cost-effective and compact high-definition Customer Premise Equipment (CPE) solutions. Amulet is a multi-functional IPTV receiver with MPEG-4 (AVC/H.264) HD capabilities that integrates easily with popular home-networking and broadband services. It also features an optional integrated personal video recorder (PVR) and an optional ATSC/DVB-T tuner. These robust features enable service providers to increase their subscriber base and generate more revenue by offering enhanced services.

Amulet's internal hard drive option allows service providers to offer advanced services such as PVR without the hassles of installing new equipment. The optional PVR provides up to 400 hours of SD content or 200 hours of HD content. With Amulet, operators can now deliver more compelling services and an enhanced user experience to their subscribers.

With Amulet, subscribers can blend and connect a variety of traditional DSL broadband services (FTTP) with rich media services, and extend the capabilities of their existing IP home networks. Amulet supports a broad range of established home networking technologies such as HomePlug, HomePNA 3.0 and 802.11n to distribute video content throughout the home, including isolated locations. Amulet can also connect with a home computer for more content-delivery choices.

NOTE: HomePlug, HomePNA 3.0 and 802.11n are Amulet optional features.

Chapter 4

4.1 Connecting the TV

Amulet offers several options for connecting audio and video to popular TV and audio equipment.

You can connect Amulet to the TV using composite, component, HDMI connection. You may also connect the Amulet to the TV using coaxial cable connection.

If your TV supports 480p, 720p or 1080i pictures, use the HDMI or the component output jacks to connect to your TV. HDMI stands for High Definition Multimedia Interface. HDMI transfers digital audio and uncompressed digital video on a single cable. As a result, audio cables and video cables do not need to be connected separately. The HDMI output jack is designed to HDMI version 1.1 specifications.

HDMI and component video output support high definition video signal. They will provide the best quality video signal for HD ready TV sets.

The RCA A/V composite and RF TV output jacks only support 480i pictures.

The following table shows the video and audio output jacks and their supported video formats:

Table 4-1 Video Format

Video Output	Audio Output	Format
HDMI	No separate audio output required	1080i60, 720p60, 480p60, 480i60 (Selectable and default to 720p60. Please refer to section <i>Setting HDMI and Component Output Resolution</i>)
Component	RCA Audio	1080i60, 720p60, 480p60, 480i60 (Selectable and default to 720p60. Please refer to section <i>Setting HDMI and Component Output Resolution</i>)
RCA Composite	RCA Audio	480i60
RF TV	No separate audio output required	480i60

CONNECTING THE TV USING COAXIAL CABLE

1. Use the coaxial cable that comes packaged with Amulet to connect your TV's antenna input to the Amulet's "RF TV".
2. You can either select to use channel ID 3 or channel ID 4. You can change the channel ID by toggling the CH3/CH4 switch at the rear panel.
3. Tune your TV to channel 3 or channel 4 to view the output.

NOTE:

- In the "RF TV", CATV channel 3 or channel 4 is supported.
- You can connect your home TV cable source to "ANT IN", then the "RF TV" will be multiplexed with both the cable TV signal and the Amulet TV signal. The Amulet needs to connect to power main in order to make the multiplexing work.

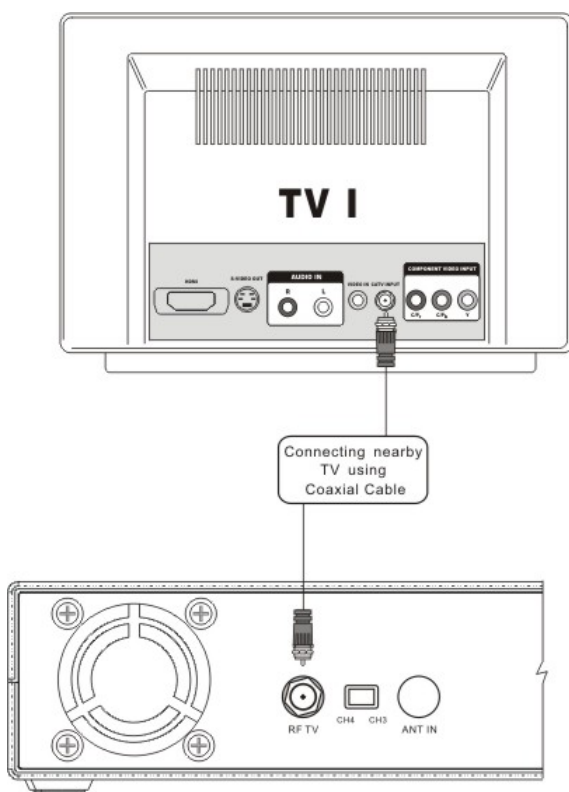


Figure 4-1 Connecting TV using Coaxial Cable

SETTING UP TV TO USE CATV

In order for the Amulet to feed video signal to TV using RF TV, your TV must be configured to receive signal from CATV rather than from the antenna.

Most TVs use either a physical switch located on the rear of the TV or with on-screen programming to configure to use CATV. Consult your TV owner's manual for instruction if required.

CONNECTING THE TV USING RCA COMPOSITE

1. Acquire the required cable. RCA cable comes packaged with the Amulet.
2. Connect the video and audio cables to the Amulet.
3. Connect the opposite end of the video and audio cables to the matching input in the TV.
4. Plug in your TV and turn on the power using your TV remote control. Use your TV remote control to select the respective video input that has connected to the Amulet. Consult your TV owner's manual for instructions as required.
5. Plug in your Amulet and turn on the power.
6. You should now see the output from the Amulet on your TV screen.

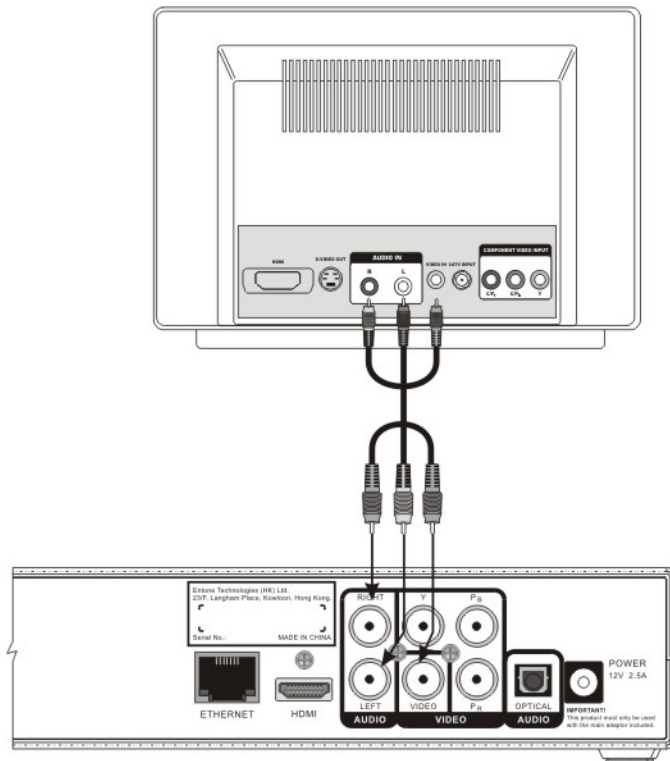


Figure 4-2 Connecting TV using RCA Composite Video/Audio

CONNECTING THE TV USING HDMI OR COMPONENT

1. Acquire the required cable. Component cable comes packaged with the Amulet. HDMI cable is not packaged with the Amulet. Before purchasing the cable, consult your TV owner's manual to confirm that your TV supports the video signal output that you plan to use.
2. Connect the video and audio cables to the Amulet. (HDMI does not require separate audio cable connection.)
3. Connect the opposite end of the video and audio cables to the matching input in the TV.
4. Plug in your TV and turn on the power using your TV remote control. Use your TV remote control to select the respective video input that has connected to the Amulet. Consult your TV owner's manual for instructions as required.
5. Plug in your Amulet and turn on the power.
6. You should now see the output from the Amulet on your TV screen.

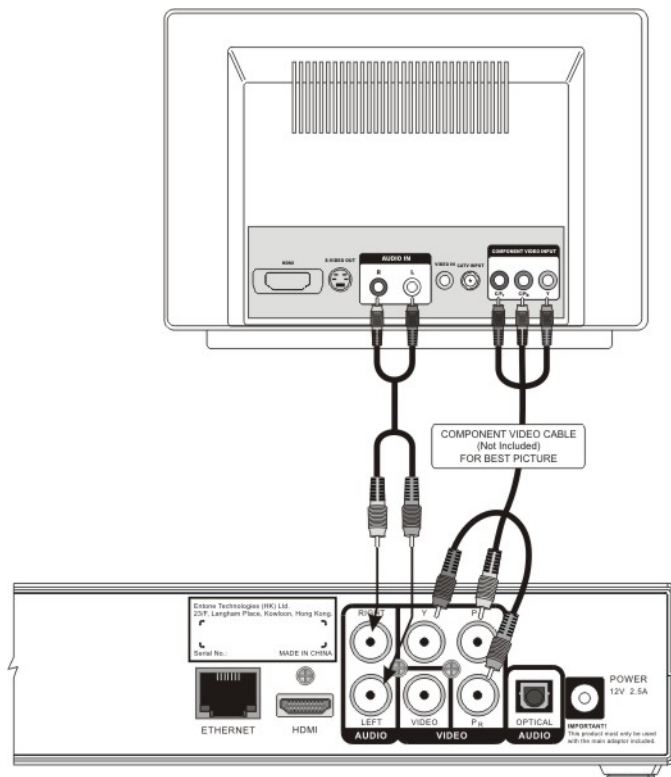


Figure 4-4 Connecting TV using Component and Composite Audio

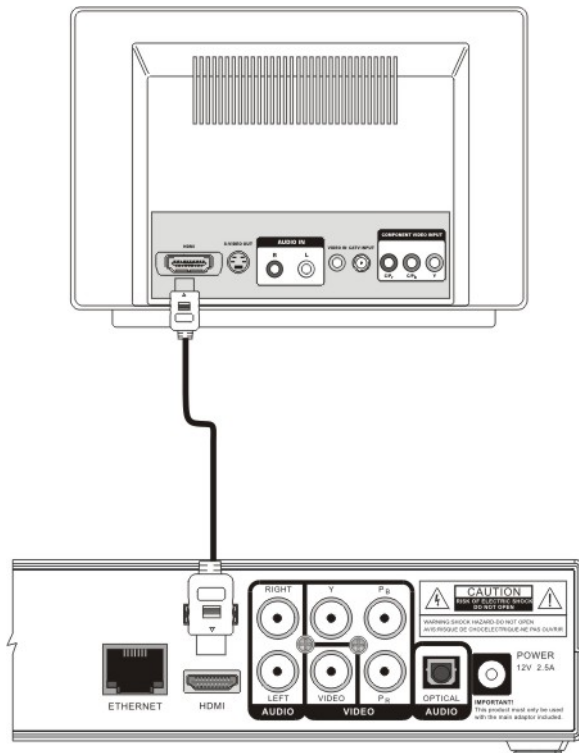


Figure 4-5 Connecting TV using HDMI

NOTE:

- HDMI is an evolving technology, so it is possible that some TVs may not operate properly with Amulet. Component output is the preferred way to connect to your HD TV.
- When the HDMI connection cannot be verified by your TV, disconnect the HDMI cable and then connect it again, or turn off the TV and then turn it on again.
- Analog DVI is not supported. If your TV supports digital DVI but not HDMI, you can use an HDMI to DVI convector cable or adaptor to connect the Amulet HDMI to the TV DVI. In this case, you need to connect the audio cable separately.
- Be sure to use an HDMI cable with the HDMI logo.
- If your TV does not support multi-channel audio, the Amulet will output PCM audio only.
- Please refer to the next section to set the Component and HDMI output resolution.

SETTING HDMI AND COMPONENT OUTPUT RESOLUTION

You can select 1080i, 720p, 480p or 480i on the HDMI and Component output. When you set the output, both HDMI and Component outputs are set to the selected resolution, the "HD" indicator in front panel will glow in blue if the resolution is set to 720p or higher. The RCA Composite and RF outputs are always set to 480i and will not be affected by the HDMI and Component resolution setting. The resolution can be set in the User Menu or the middleware. Please refer to the section "User Menu" on changing settings in the User Menu.

NOTE: If your TV does not display the video or error message is displayed after you have selected a new resolution, your TV may not support the selected resolution. Refer to your TV owner's manual for verification. Repeat the above procedures again to find a resolution supported by your TV.

SETTING CHANNEL ID

In "RF TV", channel 3/4 is used by default. You can change the channel ID by toggling the CH3/CH4 switch at the rear panel.

NOTE: The new channel ID will take effect immediately after the switch is toggled.

Chapter 5

5.1 Connecting Audio System

Your Amulet supports AC-3 (Dolby Digital 5.1 channel). To enjoy multi-channel surround-sound, the content source must carry multi-channel AC-3 signal. Please refer to your service provider for availability of AC-3 5.1 programs.

You can enjoy multi-channel surround-sound such as 5.1 channel by connecting the Amulet to an amplifier compatible with Dolby Digital. You can connect to your amplifier using the digital optical audio output.

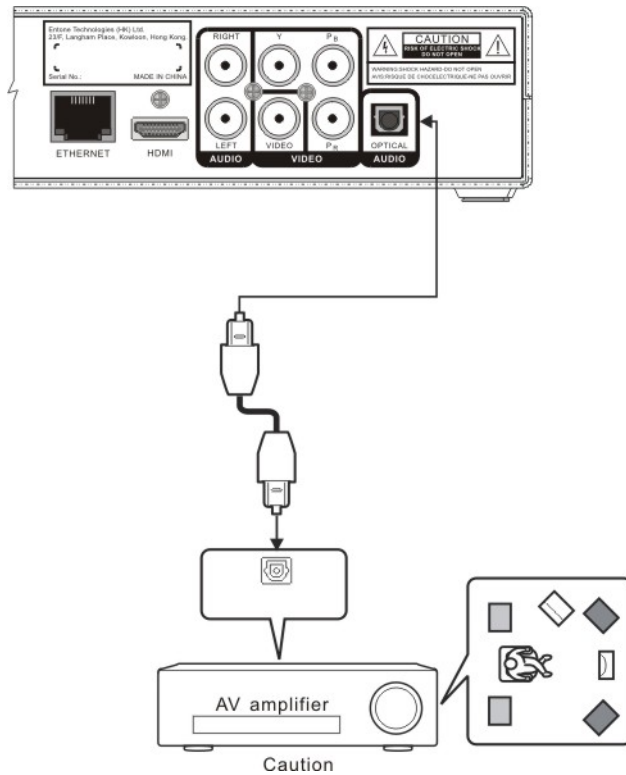


Figure 5-1 Connecting Amulet to Audio System

Consult your audio system user guide for connection. Take necessary precautions when working with electric equipment. Remove the devices from wall power and be sure to use caution when moving equipment to prevent injury.

If your connected TV or A/V equipment does not support AC-3, you can disable AC-3.

Enabling or disabling AC-3 is controlled by the IPTV middleware. For details of enabling and disabling AC-3, please refer to usage instruction provided by your service operator.

Please refer to the following table for details of audio output used when AC-3 is enabled or disabled.

Table 5-1 Audio Format

	Audio Track	HDMI	Optical Audio Output	RCA Audio Output	RF TV
AC-3 Enable	With AC-3 Track	AC-3 track selected and output in AC-3	AC-3 track selected and Output in AC-3	AC-3 track selected and down-mixed to analog audio	AC-3 track selected and down-mixed to analog audio
AC-3 Enable	Normal Audio Track Only	PCM	PCM	Analog audio	Analog audio
AC-3 Disable	With Normal Audio Track	Normal audio track selected and output in PCM	Normal audio track selected and output in PCM	Normal audio track selected and output in Analog audio	Normal audio track selected and output in Analog audio
AC-3 Disable	AC-3 Track Only	Down-mixed PCM	Down-mixed PCM	Down-mixed analog audio	Down-mixed analog audio

WARNING: When connecting via the digital optical audio output to a TV or A/V decoder that does not have Dolby Digital decoding capability, be sure to set AC-3 off to avoid damage to equipment.

Chapter 6

6.1 Powering-Up Amulet

Follow these steps to power up the Amulet:

1. Follow your TV/Network service provider's instruction to connect the Amulet to your network modem or network access unit using the Ethernet cable comes packaged with the Amulet.

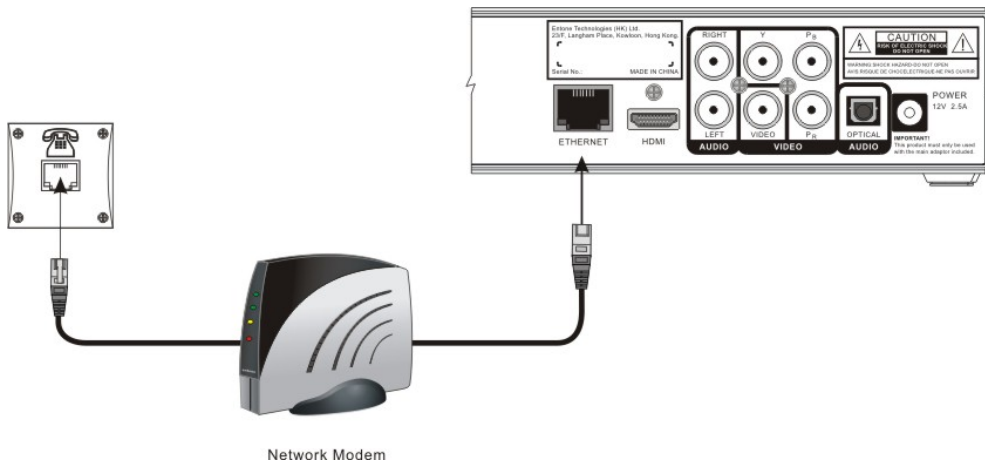


Figure 6-1 Connecting Amulet

2. Plug the socket end of the AC/DC adapter into the wall socket and the DC jack into the power connector on the Amulet.
3. The Amulet front panel power indicator will illuminate in orange color.
4. The "LINK" LED indicator will illuminate in green color

NOTE: The "HD" LED indicator will illuminate only if the output resolution is 720p or higher. The "RECORD" LED indicator will illuminate only if the (PVR) is enabled and recording assets to the hard disk drive. (Please refer to your middleware or telecom operator about the PVR functionality)

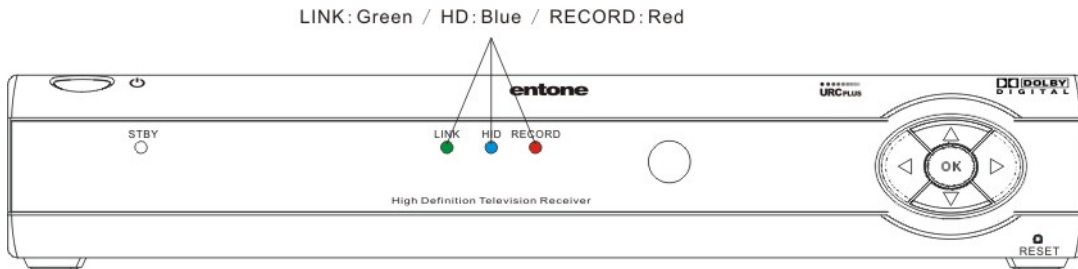


Figure 6-2 Amulet Starting

5. Within 60 seconds splash screen will appear on the TV.



Figure 6-3 Amulet Boot-up Splash Screen

6. The total boot-up time may vary depending on the middleware application and the service provider environment.

ATTENTION: If your Amulet is equipped with a hard drive, disk formatting may be required when the Amulet boots up for the first time. Message will be showing in the splash screen when the disk is being formatted. Do not power off the box during the disk formatting.



Figure 6-4 Amulet Formatting Hard Drive – Do not Power Off

Chapter 7

7.1 Remote Controls

LOADING BATTERIES

The remote control comes with AA-size batteries, which needs to be installed when you first receive your system. When you replace old batteries, you should replace all of the batteries. Use batteries of the same kind, for example alkaline or carbon zinc, and do not mix batteries of different kinds. Alkaline batteries last longer than carbon zinc.

WARNING: Mixing old and new batteries or different types of batteries poses a fire hazard.

To load batteries to remote control:

1. Press down on the battery cover's top latch and slide the cover off.
2. If you are changing out batteries, take out all of the old batteries.
3. Put the new batteries in. Make sure you match the plus ("+") ends with the plus markings on the battery case.
4. Slide the cover back into place.

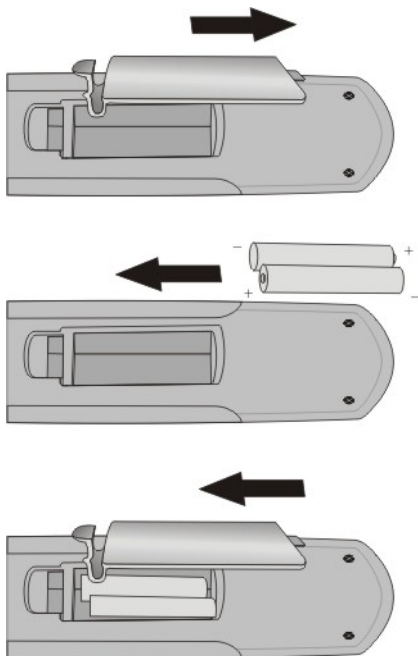


Figure 7-1 Loading Batteries to Remote Control

CONTROLLING THE AMULET

Amulet uses InfraRed (IR) to receive remote control signals. IR signals travel only short distances (40 feet or less), and cannot go through walls or other solid objects. You must point the remote control to the Amulet, with no objects blocking the line of sight.

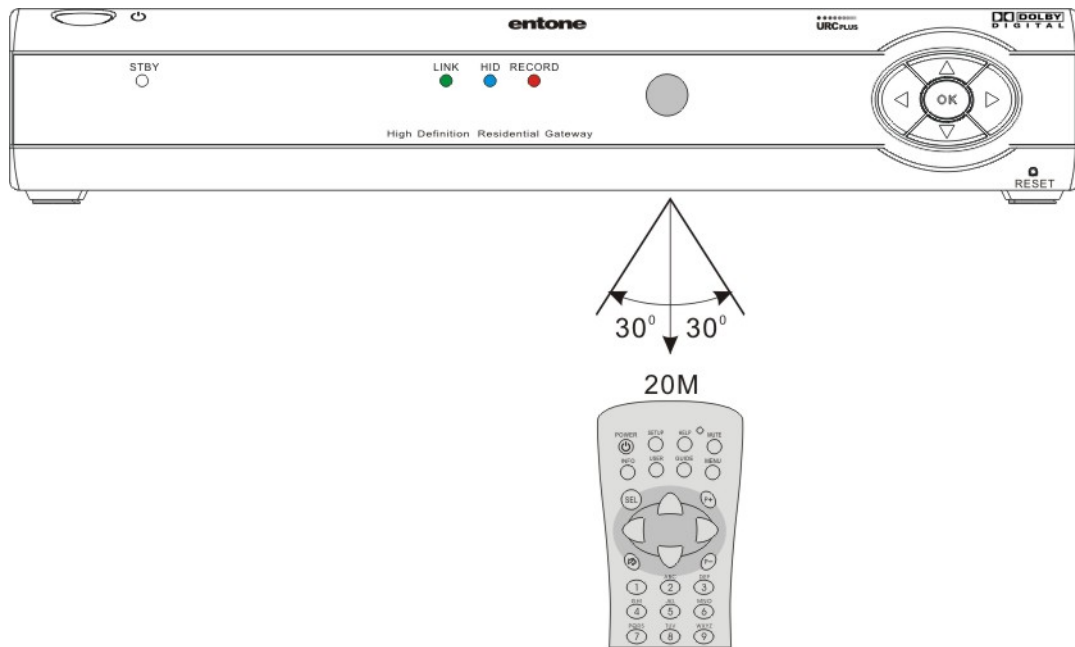


Figure 7-2 IR Reception Range

ATTENTION: Amulet must use new URC PLUS remote controls. Old remote controls without the “URC PLUS” logo do not work with Amulet. If the URC PLUS remote control shipped with Amulet has a silver back; it is an iURC remote (IR URC) which sends IR signals by default, and you can skip the following steps to register the remote in IR mode.

URC PLUS supports both RF and IR signals. You need to follow below procedures to program the URC PLUS to IR mode before controlling Amulet.

1. On the URC PLUS, press and hold the "STB" button for approx. 5 seconds. The "STB" button backlight will illuminate. Now the URC PLUS is in registration mode.

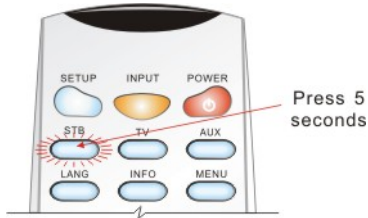


Figure 7-3 URC PLUS in Remote Registration Mode – Step 1 (for Amulet using IR mode)

2. On the URC PLUS, press "STB" once again. Both the "STB" and "AUX" button backlight will illuminate.

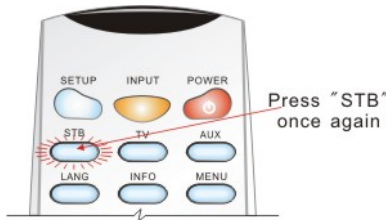


Figure 7-4 URC PLUS in Remote Registration Mode – Step 2 (for Amulet using IR mode)

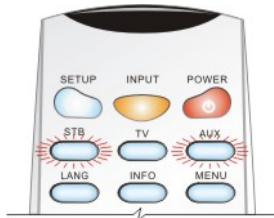


Figure 7-5 URC PLUS in Remote Registration Mode – Step 3 (for Amulet using IR mode)

3. Press "0" to set URC PLUS to IR mode only. The URC PLUS will not send any RF signal.

The "STB" button backlight on the URC PLUS will blink twice to indicate that the setting was successful.

Pressing a key other than "0" or a button is not pressed within 10 seconds, the "STB" backlight will extinguish and the URC PLUS registration process will be terminated.

CONTROLLING YOUR TELEVISION AND OTHER A/V DEVICES

The Amulet remote controls can also be used to control TVs and other A/V devices such as DVD players and recorders. The remote controls use infrared (IR) light signals to control other devices that the remote is programmed to control. IR signals travel only short distances (40 feet or less), and cannot go through walls or other solid objects. You must point the remote control directly at these devices, with no objects blocking the line of sight.

For details of how to program the Amulet remote controls and the supported devices, please refer to the *Amulet Quick Reference Guide* or *URC PLUS User's Guide*.

Chapter 8

8.1 Closed Captioning

The Amulet supports closed captioning. To inquire closed captioning support of TV programs, please refer to your TV service provider.

Closed captioning can be set to be sent to the STB or the TV. Use the on-screen User Menu for the closed captioning setting. Refer to section *User Menu* for setup details. When closed captioning is set to send to STB, closed captioning is available in both digital and analogue outputs including HDMI. When closed captioning is set to send to TV, it is only available in analogue outputs such as Composite and RF TV, and you need to use the TV remote control to control the closed captioning.

NOTE: Captioning on “RF TV”, HDMI, Component, Composite outputs is toggled on or off at the same time.

NOTE: Control of captioning may vary for different service providers. For detailed usage of captioning, please refer to the service provider.


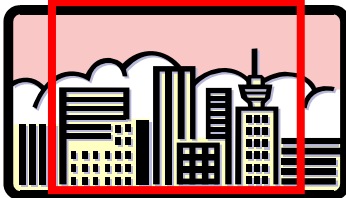
Chapter 9

9.1 Aspect Ratio


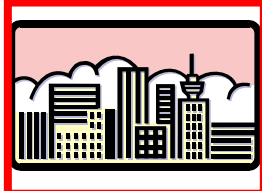
Amulet supports display of both standard definition content which is traditionally filmed in 4:3 aspect ratio and high definition content filmed in 16:9 aspect ratio to both 4:3 or 16:9 TV.

Setting of aspect ratio is provided by middleware. Please refer to your service provider for options available and detailed operation. Typically, aspect ratio is provided in following 3 modes:


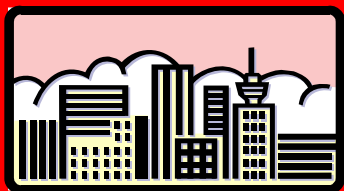
- 1) Mode 4:3 - You choose this mode when your TV is a traditional 4:3 TV.

	4:3 Content	16:9 Content
4:3 TV	Normal 	Left and Right are cropped 

- 2) Mode 4:3 Letter Box (4:3 LB) - You choose this mode when your TV is a traditional 4:3 TV.

	4:3 Content	16:9 Content
4:3 TV	Normal 	Letter Box with black bar on top and bottom 

- 3) Mode 16:9 - You choose this mode when your TV is a 16:9 TV.

	4:3 Content	16:9 Content
16:9 TV	Panorama – Stretched 	Normal 

Chapter 10

10.1 User Menu

The Amulet User Menu is an on-screen setup menu to set up your Amulet features. You need to connect the TV properly before using the User Menu.

Table 10-1 User Menu Features

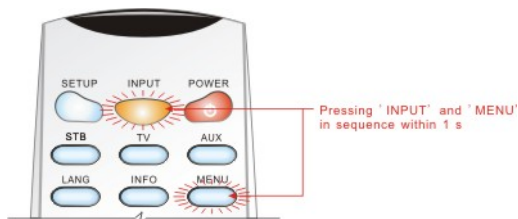
	Available Options
Resolution	<ul style="list-style-type: none">▪ 1080i▪ 720p▪ 480p▪ 480i
Aspect Ratio	<ul style="list-style-type: none">▪ 16:9 Pillar, Wide, Zoom, Panorama▪ 4:3 Corp, letterbox, Squeeze, LetterBox (14:9)
Closed Captioning	<ul style="list-style-type: none">▪ Off▪ On STB▪ On TV
Subtitle	For European box only
Preferred Subtitle Language	For European box only
Preferred Audio Language	<ul style="list-style-type: none">▪ Default, English, Spanish, German, French, Norwegian, Swedish, Korean, Chinese, Italian
AC3	<ul style="list-style-type: none">▪ Enable▪ Disable
URC IR Key Code	<ul style="list-style-type: none">▪ MAGNAVOX 10224-B▪ CENTURION 00092-B▪ Toshiba TSR-202 (Satellite Receiver)▪ Hitachi HDS-100R (Satellite/DTRV Receiver)
Format HardDisk	<ul style="list-style-type: none">▪ GO (For box with hard disk installed. With confirmation before reboot and reformatting hard disk.)

NOTE: The features available in User Menu may vary in different middleware. Some of the features can also be set up through the user menu of the middleware.

USING USER MENU

To start the User Menu:

1. Press "INPUT" and then "MENU" in sequence within 1 second.



Remote control

Figure 10-1 Triggering the User Menu

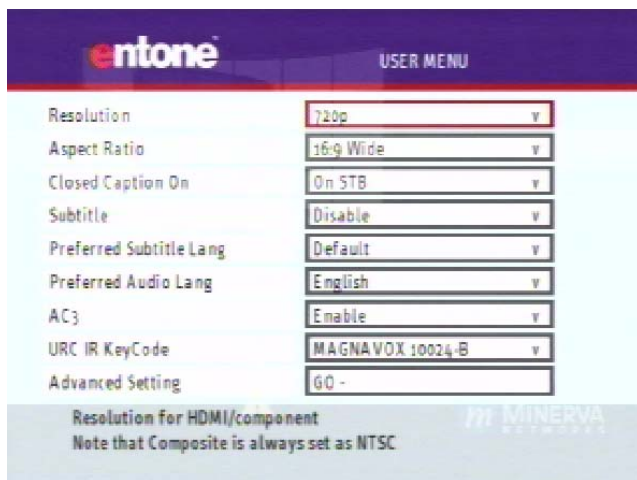


Figure 10-2 Amulet User Menu

To set up a feature:

1. Use remote control "UP" and "DOWN" arrow to select the feature you want to set. The selected feature will be highlighted by a red rectangle.
2. Press "OK", the feature will be highlighted in navy blue color.



Figure 10-3 User Menu - Feature in Focus

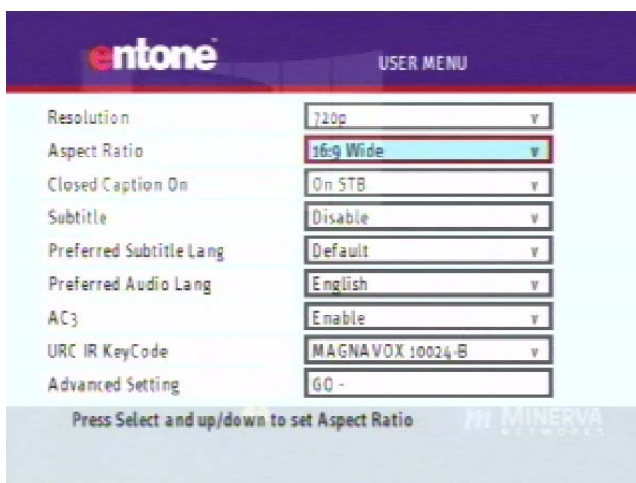


Figure 10-4 User Menu - Feature selected for choice selection

3. Use remote control “UP” and “DOWN” arrow to loop through available choices.
4. Press “OK’ again when your choice is selected.
5. If you have other features to set up, repeat the above procedures.

To save your setup or exit:

1. If you have made any setup and want to save the settings, select "SUBMIT" in the User Menu. You will be notified the saving of your settings.

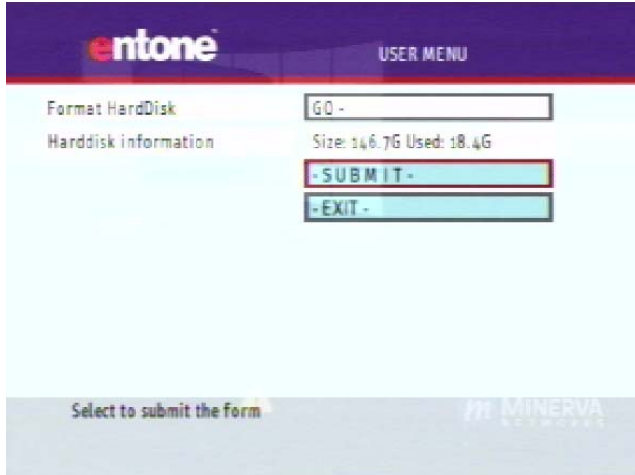


Figure 10-5 User Menu - SUBMIT highlighted for saving changes

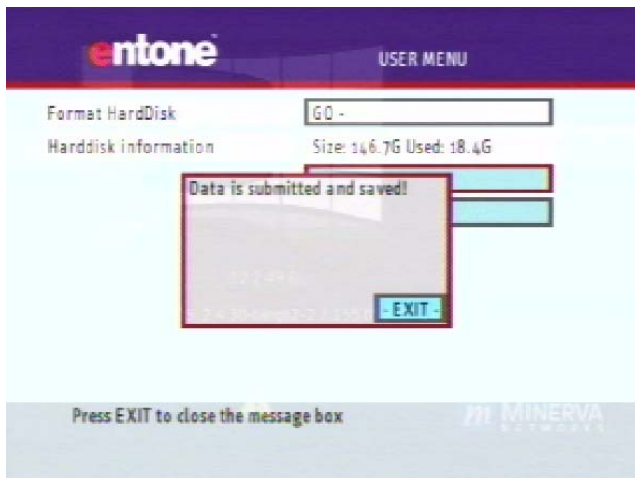


Figure 10-6 User Menu - Changes successfully saved

2. Select "EXIT" to quit the User Menu.

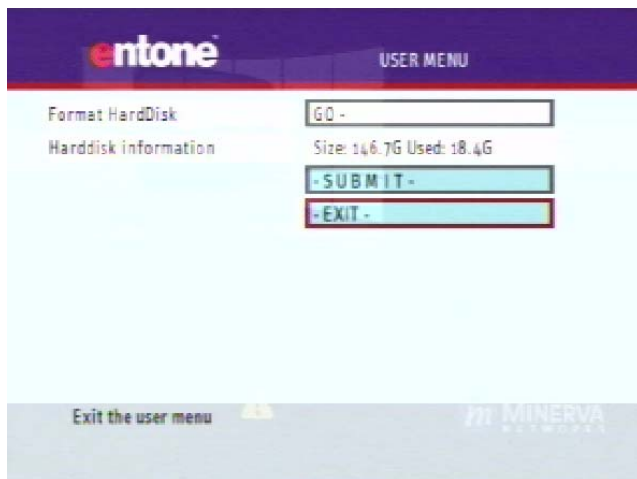


Figure 10-7 User Menu – Exit User Menu

ATTENTION: If you exit the User Menu without doing the "SUBMIT", your changes will be lost and will not take effect.

NOTE: If you want to give up the changes, simply select "EXIT".

SETTING HDMI AND COMPONENT OUTPUT RESOLUTION

You can use User Menu to set the HDMI and Component output resolution. To use User Menu to set the output resolution, follow procedures in section *Using User Menu*, to make the changes.

NOTE: Setting of HDMI and component output resolution may be disabled in User Menu. You may need to use the middleware user menu to set the resolution. Please refer to your service provider for details.

SETTING CLOSED CAPTIONING

You can use User Menu to control closed captioning.

To use User Menu to set closed captioning, follow procedures in section *Using User Menu*, to make the changes.

Please refer to section *Closed Captioning* for details of controlling closed captioning.

NOTE: Setting of closed captioning may be disabled in User Menu. You may need to use the middleware user menu to control closed captioning. Please refer to your service provider for details.

SETTING URC IR KEYCODE

Amulet is equipped with an IR receiver at the front panel. If you have TiVo or Sling box, you can use the IR blaster provided by TiVo or Sling to control Amulet for actions such as channel switching for recording or remote network viewing.

Amulet has implemented the following 4 IR keycodes. You can configure TiVo or Sling, and your Amulet to use the same keycode in order to complete the setup.

- MAGNAVOX 10224-B
- CENTURION 00092-B
- Toshiba TSR-202 (Satellite Receiver)
- Hitachi HDS-100R (Satellite/DTRV Receiver)

Follow procedures in section *Using User Menu*, to make your IR keycode selection in Amulet.

Please refer to the TiVo or Sling user's manual for configuration and setup of the TiVo and Sling box keycode.

Chapter 11

11.1 Specifications

Main components	
Decoder	Single decoder
Main CPU	300MHz MIPS
Memory	256MB SDRAM, 64MB Flash
Software	Real-time, multi-threaded embedded OS, Java Virtual Machine with MHP APIs, HTML 4 compliant browser with JavaScript
Universal Remote Control	IR carrier frequency is 36KHz using RC6 protocol
Graphics	
Color	True-color OSD support (up to 1920x1080 pixels) Programmable OSD scaler, flicker filter Alpha blending over video (8-bit) Picture in graphics with scaling 2-D graphic accelerator
Audio and video	
Video Input Formats	MPEG-1, MPEG-2 MP@HL MPEG-4.2 ASP@L5 MPEG-4.10 BP@L3, MP@L4.0 and HP@L4.0.
Video Output Formats	NTSC composite and analog YpbPr component with optional Macrovision v7.1 L1 protection SDTV or HDTV resolution (1080i60, 720p60, 480p60, 480i60)
Audio Input Formats	MPEG-1 Layers I & II mono, stereo, joint stereo and dual channel MPEG-2 5.1; Dolby digital 5.1 channel AC-3 6-channel
Audio Output Formats	Dolby Digital 5.1 channel AC-3 6-channel PCM and S/PDIF (IEC-1937/IEC-958) Dolby Digital or MPEG-2 5.1 down mixed to Dolby Prologic or 2-channel PCM Analog stereo
Closed Captioning	CEA-608, EIA-708 Captioning format – ATSC, SCTE and Divicom
Connectors	1 x RF TV type-F connector for 1 modulated channel 1 x RCA composite video output 1 x RCA composite audio output 1 x YpbPr Component output 1 x HDMI (HDMI 1.1) 1 x S/PDIF digital optical audio TOSLINK output
Tuner	Optional ATSC/DVB-T tuner
Network interfaces	
Ethernet	Ethernet (10/100Base-T auto-sensing)
Home networking	Optional HPNA 3.0 (Telephone wire / Coaxial Cable) Optional 802.11n wireless
Physical and mechanical	
Dimensions	280 x 50 x 270mm (WxHxD)
Weight	1.3 kg

Operating voltage	100-240VAC RMS
Operating current	1.35A RMS, max.
Operating frequency	Range ~47-63Hz
Output voltage	12V/2.5A
Operating temperature	10° to 35° C (50° to 95° F)
Relative	Humidity non-condensing
Regulatory compliance	UL, CE, IEC65, FCC part 15 (pending)
Security controls	
Anti-Taping	Macrovision (optional)
Parental Controls	Provided through middleware partner integration

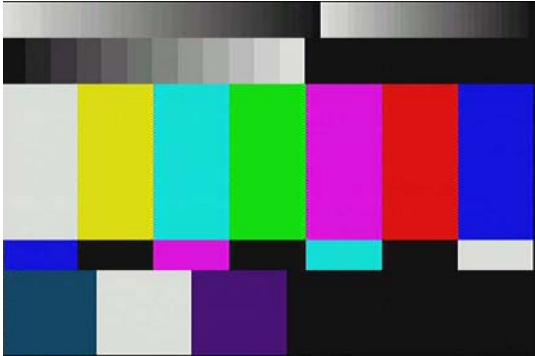
NOTE: Above specification for reference only.

Chapter 12

12.1 Troubleshooting the Amulet

This section describes some of the most common problems that might be encountered when installing Amulet, and the solutions to those problems.

Symptom	Remedy	Reference
Remote controls do not work	<ul style="list-style-type: none"> • Check batteries are correctly loaded. • Check that new URC PLUS remote control is used. • Check remote control is programmed to IR mode. In case of doubt, program the remote control again. 	<i>Section 7 – Remote Controls</i>
Remote controls cannot control the programmed devices	<ul style="list-style-type: none"> • Device manufacturers may change their device codes or no device code can be found in the Universal Remote Control User's Guide. Try searching the device code according to the procedures listed in the Universal Remote Control User's Guide. 	<i>Amulet Quick Reference Guide URC PLUS User's Guide</i>
Standby indicator at the front panel not lit	<p>The power supply to the box is probably not working:</p> <ul style="list-style-type: none"> • Check that the AC/DC adapter is connected properly to the DC INPUT connector. • Check that there is power from the power source. • Make sure you have pressed the Standby button at the top of the box and that the Standby / On light is green. 	<i>Section 6 – Powering up Amulet</i>
Standby indicator on the front panel stays orange for more than 60 seconds	<ul style="list-style-type: none"> • Check that the ADSL cable is properly connected between the ADSL connector and the ADSL modem. The ADSL Link indicator should be orange and steady. • Check that the ADSL modem is properly connected to the telephone socket. 	<i>Section 6 – Powering up Amulet</i>
Standby indicator turns green; no picture on the TV	<ul style="list-style-type: none"> • Check that the video output connector of the Amulet is properly connected to the input connector of the primary TV. • "RF TV" (coaxial connection): the TV set should be set to channel 10. • Composite, Component or HDMI connection: the TV set should be set to the correct input mode for the signal. • Component or HDMI connection: the resolution selected in Amulet is supported by your TV. 	<i>Section 4 – Connecting the TV</i>

	<ul style="list-style-type: none"> Restart the Amulet by switching off and on the power supply. Press and hold the Down arrow key on the front panel for until the diagnostic screen is shown and beep sound is heard.  <p>If the box is booting up properly and the video/audio connection is fine, this color bar screen and sound should be displayed and heard on all outputs (RF/HDMI/RCA Composite/Component)</p>	
No sound	<ul style="list-style-type: none"> Check that the audio cable is connected to the correct input in your device. Is the volume of the device turned down to the minimum level? If HDMI or component is used. Try disabling AC-3. If HDMI is used, check the resolution and try to use the composite audio output. 	<i>Section 5 – Connecting to Audio System</i>
Multi-channel sound not working	<ul style="list-style-type: none"> Check with service provider that programs contain multi-channel AC-3 signal. Check that AC-3 is enabled in the Amulet. Check your TV or A/V equipment for AC-3 multi-channel setup. 	<i>Section 5 – Connecting to Audio System</i>
No sound, poor sound or popping noise on HDMI	<ul style="list-style-type: none"> HDMI is an evolving technology, so it is possible that some TVs may not operate properly with Amulet. In case of problem, use component video output and composite audio output to connect your primary TV. 	<i>Section 4 – Connecting the TV</i>