

AvediaPlayer



Exterity AvediaPlayer r92xx
Series Receiver V3.2.1

Administrator's Guide

Notices

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Products Described by This Guide

AvediaPlayer r9200

AvediaPlayer r9210

AvediaPlayer r9220

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Safety Notices

Before installing and operating these products, please read the safety information contained in the *Exterity AvediaPlayer r92xx series v3.2.1 Getting Started Guide*.

Table of Contents

Safety Notices	6
Important Safety Instructions.....	6
USA and Canada	6
EU and Others.....	7
Safety Information	7
Glossary	8
About This Guide	9
1 Management Interfaces	11
Web Management Interface	11
Admin Interface	13
AvediaServer Director.....	14
2 Basic Configuration.....	15
Introduction	15
Setting Receiver Properties	17
Specifying Parameters for the Connected Screen	18
Configuring the Splash Screen.....	19
Setting the Audio Level and Preferred Language	20
Enabling Subtitles and Closed Captions	21
Displaying Teletext.....	22
Specifying the Time Zone.....	22
Specifying Front Panel LED Behaviour.....	23
Configuring Channel Learning.....	24
Discovering TV Channels.....	25
Enabling Source Specific Multicast	25
Selecting SAP Channel Announcements.....	26
Specifying Group Membership	26
Selecting an XML Channel List	27
Disabling Channel Choice	28
Static Channels.....	28
VLAN Configuration (AvediaPlayer r9220 only).....	29
3 Selecting Channels	30
Selecting Channels with the Web Management Interface	30
Selecting a Channel from the List	31
Handling Encrypted Content.....	31
SecureMedia Configuration	32
4 Authentication.....	33
Configuring Authentication	33
Configuring the SNMP Agent	34
Configuring an SNMP Trap Manager.....	34

5 Using Display Modes	35
Display Modes	35
Setting the Startup Mode.....	36
Setting the Current Mode	36
Displaying a Web Page.....	36
Playing a Playlist	37
Simultaneously Specifying Mode and Content.....	37
6 Configuring TV Control	39
Using the Serial Control Interface	39
Using the Consumer Electronics Control (CEC) Interface	41
7 Configuring Remote Control Handsets	42
Exterity Remote Control Handsets.....	43
Configuring General Settings	43
Enabling/Disabling Remote Control Handset Operation	43
Uploading a Customised Remote Control Handset File.....	43
Enabling Remote AV Device Control	44
Specifying Button Functions	45
8 Using Remote Controls	46
Viewing Channels.....	46
Standby.....	47
Selecting Language for On-screen Menus and Audio Track	47
Enabling Subtitles/Captions.....	49
Viewing Decoded Teletext	49
Using the Web Browser.....	50
9 Using the Browser	51
Configuring Web Services.....	51
Specifying a Homepage.....	51
Specifying an EPG	52
Configuring Proxy Servers	53
Configuring an SNMP Trap Manager.....	53
10 Using Secure Mode	54
Overview	54
Entering/Exiting Secure Mode.....	55
Using the Admin Interface	55
Using the Terminal Command Interface (TCI).....	55
Passwords.....	55
Changing the Password.....	56
Normal Mode	56
Secure Mode	56
Exporting/Importing Configuration.....	57
Exporting Configuration	57
Importing Configuration	57
Resetting the Receiver to Factory Defaults.....	57
Enabling/Disabling Parts of Secure Mode.....	58
Enabling/Disabling the Factory Defaults Reset Button	58
Enabling/Disabling USB Storage Access	58
Enabling/Disabling the Web Admin Interface	58

11 Using External Storage Devices	59
Adding a USB Storage Device	59
Configuring a USB Mount Point	59
Checking Storage Device Status	59
Using a USB Storage Device	60
Pre-loading the Storage Device	60
Downloading a Playlist from an External Server	60
Downloading a Playlist using FTP	61
Deleting a Playlist from a Storage Device	61
Adding an NFS Location	61
12 Channel Redundancy and Failover	63
Channel Redundancy	63
Failover	63
Configuring Failover	63
Troubleshooting Failover	64
13 Extended AvediaPlayer Features	65
Adding Static Channels	65
Customising the Client User Interface	65
Adding More Client Interface Languages and Fonts	66
Receiver Development Kit (RDK)	66
14 Maintenance	67
Specifying the TFTP Server Address	67
Specifying the SNMP Trap Manager IP Address	67
Specifying the Time Server Address	67
Restarting the Receiver	68
Upgrading Firmware	68
Restoring Factory Defaults	69
Exporting/Importing Configuration Settings	69
Logging	70
Local Logging	71
Remote Logging	71
15 Troubleshooting	72
Appendix A – Playlist Format	73
Appendix B – XML Channel List Format	74
Appendix C – Serial Admin Interface Connection	75
Cabling	75
Adaptor Wiring	75
Opening a Session	76
Appendix D – Serial TV Interface Connection	77
Appendix E – Serial Pass-through	78
Appendix F – Support and Contact Information	79

Safety Notices

Before installing and operating these products, please read the safety information in this manual.

Important Safety Instructions

There are no instructions specifically for service personnel in this document. There are no user serviceable parts inside any Exterity product. To prevent electric shock or fire hazard, do not remove cover. Refer service to qualified service personnel.

This chapter contains important safety information. If you are unsure about any of the information in the section, please contact Exterity.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

USA and Canada

- 1 Read these instructions.
- 2 Keep these instructions.
- 3 Heed all warnings.
- 4 Follow all instructions.
- 5 Do not use this apparatus near water.
- 6 Clean only with dry cloth.
- 7 Do not block any ventilation openings. Install in accordance with the instructions contained in this manual.
- 8 Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9 Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10 Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11 Only use attachments/accessories specified by the manufacturer.
- 12 Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



- 13 Unplug this apparatus during lightning storms or when unused for long periods of time.

- 14 Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- 15 Do not expose this apparatus to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the apparatus.
- 16 To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from the AC receptacle.
- 17 The mains plug of the power supply cord shall remain readily operable.



To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

EU and Others

Do not proceed beyond a **WARNING!** notice until you have understood the hazardous conditions and have taken appropriate steps.

Safety Information

Warning: There are no user serviceable parts inside any Exterity product. To prevent electric shock or fire hazard, do not remove cover. Refer service to qualified service personnel.

For 230/240 volt operation, be sure to use a harmonised grounded 3 conductor cord, rated 6 Amp minimum. Use a suitable cord for connection to the equipment and terminating in an IEC.

This equipment relies upon a safety earth for operation, ensure that you always use a power cord with appropriate earth and that the inlet to which is inserted also has the appropriate earth. If in any doubt about the earth provision in your building consult a qualified electrician.

Use only the dedicated power supply or cord supplied for your device.

The Exterity products use ventilation holes for cooling. None of the ventilation holes should be blocked. Keep all materials at least 5cm away from all the ventilation holes.

Do not expose the product to any rain or moisture.

Do not use the product near a naked flame e.g. a candle.

The operating conditions of the product should be 0°C-40°C with a Relative Humidity of 5 – 95%. The product should not be operated outside of these conditions.

There are no user-serviceable parts inside these products. Any servicing, adjustment, maintenance, or repair must only be performed by service-trained personnel.

Glossary

The following terms and definitions are used in this document:

AV	Audio/Video
CEC	Consumer Electronics Control
DHCP	Dynamic Host Configuration Protocol, a protocol used to allocate IP addresses to devices on an IP network
DNS	Domain Name Server
EDID	Extended Display Identification Data
EIT	Found in a Transport Stream, the Event Information Table provides information to enable construction of Program Guides
EPG	Electronic Program Guide
IGMP	Internet Group Management Protocol, a protocol used to manage multicast traffic on an IP network
NFS	Network File System
NTP	Network Time Protocol, used for synchronizing the clocks of computer systems
POE	Power Over Ethernet
RTP	Real-time Transport Protocol, a protocol used to carry real time data on an IP network
RTSP	Real Time Streaming Protocol
SAP	Session Announcement Protocol, a protocol used to advertise the presence of multicast sessions on an IP network
SNMP	Simple Network Administration Protocol
SSM	Source Specific Multicast
Syslog	A protocol for forwarding log message in an IP network

About This Guide

This manual explains how to set up, use and manage Exterity AvediaPlayer r92xx Series Receivers.

Exterity AvediaPlayer Receivers make TV and video channels available to HD digital TVs and AV displays using a standard IP network. AvediaPlayer Receivers also integrate effortlessly with any Exterity IPTV solution and industry standard IPTV equipment.

AvediaPlayer Documentation

This manual – the *AvediaPlayer Receiver Administrator's Guide* – shows you how to configure the device to meet your specific requirements.

- Refer to the *Installation Solutions Guide* for information about installing the AvediaPlayer Receivers using the TV mounting plates, enclosures and fixtures available from Exterity.
- Refer to the *AvediaPlayer r92xx Receivers Getting Started Guide* for interconnection, basic configuration, and Regulatory and Safety information.
- Refer to the *AvediaPlayer Receiver Remote Control Handset Administrator's Guide* for information about the configuration and use of the remote control handset.

All AvediaPlayer documentation is available in the Receivers tab at <http://www.terity.com/support/productdocs.html>.

Additional Documentation

Additional documentation describing customisation and addition of more languages to the displayed client interface, and the use of the RDK (Receiver Development Kit) are available on request from Exterity. Please contact your Exterity sales representative for more information.

Receiver Development Kit (RDK)

The Receiver Development Kit (RDK) enables Exterity partners to create customised solutions using third-party applications such as middleware.

Third-party applications can control the Exterity receiver any or a combination of the following:

- The JavaScript API
- The Terminal Control Interface (TCI)
- The Simple Network Management Protocol (SNMP) interface

The JavaScript API gives programmers extensive control of the AvediaPlayer Receiver and also provides a mechanism for sending customised JavaScript events to the integrated browser. JavaScript programmers can also use Exterity extensions to access commonly-used functions such as changing channels, controlling volume, and video fast forwarding.

Contact your Exterity sales representative for availability of the Receiver Development Kit, Managed Information Base, and customisation documentation.

Scope

This edition of the manual refers to version 3.4 of the AvediaPlayer r92xx Receivers and describes the configuration of the receivers using the Web Admin Interface.

Audience

This manual is intended for use by systems integrators or systems administrators who are installing and setting up Exterity products.

It is assumed that readers are familiar with installing and configuring network-based products. Ideally, readers will also have an understanding of the key features of an IPTV system.

Document Conventions

The following conventions are used in the AvediaPlayer Administrator's Guide:

SMALL CAPITALS – are used to indicate Remote Control handset buttons and button presses, for example MODE and PLAY.

`Courier Font` - is used to identify scripts, code examples, or keyboard commands.

Emphasis is used when referring to another document, for example *AvediaPlayer Getting Started Guide*.

Note: A Note calls attention or adds information that is important for the proper operation of the product.

Caution: A CAUTION notice calls attention to an operating procedure or practice that, if not correctly performed, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

Copyright

Unauthorised use and/or duplication of copyrighted material may be a violation of copyright law in one or many countries/regions. In using the AvediaPlayer you accept full responsibility for the copyright status of the content available on your IP network.

Safety

This guide refers to the AvediaPlayer configuration only. For all Safety and Regulatory information associated with the AvediaPlayer device please refer to the *AvediaPlayer Getting Started Guide* located in the Receivers page at: www.exterity.com/support/productdocs.html.

1

Management Interfaces

There are three main ways to manage the AvediaPlayer Receiver:

- The Web Management Interface.
- The Admin Interface.
- The AvediaServer Director.

In addition, you can use any third-party SNMP tool to manage the receiver. Contact your reseller to obtain the Management Information Base (MIB). Alternatively, you can use the Terminal Control Interface (TCI), part of the Receiver Development Kit (RDK). Please see the *Exterity Receivers Developer's Guide* for more information.

Web Management Interface

You can manage every aspect of the receiver's functionality using its web management interface as follows:

- 1 Enter the IP address of the receiver in your browser or click the receiver's name in the AvediaServer Director application.
- 2 When prompted, enter the correct username and password. The default login details are:

Username: **admin**

Password: **labrador**

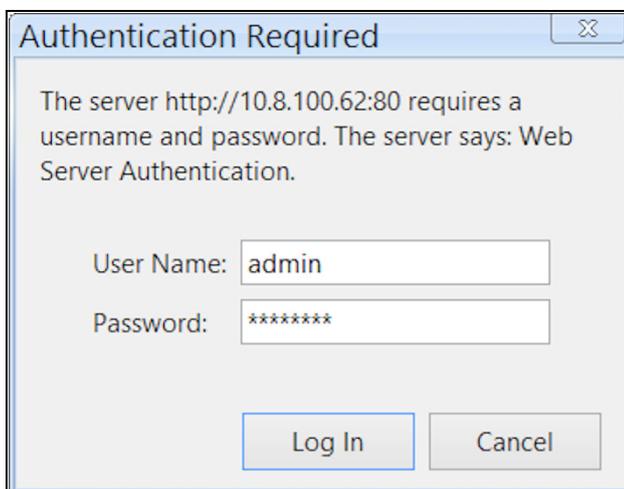


Figure 1 AvediaPlayer login dialog

- 3 The web interface opens in your browser as shown in Figure 2.

If you cannot access the web interface, try to "ping" the receiver, telnet into it, or connect to it using the serial interface (see "Admin Interface" on page 13). If this is still unsuccessful, you can use the rear panel RESET button to reset the device. Please see "Using the Reset Button" on page 62 for more information.

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General

- Receiver Properties
- Network
- Channel Learning
- Web Services
- Encryption
- Authentication
- Display
- TV
- Remote
- Mounting
- Maintenance
- Logging

Details

Software Version 3.2.1-8617

Full Version avr-hd [3.2.1-8617] rel #1 Mon May 6 12:40:41 BST 2013

Serial Number 00:18:1c:01:36:8f

IP Address 10.8.100.31

Product Type AVR-Ab-B-0

Total Resets 2

Soft Resets 1

Remote Resets 1

Uptime 21:53:43

Display Status

Output Format 1080p50

HDMI/HDCP Status No HDCP receiver on the HDMI interface

Name & Location

Name

Location

Figure 2 AvediaPlayer web interface – General page

- Click the menu items in the left panel to display the associated page in the right. Navigate through the menu, changing settings as required. Click Apply Changes on each page before navigating away from that page. A check mark appears on the button indicating the settings have been saved.

Note: You can control access to the web interface by changing the login. Refer to “Changing the Admin Password” in the *AvediaPlayer r92xx Series Getting Started Guide*.

Admin Interface

In certain circumstances it may not be possible to manage a receiver via its web interface. In these situations, you can access the receiver via a text based admin interface, which is available using:

- A terminal emulator program (such as PuTTY). This allows you to log into the receiver using:
 - The serial interface (marked admin on the rear panel of the unit). See Appendix C, "Serial Admin Interface Connection" for details of how to connect to the serial admin port.
 - Telnet
 - A secure shell (SSH). If you choose to connect using SSH in the terminal emulation program, you may see a security warning when you try to connect:



Figure 3 SSH security alert

This is normal and you can safely click Yes.

- AvediaServer. Click  in the AvediaServer Director Name column to launch the admin interface. You may see a security warning, but this is normal and it is OK to proceed.

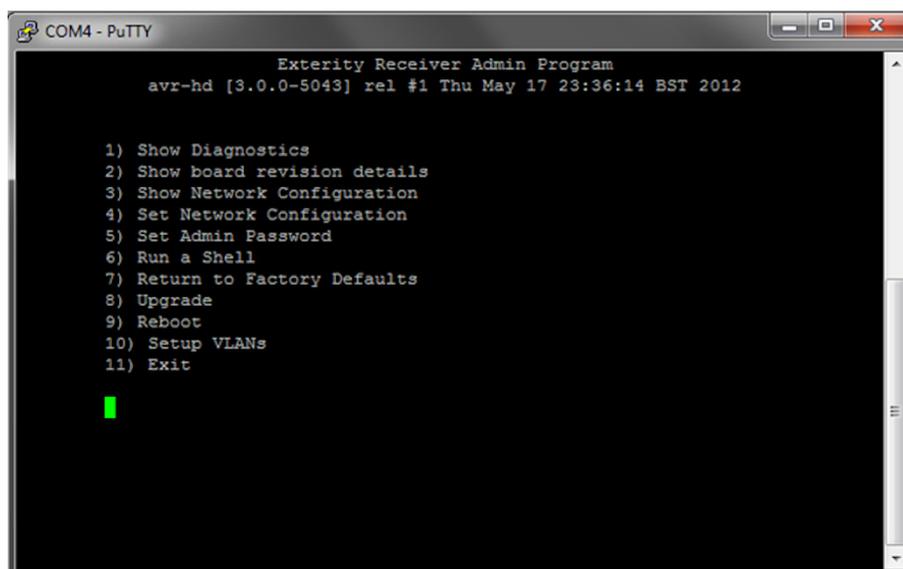


Figure 4 Admin interface

Note: Some PCs may not have telnet support built-in or enabled by default. To enable the telnet client, open Control Panel>Programs and Features >Turn Windows features on or off, and enable Telnet Client.

Once connected, log in using the username `admin` and password `as` for the web interface (default `labrador`).

Note: If the TV/ADM port has been configured for TV serial interface control, return it to the default admin mode by selecting the TV page and None from the TV Control Type drop-down list. If the web interface is unavailable, use the RESET button to set the mode back to its default.

AvediaServer Director

The AvediaServer Director is an application used for device discovery and management and is an integral part of the AvediaServer. It uses SNMP to manage a subset of device functionality and can also be used to start the AvediaPlayer web interface. One of its main features is the ability to manage more than one device simultaneously. For example, you can make changes to one receiver, then use the Director application to apply the new settings to many receivers.

Refer to the *AvediaServer Managing your IPTV System - Administrator's Guide* for more information about using the Director application.

2

Basic Configuration

This chapter describes the basic configuration of the AvediaPlayer r92xx series receiver for use as an IPTV receiver and contains the following information:

- Setting Receiver Properties
- Specifying Front Panel LED Behaviour
- Static Channels
- VLAN Configuration (AvediaPlayer r9220 only)

Introduction

Provided the following basic network conditions are met, AvediaPlayer Receivers require no actual configuration to get them up and running and playing channels on a network.

The network:

- Must be DHCP-enabled. (The AvediaPlayer Receiver is set to DHCP by default.)
- Must have some channels being multicast.
- Must have active SAP announcements. (In its default setting, the AvediaPlayer Receiver listens for these announcements on the multicast address 239.255.255.255.)
- Must be IGMP-enabled.

This is the minimum configuration required to enable a client to view any available channel streams on a connected TV or display. In this configuration, interoperation with middleware (portals) or EPG generators is not expected or required.

This section assumes that the procedures described in the *AvediaPlayer r92xx series Getting Started Guide* have been completed successfully and that you know the AvediaPlayer Receiver IP address.

Confirm that you are connected to the required device by checking the device serial number and configure the name and location as shown in Figure 5.

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- General
- Receiver Properties
- Network
- Channel Learning
- Web Services
- Encryption
- Authentication
- Display
- TV
- Remote
- Mounting
- Maintenance
- Logging

Details

Software Version 3.2.1-8617
 Full Version avr-hd [3.2.1-8617] rel #1 Mon May 6 12:40:41 BST 2013
 Serial Number 00:18:1c:01:36:8f
 IP Address 10.8.100.31
 Product Type AVR-Ab-B-0
 Total Resets 2
 Soft Resets 1
 Remote Resets 1
 Uptime 21:53:43

Display Status

Output Format 1080p50
 HDMI/HDCP Status No HDCP receiver on the HDMI interface

Name & Location

Name
 Location

Figure 5 Web Interface - General page

Setting Receiver Properties

The Receiver Properties page allows you to configure the receiver audio and video output settings, and to specify the front panel LED behaviour.

Screen	
Video Interface	HD <input type="text"/>
Screen Resolution	Auto <input type="text"/>
Aspect Ratio	Auto <input type="text"/>
Splash Screen	
Splash Screen Name	<input type="text"/>
Screen Saver	Off <input type="text"/>
Audio	
Audio Volume (0-40)	20 <input type="text"/>
Mute Audio	<input type="checkbox"/>
Preferred audio language <small>(any 2 or 3-character ISO639 code)</small>	en_GB <input type="text"/>
Select preferred audio language from current channel	--options-- <input type="text"/>
Subtitles and Teletext	
Subtitles/Captions	On <input type="text"/>
Preferred subtitle language <small>(any 2 or 3-character ISO639 code)</small>	en_GB <input type="text"/>
Select preferred subtitle language from current channel	--options-- <input type="text"/>
Close caption channel	CC1 <input type="text"/>
Enable Teletext on VBI (disables component for SD)	off <input type="text"/>
Miscellaneous	
Time Zone	UTC <input type="text"/>
Default LED Status	On <input type="text"/>
<input type="button" value="Apply Changes"/>	

Figure 6 Receiver properties

It is divided into the following sections:

- Specifying Parameters for the Connected Screen
- Configuring the Splash Screen
- Setting the Audio Level and Preferred Language
- Enabling Subtitles and Closed Captions
- Displaying Teletext
- Specifying the Time Zone
- Specifying Front Panel LED Behaviour

Specifying Parameters for the Connected Screen

Outputs up to 1080p @50Hz, 59.94Hz and 60Hz are available from the HDMI port. Up to 1080i @50Hz, 59.94Hz and 60Hz is available from the r9210 component connectors.

When the receiver is connected to the TV/display using the HDMI interface, you can leave the Screen Resolution and Aspect Ratio settings at the default Auto value. EDID information from the TV/display is used to determine the optimum settings, and the receiver uses these values to configure its output. In some instances however, manual configuration may be required.

Output can be configured for 4:3 or widescreen displays.

Additional r9210 Outputs

The r9210 also supports SD output at 480i/576i 50/60Hz on the analogue Composite, S-Video and RGBS connections. Table 1 and Table 2 explain which connections are available:

Table 1 Unencrypted content

	HDMI	Component	Composite	S-Video
SD	No	Yes	Yes	Yes
HD	Yes, if HDCP authentication succeeded when encrypted content started playing. Otherwise No.	Yes	No	No

Table 2 Encrypted content

	HDMI	Component	Composite	S-Video
SD	No	No	No	No
HD	Yes, if HDCP authentication succeeded when encrypted content started playing. Otherwise No.		No	No

Note: When the video interface is set to HD and Screen Resolution is Auto, 1080i is output from the Component connections. You must manually configure the Screen Resolution if a different output is required.

Note: In HD mode the r9210 outputs to both HDMI and Component connections at settings up to 1080i. If a setting of 1080p is manually chosen or is negotiated when set to Auto, only the HDMI output is available.

To specify the video interface:

- 1 Click Receiver Properties to display the page as shown in Figure 6.
- 2 Select SD or HD from the Video Interface drop-down list to suit the connected television or display.
- 3 Click Apply Changes.

If you have selected SD, skip the next step and continue on to Additional SD Settings. Otherwise proceed as follows:

To specify the screen resolution:

- 1 Click Receiver Properties to display the page as shown in Figure 6.
- 2 Click the Screen Resolution drop-down list and select 480p 60Hz, 576p 50Hz, 720p 60Hz, 720p 50Hz, 1080i 60Hz, 1080i 50Hz, 1080p 60Hz, 1080p 50Hz, or Auto to suit the connected television or display. You should use Auto unless you want to use a specific resolution and frame rate.
- 3 Select Auto from the Aspect Ratio drop-down list.
- 4 Click Apply Changes.

Additional SD Settings

If you selected SD you can configure the AvediaPlayer Receiver to output for a Normal (4:3) or Widescreen (16:9) connected television or display. When in SD mode and connected to a Normal (4:3) television or display, the Aspect Ratio setting controls how a widescreen signal is displayed. There are two options:

- **Centre** – Displays the centre of the widescreen image. The left and right outside margins of the picture are lost.
- **Letterbox** – Displays the complete widescreen image with black bars at top and bottom.

When a widescreen television or display is connected you can choose how 4:3 content is displayed. When displaying 4:3 content on a widescreen TV, Auto renders the content in the correct aspect ratio with black 'curtains' to either side of the picture. Selecting Force 16:9 stretches 4:3 content to fill the display.

To set the screen format and aspect ratio:

- 1 Click Receiver Properties to display the page as shown in Figure 6.
- 2 Select Normal or Widescreen from the Screen Resolution drop-down list.
 - If you selected Normal, select Letter Box or Centre from the Aspect Ratio drop-down list.
 - If you selected Widescreen, select Auto or Force 16:9 from the Aspect Ratio drop-down list.
- 3 Click Apply Changes.

When to use Force 16:9

The Aspect Ratio setting Force 16:9 is provided to offer a choice of how 4:3 content is displayed on a widescreen TV. When displaying 4:3 content on a widescreen TV, Auto renders the content in the correct aspect ratio with black bars to either side of the picture. Selecting Force 16:9 stretches 4:3 content to fill the display.

Configuring the Splash Screen

Audio/Video is the default display mode for the AvediaPlayer Receiver power on process. You can specify an image to be used as a splash screen in the Current or Startup Mode on the Display page. If you do not specify an image, the Exterity default screen is displayed.

Splash Screen Requirements

Alternative images can be .jpg, .gif or .png file format. When creating a splash screen image for HD output, restrict the image to a resolution of 1280x720 pixels and a maximum of 32-bit colour quality. The maximum file size is 1MB.

The receiver uses TFTP to download new splash screen images from a TFTP server. To update the splash screen, first ensure that the correct TFTP server IP address is specified in the Maintenance page Settings section, and that the TFTP server is running.

- If the TFTP server is not running, you can only use the last uploaded image (or the default).
- If the file cannot be found, the default splash screen is used.

To specify the splash screen image:

- 1 Click Receiver Properties to display the page as shown in Figure 6.
- 2 Enter the name of the image file, including the file extension, into the Splash Screen Name field.
- 3 Click Apply Changes.

The splash screen file is now downloaded from the TFTP server. You can configure the splash screen to be displayed on startup, or immediately:

To display the splash screen on startup:

- 1 Ensure you have uploaded the image file as described.
- 2 Click Display.
- 3 Select Splash Screen from the Startup Mode drop-down list.
- 4 Click Apply Changes.

To display the splash screen immediately:

- 1 Ensure you have uploaded the image file as described.
- 2 Click Display.
- 3 Select Splash Screen from the Current Mode drop-down list.
- 4 Click Apply Changes.

Setting the Audio Level and Preferred Language

You can set the level of audio volume output from the receiver. This is a value between 0 (min volume) and 40 (max volume). The default is 20. You can also turn off the audio output using the Mute Audio function. Audio is enabled by default.

Some TV channels have multiple audio streams in different languages. The receiver can be configured with a preferred audio and displayed text language. If a channel contains an audio stream of this language it is selected, otherwise the first language found is used.

To set the Audio Volume:

- 1 Click Receiver Properties to display the page as shown in Figure 6.
- 2 Enter a value between 0 and 40 in the Audio Volume field.
- 3 Click Apply Changes.

To mute the audio output:

- 1 Click Receiver Properties to display the page as shown in Figure 6.
- 2 Click the Mute Audio checkbox.
- 3 Click Apply Changes.

To set the preferred audio language:

- 1 Click Receiver Properties to display the page as shown in Figure 6.
- 2 In the Preferred audio language field, enter the two or three character ISO639 code for the language, or if the current channel has embedded language codes, select the required language from the Select preferred audio language from current channel drop-down list.
- 3 Click Apply Changes.

Refer to Chapter 8, "Configuring Remote Control Handsets" to set the volume, mute audio and specify text languages using the Exterity Remote Control handsets.

Enabling Subtitles and Closed Captions

The AvediaPlayer r92xx supports Subtitles and Closed Captions which can be enabled/disabled using the web interface. The default for both is off.

To enable subtitle display:

- 1 Click Receiver Properties to display the page as shown in Figure 6.
- 2 Select On from the Subtitles/Captions drop-down list.

Subtitles and Teletext

Subtitles/Captions: On

Preferred subtitle language: en_GB
(any 2 or 3-character ISO639 code)

Select preferred subtitle language from current channel: --options--

Close caption channel: CC1

Enable Teletext on VBI (disables component for SD): off

Figure 7 Configuring subtitles

- 3 In the Preferred subtitle language field, enter the two or three character ISO639 code for the language, or if the current channel has embedded language codes, select the required language from the Select preferred subtitle language from current channel drop-down list.
- 4 Click Apply Changes.

To enable closed caption display:

- 1 Click Receiver Properties to display the page as shown in Figure 6.
- 2 Select On from the Subtitles/Captions drop-down list.
- 3 Select the required CC channel (CC1 to CC4) from the Closed caption channel drop-down list.

Subtitles and Teletext

Subtitles/Captions: On

Preferred subtitle language: en_GB
(any 2 or 3-character ISO639 code)

Select preferred subtitle language from current channel: --options--

Close caption channel: CC1

Enable Teletext on VBI (disables component for SD): off

Miscellaneous

Figure 8 Configuring closed captions

- 4 Click Apply Changes.

Displaying Teletext

All AvediaPlayer r92xx receivers can decode Teletext pages when they are included in the selected channel and display them on the connected TV. No additional configuration is required. The AvediaPlayer r9210 composite output also supports Teletext (pass through) on the VBI (vertical blanking interval).

Teletext Decoding

Teletext pages are accessed and displayed by pressing the TEXT button on the AvediaPlayer V5 Remote Control handset. The Audio Level and Mute controls operate as normal.

Note: To view Teletext pages using Exterity Remote Control Handsets V3 and V4, a customised handset file is required.

Teletext on the VBI

In addition to Teletext decoding, Teletext pass through is available on the composite output of the AvediaPlayer r9210 receiver; the decoding process is carried out by the connected TV.

To enable Teletext on VBI (r9210 only):

- 1 Click Receiver Properties to display the page as shown in Figure 6.
- 2 Select On from the Enable Teletext on VBI drop-down list.

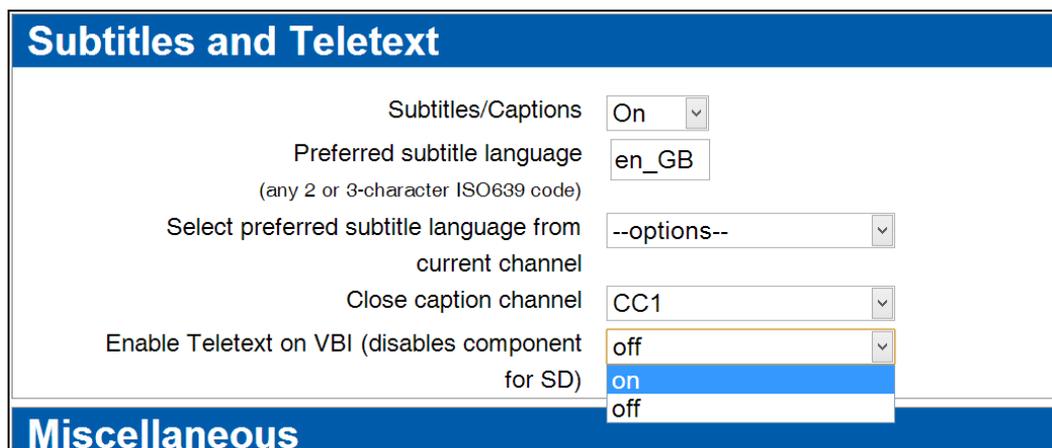


Figure 9 Enabling Teletext on VBI

- 3 Click Apply Changes.

Note: Teletext on VBI can only be viewed using the connected TV Teletext function.

Specifying the Time Zone

Use of a time server with the Time Zone configuration ensures all devices in your IPTV system are both synchronised and set to the local time. The receiver uses NTP to maintain accurate time on the device, using the time server specified.

To configure the Time Zone:

- 1 Click Receiver Properties to display the page as shown in Figure 6.
- 2 Enter the local time zone in the Time Zone field.
- 3 Click Apply Changes.

You can specify a time zone for the location of the receiver in the Time Zone field using time zone codes and variables compliant with the Posix specified TZ-variable.

For example, to specify GMT without daylight saving (British Summer Time), simply enter GMT and click Apply Changes. For locations west of the Prime Meridian you must add a positive offset. For locations east, add a negative offset. You can also specify daylight saving parameters, setting the time and the start/stop period.

Example 1: Specify Central European Time (CET) all year

CET time is 1 hour east of the Prime Meridian

- 1 Click Receiver Properties to display the page shown in Figure 6.
- 2 Enter CET-1 in the Time Zone field.
- 3 Click Apply Changes.

Example 2: Specify Eastern Standard Time (EST) with daylight saving:

- Eastern Standard time is 5 hours west of the Prime Meridian
 - Daylight saving begins on the first Sunday in April at 2:00am
 - Daylight saving ends on the last Sunday in October at 2:00am
- 1 Click Receiver Properties to display the page shown in Figure 6.
 - 2 Enter EST+5EDT,M0/2,M0/2 in the Time Zone field.
 - 3 Click Apply Changes.

Specifying Front Panel LED Behaviour

The main LED on the front of the receiver can be configured to have default mode On or Off.

- If the default status is On, the LED pulses constantly, blinking in response to input from the Remote Control handset.
- If the default status is Off, the LED stays off, blinking only in response to input from the Remote control handset. The default value for this setting is On, pulsing.

To set the default LED status:

- 1 Click Receiver Properties to display the page as shown in Figure 6.
- 2 Select On or Off from the Default LED Status drop-down list.
- 3 Click Apply Changes.

Configuring Channel Learning

This section shows you how to configure the AvediaPlayer Receiver to find and display channel information and how to assign group membership.

Channel Learning

Type

Enable IGMP SSM

SAP Announcement (Multicast Addresses)

The device listens to SAP announcements to discover channels on the network. It always listens on the address used by Exterity servers (239.255.255.255). To configure the device to listen on additional multicast addresses, enter them in the table below.

In use

<input type="text"/>	(New Address) <input type="checkbox"/>
----------------------	--

Groups

Member Of

all	<input checked="" type="checkbox"/>
sky_channels	<input type="checkbox"/>
new	<input type="checkbox"/>
<input type="text"/>	(New Group) <input type="checkbox"/>

Figure 10 Channel Learning page

It contains the following topics:

- Discovering TV Channels
- Enabling Source Specific Multicast
- Selecting SAP Channel Announcements
- Specifying Group Membership
- Selecting an XML Channel List
- Disabling Channel Choice

Discovering TV Channels

The receiver can use two mechanisms to build the list of channels: SAP (default) and XML.

- When SAP is selected, the channel list is built up from SAP (Session Announcement Protocol) announcements generated by Exterity Encoders, TV Gateways and other compatible products.
- When XML is selected, the channel list is created from the listing in an XML file downloaded by the receiver from a web server. To ensure the list is up to date, you can configure the receiver to download the file at specified intervals.

In some applications, such as digital signage or use with a portal, you may want to render the receiver unable to detect, and hence select, any other channels by selecting None in the Channel Learning menu.

Note: You can also specify content that is not announced using SAP or specified in an XML channel list. For more information refer to *KB000295 Configuring Static Channels on r92xx Receivers*.

Enabling Source Specific Multicast

Source Specific Multicast (SSM) is supported by the AvediaPlayer r92xx receivers and can be enabled if required. SSM is an enhancement to IP multicast (defined in IGMP v3) and also requires support in your network switches. When enabled, the source and multicast address for each channel are listed in on the Display page. Source-specific multicast (SSM) allows delivery of multicast packets which are only those from a source address specified by the receiver. If IGMP V3 is not implemented on your network you cannot use SSM.

When enabling or disabling SSM, you must reboot the receiver to repeat the channel discovery process. The URI is specified in the form:

```
scheme://[source@]address:port
```

for example:

```
udp://100.8.100.3@239.192.0.72:5000
```

To enable source specific multicast:

- 1 Click Channel Learning to display the Channel Learning page as shown in Figure 10.
- 2 Click the Enable IGMP SSM checkbox.
- 3 Click Apply Changes.
- 4 Click Maintenance and select Reboot from the Operation drop-down list.
- 5 Click Apply Changes.
- 6 After the AvediaPlayer Receiver has re-started click Display.
- 7 Confirm the channels list are in the form:

```
scheme://[source@]address:port
```

Number	Name	URI	Groups
<input type="radio"/> 0	BBC One HD	udp://239.192.3.29:5000?format=33	all
<input checked="" type="radio"/> 10	ITV3	udp://227.1.3.1:5000?format=33	dbstandard
<input type="radio"/> 1	BBC ONE Scot	udp://239.192.0.142:5000?format=33	all
<input checked="" type="radio"/> 2	BBC TWO Scot	udp://239.192.1.142:5000?format=33	all
<input type="radio"/> 0	EinsPlus	udp://239.192.0.181:5000?format=33	all
<input checked="" type="radio"/> 0	Einsfestival	udp://239.192.1.181:5000?format=33	all
<input type="radio"/> 0	PHOENIX	udp://239.192.2.181:5000?format=33	all
<input checked="" type="radio"/> 0	arte	udp://239.192.4.181:5000?format=33	all
<input type="radio"/> 7	BBC THREE	udp://239.192.2.142:5000?format=33	all

Figure 11 Example SSM Enabled Channel List

Selecting SAP Channel Announcements

In its default setting, the AvediaPlayer Receiver listens for these announcements on the multicast address 239.255.255.255. If there are devices on the network sending announcements to another IP address, you can configure the receiver to listen for these announcements by adding the IP address to the SAP Announcement Multicast Address table.

To set an additional multicast address:

- 1 Click Channel Learning to display the Channel Learning page as shown in Figure 10.
- 2 Select SAP from the Channel Learning Type drop-down list.
- 3 Enter the new IP address into the (New Address) field.

The screenshot shows the 'Channel Learning' configuration page. The 'Type' dropdown is set to 'SAP' and 'Enable IGMP SSM' is checked. Below this is the 'SAP Announcement (Multicast Addresses)' section, which includes a descriptive paragraph and a table for adding addresses. The table has two columns: 'In use' (checkbox) and '(New Address)' (text input). The 'In use' checkbox is unchecked and the 'New Address' field is empty.

Figure 12 Adding an additional multicast address

- 4 Click the adjacent checkbox.
- 5 Repeat this process to add multicast addresses as required.
- 6 Enable or disable the listed addresses using the adjacent checkboxes.
- 7 Click Apply Changes.

Specifying Group Membership

The Exterity Groups mechanism is used to filter channels to ensure that only a specific audience can view specific channels. Groups are set up on Exterity Encoders and TVgateways, and channels are then assigned to particular group(s), as required. The group information is included in the SAP announcements for each configured channel.

Once you have created groups on the encoder or TVgateway and allocated channels to them, you then add the receiver to a group. If you do not add the receiver to any specific groups, it is automatically a member of the group "all". As a member of the "all" group, all channels on the network are listed and can be viewed on that receiver. Adding the receiver to one or more groups means that only channels in those groups are displayed in that receiver's channels list.

For example, you might have a group of free sports channels to which all users have access, and a group of premium sports channels, which only certain users can access. Adding the receiver only to the FreeSports group means that no channels from the PremiumSports group are available from the channels list on that receiver.

You can also use groups to ensure that only channels appropriate for the end users are available to them.

Tip: An additional level of content management is available through the AvediaServer Portal application, in the form of genres. For more information, see the *AvediaServer - Managing Client Interfaces Administrator's Guide*.

Figure 13 Groups page

To add the receiver to a channel group:

- 1 Click Channel Learning to display the page as shown in Figure 10.
- 2 In the Groups panel:
 - Select a previously configured group by clicking the associated checkbox or,
 - Enter a new group name in the New Group field and click the adjacent checkbox.
- 3 Click Apply Changes.

Selecting an XML Channel List

In XML mode, the channel list is an XML file which the receiver downloads from a web server. To ensure the list is up to date, the receiver downloads the file at an interval specified by the administrator.

The format of the channel list is described in Appendix A, "Playlist Format".

To set the channel list URL:

- 1 Click Channel Learning to display the Channel Learning page as shown in Figure 10.
- 2 Select XML from the Channel Learning Type drop-down list.

Figure 14 Setting the channel list URL

- 3 Enter URL of the XML file into the Channel List URL field. (With DNS available on your network, you can use the form `http://www.example.com/my_channel_list.`)
- 4 Enter the interval in minutes into the Refresh Interval field.
- 5 Click Apply Changes.

Disabling Channel Choice

You can deselect channel learning where there is no requirement to select from channels discovered by the AvediaPlayer Receiver. This can be useful if channel availability is to be controlled by a portal, or the AvediaPlayer Receiver is to be used in a digital signage application. When disabled, you must specify the AvediaPlayer Receiver display mode and the URI of the content. Refer to "Simultaneously Specifying Mode and Content" on page 37 for more information.

Channel Learning is enabled by default.

To disable channel learning:

- 1 If the content you want to display is not a currently streaming channel continue from Step 4, otherwise first select the channel.
- 2 Click Display and select the required channel from the Current Channel list.
- 3 Click Change Channel.
- 4 Click Channel Learning in the menu on the left.
- 5 Select None from the Channel Learning Type drop-down list.

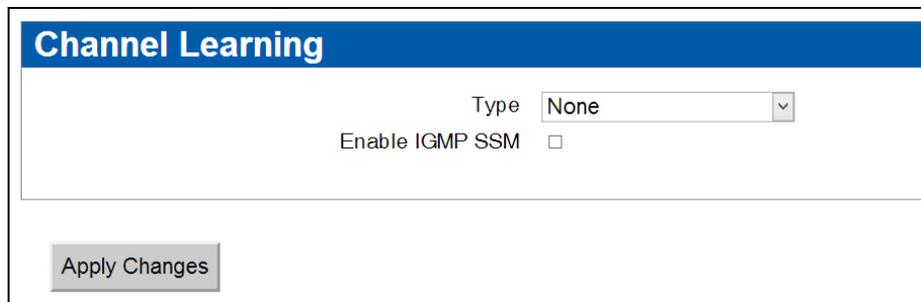


Figure 15 Disabling channel learning

- 6 Click Apply Changes.

When Channel Learning is disabled no channels are listed on the Display page and the AvediaPlayer Receiver does not respond to Remote Control handset Channel +/- or ▲/▼ button presses.

Note: If re-enabling channel learning, the channel list is re-populated as each announcement is received. You may need to refresh your browser until the channel list is fully rebuilt.

Static Channels

A static channel is a way of making content available independently of other IPTV system content and the channel learning processes.

For example, you may want to:

- Include some files held on local/remote storage devices and include them in the channel listing.
- Include content from a source that does not use SAP to announce the presence of the channel.
- Add a channel but hide its listing from the Program Guide displayed on the connected TV.

The procedures required are beyond the scope of this guide but are detailed in an Exterity Knowledge Base article. Ask your Exterity representative for *KB000295 Configuring Static Channels on r92xx Receivers*.

VLAN Configuration (AvediaPlayer r9220 only)

This section describes setting up 802.1q VLANs on the AvediaPlayer r9220 receiver internal switch.

Note: The AvediaPlayer r9200 and r9210 do not support VLANs.

You can enable the use of 802.1q VLANs and set VLAN IDs for each port. Using VLANs allows you to ensure the IPTV system and other network traffic, for example VOIP phone and computer systems, are segregated. The VLAN page is shown in Figure 16.

Figure 16 VLAN settings

- Port Ethernet 1 must be the uplink to the main network, and is configured as a VLAN trunk port. This means that all packets transmitted are tagged on this port, with the exception of packets on the configured Native VLAN, which are transmitted untagged.
- Ports Ethernet 2, Ethernet 3, and Ethernet 4 are the ports to which additional network devices can be attached. Outgoing traffic is transmitted untagged on these ports, while incoming traffic is tagged with the configured VLAN ID prior to transmission on the uplink.
- The Host port is the switch port to which the actual receiver is attached, that is, the port on the switch which passes streaming and management traffic to the receiver. Like ports 1 and 2, outgoing traffic is transmitted untagged on this port, while incoming traffic is tagged with the configured VLAN ID.

To enable the use of VLANs:

- 1 Click VLAN to display the VLAN Settings page as shown in Figure 16.
- 2 Select Enabled from the 802.1Q VLAN Support drop-down list.
- 3 Enter the native VLAN ID in the Native VLAN field. This should match the Native (Default) VLAN ID of the main network.
- 4 Enter VLAN IDs for Ethernet 2, Ethernet 3, and Ethernet 4 as required.
- 5 Click Apply Changes.

3

Selecting Channels

This chapter contains the following sections:

- Selecting Channels with the Web Management Interface
- Selecting a Channel from the List
- Handling Encrypted Content
- SecureMedia Configuration

Streamed TV and radio channels can be selected for display on the connected TV or display by using the Remote Control handset to choose a TV or radio channel, or by the system administrator. Note that, without further configuration, the user can only choose from the streamed TV and radio channels.

Selecting Channels with the Web Management Interface

The Display page contains three sections which allow you to control the content displayed on the connected television or display.

- **Display** enables configuration of the startup and current display mode.
- **URLs** allow you to specify a web page to be displayed when in browser mode, and you can select a channel from the Current Channel list to be played when in AV mode.
- You can also change the display mode and content at the same time using the required syntax in the **Current Channel** entry field.

While in Audio/Video mode you can change the channel by selecting one of the channels in the list. To order the channels, click the Number, Name, URI or Group column headings. Click a heading again to reverse the order.

Click Display to open the page as shown in Figure 17. Any configuration changes made are applied immediately when you click Change Channel or Apply Changes.

For example, you can change the current channel or temporarily override the web page being displayed.

Display

Startup Mode

Current Mode

URLs

Webpage

Playlist

Current Channel

URI (BBC NEWS)

Number	Name	URI	Groups
<input type="radio"/> 789	BBC2 Support SM	udp://228.1.1.2:5000?format=33	support
<input checked="" type="radio"/> 723	talkSPORT	udp://227.1.1.3:5000?format=33	dbstandard
<input type="radio"/> 82	Sky News	udp://227.1.1.2:5000?format=33	dbstandard
<input checked="" type="radio"/> 18	4Music	udp://227.1.1.110:5000?format=33	dbstandard
<input type="radio"/> 83	Al Jazeera Eng	udp://227.1.1.102:5000?format=33	dbstandard
<input checked="" type="radio"/> 15	Film4	udp://227.1.1.101:5000?format=33	dbstandard
<input type="radio"/> 24	ITV4	udp://227.1.1.103:5000?format=33	dbstandard
<input checked="" type="radio"/> 21	VIVA	udp://227.1.1.109:5000?format=33	dbstandard
<input type="radio"/> 712	Smash Hits!	udp://227.1.1.105:5000?format=33	dbstandard
<input checked="" type="radio"/> 711	The Hits Radio	udp://227.1.1.104:5000?format=33	dbstandard

Figure 17 Display web page

Selecting a Channel from the List

All the discovered TV and radio channels are listed in the Display Channel table on the Display page of the Web Admin Interface.

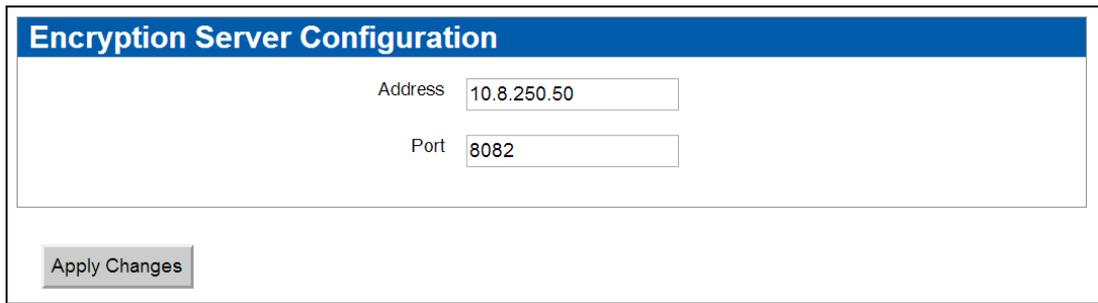
To select a channel from the list:

- 1 Click Display to view the page as shown in Figure 17.
- 2 Unless already selected, select Audio/Video from the Current Mode drop-down list.
- 3 Click the radio button for the required channel in the Current Channel table.
- 4 Click Apply Changes.

Handling Encrypted Content

The AvediaPlayer r92xx series receivers support three types of encryption:

- SecureMedia Encryptonite
- Packetship Keyline - used to decrypt VoD assets. No configuration is required on the receiver.
- Exterity - supports legacy encoders which use AES encryption. No configuration is required on the receiver.



Encryption Server Configuration

Address

Port

Figure 18 Encryption Page

SecureMedia Configuration

The SecureMedia server details must be specified on the AvediaPlayer Receiver to allow encrypted content to be viewed.

Note: Video/audio output is only available at the HDMI interface when the AvediaPlayer Receiver is decoding encrypted content and an HDCP connection with the display device has been negotiated. AvediaPlayer r9210 analogue output is disabled.

To configure the details of the SecureMedia server:

- 1 Click Encryption to display the page as shown in Figure 18.
- 2 Enter the IP address of the SecureMedia server in the Address field.
- 3 Enter the port number used to communicate with the server in the Port field (default 8082).
- 4 Click Apply Changes.

Note: The SecureMedia Link application of the AvediaServer delivering the encrypted content must also be configured with the IP address of the SecureMedia encryption server. The AvediaPlayer Receiver should also be listed by the AvediaServer SecureMedia Link application. Refer to Using the SecureMedia Link Application in the *AvediaServer – Managing Content Administrator's Guide* for more information.

4

Authentication

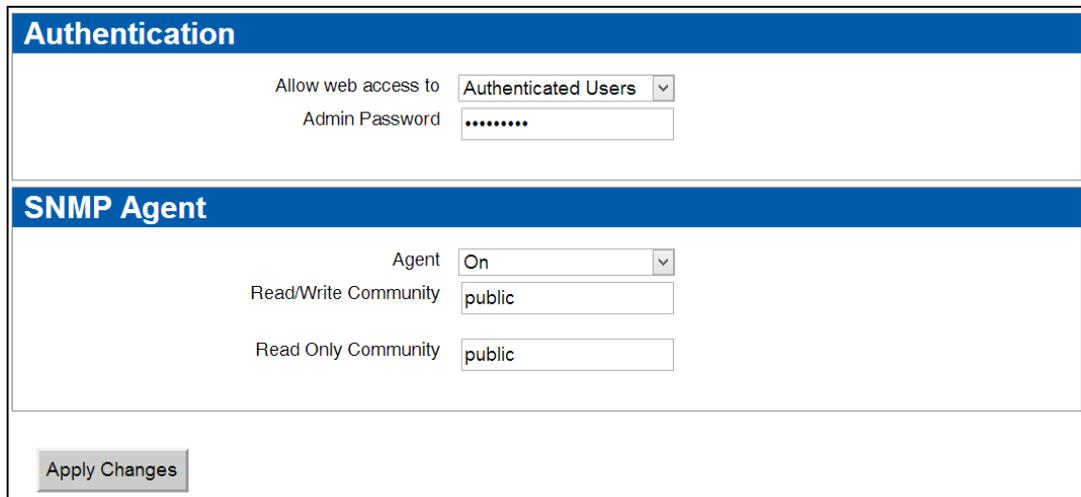
This chapter contains the following sections:

- Configuring Authentication
- Configuring the SNMP Agent
- Configuring an SNMP Trap Manager

The system administrator can specify which users can access the web interface pages. They can also enable or disable the SNMP agent, and configure community settings.

Configuring Authentication

The Authentication section allows you to specify which users can access the web interface pages.



The screenshot shows a web interface for configuring authentication and SNMP agent settings. It is divided into two main sections: 'Authentication' and 'SNMP Agent'.
In the 'Authentication' section, there is a dropdown menu for 'Allow web access to' set to 'Authenticated Users' and a password field for 'Admin Password' containing seven dots.
In the 'SNMP Agent' section, there is a dropdown menu for 'Agent' set to 'On', and two text input fields for 'Read/Write Community' and 'Read Only Community', both containing the text 'public'.
At the bottom of the form is a button labeled 'Apply Changes'.

Figure 19 Authentication web page

To allow all logged-in users to access the web interface pages:

- 1 Click Authentication to display the page as shown in Figure 19.
- 2 Select All Users.
- 3 Click Apply Changes.

To allow only authorised users to access the web interface pages:

- 1 Click Authentication to display the page as shown in Figure 19.
- 2 Select Authorised Users.
- 3 Specify the password that authorised users must enter to access the web pages.
- 4 Click Apply Changes.

Configuring the SNMP Agent

The SNMP Agent section allows you to specify whether or not the receiver acts as an SNMP Agent.

Note: To specify an SNMP Trap Manager on your network, please see “Configuring an SNMP Trap Manager” on page 34.

To specify the device's SNMP Agent status:

- 1 Click Authentication to display the page as shown in Figure 19.
- 2 In the SNMP Agent section, check the box to enable the SNMP Agent, or leave unchecked to disable.
- 3 If enabled, enter the required read/write and read-only community strings in the appropriate boxes.
- 4 Click Apply Changes.

Note: If the SNMP Agent is disabled, no SNMP Traps are sent by the receiver. This means that Exterity Management tools (for example, the Director application) will be unable to detect the device on the network.

Configuring an SNMP Trap Manager

SNMP traps are mainly used as device discovery messages; they enable Exterity's management applications to discover devices on the network. These traps are always broadcast to 255.255.255.255. They are also transmitted to an additional configurable destination. By default, this is the multicast address 239.255.255.255, but this can be reconfigured to any broadcast, multicast or unicast destination as required.

If your network has an SNMP Trap Manager, enter its IP address here.

5

Using Display Modes

This chapter contains the following information:

- Display Modes
- Setting the Startup Mode
- Setting the Current Mode
- Displaying a Web Page
- Playing a Playlist
- Simultaneously Specifying Mode and Content

Audio/Video is the default mode for the AvediaPlayer Receiver. The system administrator can also configure any additional functions available from the IP network, including middleware such as the AvediaServer Portal and EPG applications and internet access via the built-in web browser. Any display mode, except Off, can be configured as the power-on default and when returning from standby.

It can also be configured to play content in the form of a playlist held in either local (USB) or remote mounted locations. Refer to Appendix A, "Playlist Format" and to Chapter 11, "Using External Storage Devices" for more information.

Display Modes

The Display section of the Display web page allows you to configure both the startup display mode for the AvediaPlayer Receiver and the current mode.

Various display modes are defined as follows:

- **Off:** turns off all audio/video outputs to the television or display (Not available as a startup mode).
- **Audio/Video:** plays selected TV and Radio channels (default).
- **Web Browser:** runs the ANT Galio browser, displaying the web page specified in the Webpage field of the URLs section. If left blank, the Homepage configured on the Web Services page is displayed. Refer to "Specifying a Homepage" on page 51 for more information.
- **Splash Screen:** displays the specified splash screen (configured on the Receiver Properties page). Refer to "Configuring the Splash Screen" on page 19 for more information.
- **Playlist:** plays back the files in the configured playlist. Refer to Appendix A, "Playlist Format" for more information.
- **EPG:** displays the program guide from the Exterity EPG server (configured on the Web Services page. Refer to "Specifying an EPG" on page 52 for more information.

Setting the Startup Mode

Startup mode is applied when the receiver is powering on, rebooting, or returning from standby. The available options are: Audio/Video, Web Browser, Splash Screen, Playlist and EPG. The default is Audio/Video.

To set the startup display mode:

- 1 Click Display to display the page as shown in Figure 17.
- 2 Select Audio/Video, Web Browser, Splash Screen, Playlist or EPG from the Startup Mode drop-down list.
- 3 Click Apply Changes.

Setting the Current Mode

You can control the current mode of operation. The available options are: Off, Audio/Video, Web Browser, Splash Screen, Playlist and EPG. The default is Audio/Video. You can use the current mode setting to override the current display.

To set the current display mode:

- 1 Click Display to display the page as shown in Figure 17.
- 2 In the Display section, click the Current Mode drop-down list to select Off, Audio/Video, Web Browser, Splash Screen, Playlist or EPG.
- 3 Click Apply Changes. The output to the connected TV or display is updated.

To regain control of the television or display using the Remote Control handset, press the TV button.

Displaying a Web Page

While in browser mode, you can use the web management interface to navigate the browser to a particular page, overriding the home page.

To display a web page:

- 1 Click Display to display the page as shown in Figure 17.
- 2 In the URLs section, enter a URL into the Webpage field.
- 3 Select Web Browser from the Current Mode drop-down list in the Display section.
- 4 Click Apply Changes to display the selected webpage on the connected television or display.

Note: This field is cleared after the changes are applied. Subsequent Web Browser Display Mode changes display the Homepage (if configured in the Browser section of the Web Services page).

To regain control of the television or display using the Remote Control handset, press the TV button.

Playing a Playlist

In playlist mode, the AvediaPlayer Receiver plays the files specified in the playlist file. The playlist file can be hosted on a local (USB) storage device or a web server. To configure the receiver to run a playlist, you must specify the URL of the playlist. For the format of the playlist file, refer to Appendix A, "Playlist Format". Refer to Chapter 11, "Using External Storage Devices" for more information about configuring storage.

Note: To ensure smooth playback of a playlist, you should ensure that each item in the playlist requires the same codec and that the frame rate is the same whenever possible. Re-configuration during playback caused by dissimilar content can result in periods of no output on the client display.

To select a playlist:

- 1 Click Display to display the page as shown in Figure 17.
- 2 In the URLs section, enter the URL of your playlist into the Playlist field. (The example in Figure 20 shows the URL of a playlist in the mounted USB storage device.)
- 3 Select Playlist from the Current Mode drop-down list in the Display section.

The screenshot shows a configuration window with two main sections: "Display" and "URLs".

- Display Section:** Contains two dropdown menus. "Startup Mode" is set to "Web Browser" and "Current Mode" is set to "Playlist".
- URLs Section:** Contains two text input fields. The "Webpage" field is empty. The "Playlist" field contains the text "mnt/sda1/playlist.txt".

Figure 20 Playlist in local USB storage device

- 4 Click Apply Changes to play the specified playlist.

To regain control of the television or display using the Remote Control handset, press the TV button.

Simultaneously Specifying Mode and Content

You can change the display mode and displayed content by specifying both in the Current Channel entry field. This can be useful, for example when configuring a static channel, allowing you to specify a different mode as part of the channel parameters. (Refer to "Static Channels" on page 28 for more information.) To do this, you must specify the Mode and URI in the form:

```
mode:scheme://[uri]
```

for example:

```
media:file:///mnt/usb/sda1/samplemedia.ts
```

where mode is one of the following:

- **browser** – use browser to change the display mode to use the web browser and display the content specified by the URI. For example:
 - `browser:http://www.mywebpage.html` changes the display mode to Browser and shows the web page specified in the URI
 - `browser:http://www.mypicturepage.com/image.jpg` changes the display mode to Browser and shows an image specified in the URI in the browser

- **media** – use media to change the display mode to Audio/Video and display the content specified by the URI. For example:
 - `media:udp://239.192.0.72:5000` changes the display mode to Audio/Video and displays a multicast stream specified in the URI.
 - `media:file:///mnt/usb/sda1/samplemedia.ts` changes the display mode to Audio/Video and plays a transport stream from a mounted drive location specified in the URI.
- **playlist** – use playlist to change the display mode to Playlist and play the content specified in the playlist URI. For example:
 - `playlist: http://10.8.90.7/playlists/welcomeplaylist` changes the display mode to Playlist and plays the content listed from a web server specified in the URI.
 - `playlist:/mnt/usb/sda1/myplaylist` changes the display mode to Playlist and plays the list at a location specified in the URI.

6

Configuring TV Control

This chapter contains the following information:

- Using the Serial Control Interface
- Using the Consumer Electronics Control (CEC) Interface

You can control some functions of compatible TVs using the AvediaPlayer Receiver Serial Control Interface (additional cable required) or using the Consumer Electronics Control (CEC) facility over the HDMI interface.

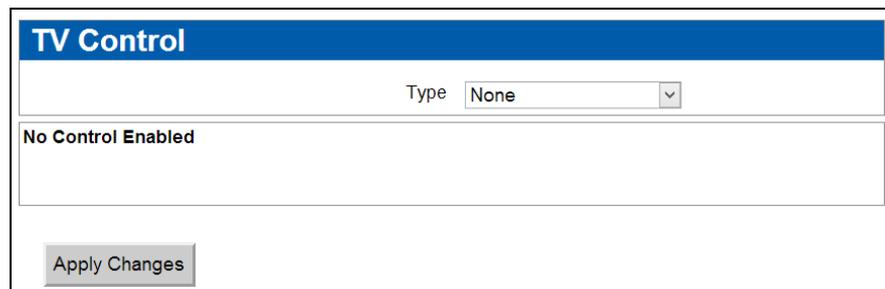
This enables the use of a single Remote Control handset to control both AvediaPlayer Receiver and TV functions. Control of both AvediaPlayer Receiver and TVs over the IP network also allows system administrators to manage receiver/display combinations.

Using the Serial Control Interface

You can configure the receiver to communicate with the attached TV/Display over the Serial TV interface. You can specify that it should send commands to the TV on entering and exiting standby mode (whether via Remote Control handset or management interface), thus powering on/off the TV as appropriate. An additional cable is required to connect the AvediaPlayer Receiver Serial port (RJ45 connector) to the TV control port. Connection details are described in Appendix D, "Serial TV Interface Connection".

In order to use this feature, contact your Exterity supplier to obtain a serial configuration file for your TV (a list of supported TV types is also available from your supplier).

Note: When the TV/ADM port is configured for use with a TV serial interface it cannot be used to access the Admin Interface.



TV Control	
Type	None
No Control Enabled	
<input type="button" value="Apply Changes"/>	

Figure 21 TV Control web page

Serial pass-through mode is also available. This enables the administrator to communicate directly with the attached TV. Refer to Appendix D, "Serial TV Interface Connection" for details on how to use this feature.

To enable the feature, first download the appropriate configuration file to the AvediaPlayer Receiver. You can then use the receiver web interface to test sending serial commands to the TV and configure the particular actions to be taken on entering and leaving standby mode.

To enable serial TV control:

- 1 Click TV to display the page as shown in Figure 21.
- 2 Select Serial from the Type drop-down list.
- 3 The Serial Out section is displayed:

The screenshot shows a web interface for TV Control. At the top, there is a blue header with the text 'TV Control'. Below this, a 'Type' dropdown menu is set to 'Serial'. Underneath is another blue header labeled 'Serial Out'. This section contains a 'Configuration File' text input field, an 'Actions' dropdown menu currently showing 'Choose action', and a 'Send' button. Below the 'Serial Out' section is a sub-section titled 'Power On/Off Actions' which includes two text input fields: 'Power Off' and 'Power On'. At the bottom of the form is an 'Apply Changes' button.

Figure 22 TV Control web page - serial selected

Note: To return the TV/ADM port to the default admin mode, select the TV page and None from the TV Control Type drop-down list. You must reboot the device for this change to take effect.

If you cannot access the web interface, you can use the rear panel RESET button to set the serial port to TV serial control mode. Please see "Using the Reset Button" on page 62 for more information.

To download a serial configuration file to the receiver:

- 1 As the receiver uses TFTP to download new config files from a TFTP server, first ensure that the correct TFTP server IP address is specified on the Maintenance page, and that the TFTP server is running.
- 2 Save the configuration file in the base directory of the TFTP server.
- 3 Click TV to display the TV Control page as shown in Figure 21.
- 4 Ensure that Serial is selected in the Type drop-down list.
- 5 In the Serial Out section, enter the name of the configuration file in the Configuration File field.
- 6 Click Apply Changes. The new configuration file is downloaded automatically from the TFTP server.
- 7 Reload the TV page and click the Actions drop-down list to confirm it is populated, confirming the configuration file has been successfully downloaded.

To test serial TV control:

- 1 Click TV to display the TV Control page as shown in Figure 21.
- 2 Select a command from the Actions drop-down list.
- 3 Click Send.
- 4 Verify that the expected action has taken place on the TV.

To configure actions to take on entering/exiting standby mode:

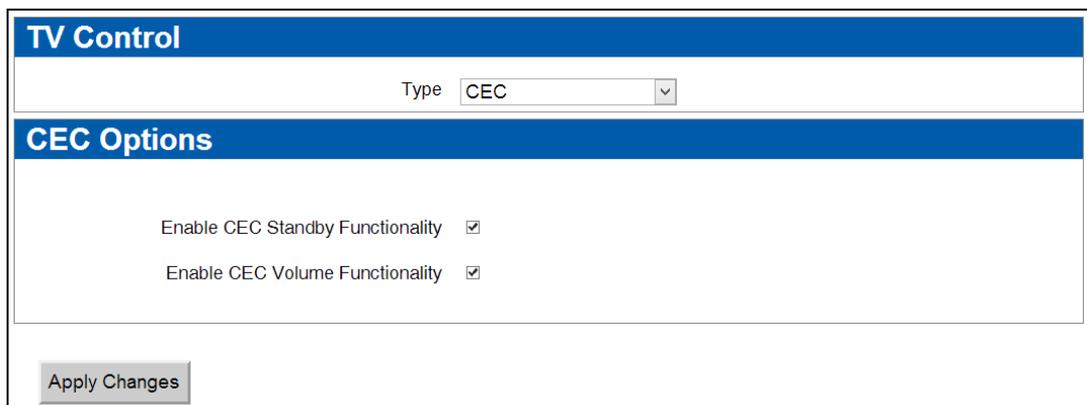
- 1 Click TV to display the TV Control page as shown in Figure 21.
- 2 Enter the appropriate actions in the Power On Actions and Power Off Actions fields. These should be commands as shown in the Test Serial Out drop-down. Multiple commands must be separated with a semicolon (;). If a delay is required between commands, use "sleep" followed by a value in seconds, for example, "tv_on;sleep 2;tv_mute_on".
- 3 Click Apply Changes.

Using the Consumer Electronics Control (CEC) Interface

You can control a limited range of TVs (certain Sony, Toshiba and Philips models) using CEC over the HDMI interface. Using CEC, the on/standby state and volume level can be controlled without additional cabling between the AvediaPlayer Receiver and the TV. When configured, the Exterity Remote Control handset controls volume on the TV, and the On/Standby functions of both the TV and the AvediaPlayer Receiver.

To enable CEC TV control:

- 1 Click TV to display the page as shown in Figure 23.
- 2 Select CEC from the Type drop-down list. The CEC Options section is displayed:



The screenshot shows the 'TV Control' interface. At the top, there is a blue header with the text 'TV Control'. Below this, there is a 'Type' dropdown menu with 'CEC' selected. Underneath the dropdown is a section titled 'CEC Options' with a blue header. This section contains two checkboxes: 'Enable CEC Standby Functionality' and 'Enable CEC Volume Functionality', both of which are checked. At the bottom of the interface is a button labeled 'Apply Changes'.

Figure 23 CEC options

- 3 Click the CEC Options checkboxes for the required control functions.
- 4 Click Apply Changes.

When configured, the AvediaPlayer Receiver and TV behave as follows:

- **Standby** – When switching to standby mode, the receiver sends a CEC standby message to the connected TV before disabling the HDMI connection and entering standby mode. When returning from standby the AvediaPlayer Receiver enables the HDMI connection before sending the 'on' command to the TV.
- **Volume** – The remote handset volume controls are applied to the TV.

Note: When the CEC Volume option is selected, volume can only be changed using the remote control, not on the Receiver Properties page. However, if you select Mute Audio on the Receiver Properties page, or press Mute on the handset, this is applied only to the receiver, not to the TV.

7

Configuring Remote Control Handsets

This chapter contains the following information:

- Exterity Remote Control Handsets
- Configuring General Settings

AvediaPlayer r92xx receivers can be controlled by Exterity Remote Control handsets.

The Remote page allows you to enable/disable remote control of the receiver and to specify the use of a different handset to control the receiver by specifying the appropriate configuration file. If you wish to use a different handset, consult a systems integrator to obtain a configuration file for that handset.

The screenshot displays a web-based configuration interface for remote control settings. It is divided into two main sections: 'General' and 'Button Functions'. The 'General' section includes three settings: 'Enable Handset' set to 'Yes', 'Receive Handset Type' set to 'exterity_remote_2', and 'Send button presses to AV source' set to 'Never'. The 'Button Functions' section includes three settings: 'TV' set to 'AV', 'Home' set to 'Browser', and 'Guide' set to 'EPG'. An 'Apply Changes' button is located at the bottom left of the interface.

General	
Enable Handset	Yes
Receive Handset Type	exterity_remote_2
Send button presses to AV source	Never

Button Functions	
TV	AV
Home	Browser
Guide	EPG

Apply Changes

Figure 24 Remote page

Exterity Remote Control Handsets



Exterity Remote Handset V3



Exterity Remote Handset V4



Exterity Programmable Remote Handset V5

Configuring General Settings

The General section of the page allows you to specify the use and type of the Remote Control handset.

Enabling/Disabling Remote Control Handset Operation

In some installations, for example, digital signage, you may want to completely disable control of the AvediaPlayer Receiver from the Remote Control handset.

To enable/disable handset control of the AvediaPlayer Receiver:

- 1 Click Remote to display the page as shown in Figure 24.
- 2 Select Yes to enable the handset, or No to disable the handset from the Enable Handset drop-down list.
- 3 Click Apply Changes.

Uploading a Customised Remote Control Handset File

Customised Remote Control handset files, for example for the use of Teletext on Exterity Remote Handsets V3 and V4, can be set up for use on the AvediaPlayer Receiver using the same TFTP process used for configuration and firmware uploads.

Note: If you need to create a customised Remote Control Handset configuration file, please ask your Exterity representative for *Knowledgebase Article KB000159 "Creating an IR Config File"*.

To update or use a different remote control handset:

- 1 The receiver uses TFTP to download new remote control config files from a TFTP server. First ensure that the correct TFTP server IP address is specified on the Maintenance page, and that the TFTP server is running.
- 2 Save the configuration file in the following directory on the TFTP server.

```
<root>/remotes/<manufacturer>/<type>/<manufacturer>_<type>_<id>.conf
```

For example:

```
<root>/remotes/sony/dvd/sony_conf
```

- 3 Click Remote to display the page as shown in Figure 24.
- 4 Enter the name of the configuration file in the Receiver Handset Type field.
- 5 Click Apply Changes.

The new configuration file is downloaded automatically from the TFTP server. You can confirm the successful download by opening the log file as described in "Setting Up Logging" on page 65 and checking for completed TFTP activity.

Enabling Remote AV Device Control

In addition to controlling on-screen menus, you can use the remote control handset to control an AV device attached to an Exterity encoder.

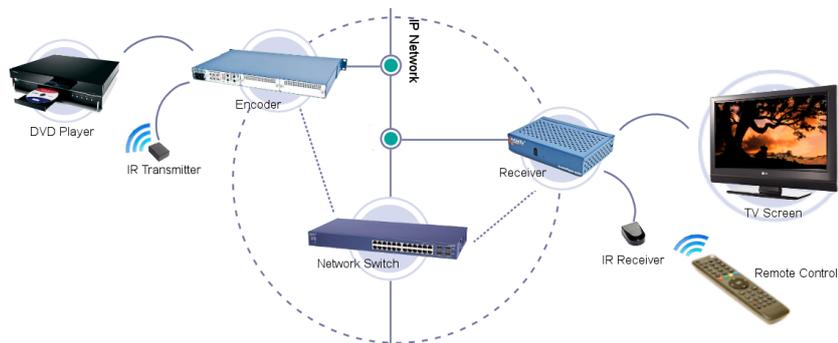


Figure 25 How remote AV device control works

Note: Please ensure that the encoder you are using is able to accept remote IR connections, and that it is set up with the appropriate IR configuration file, to allow it to send IR commands to the attached device.

To enable permanent remote AV device control:

- 1 Click Remote to display the page as shown in Figure 24.
- 2 Select Always from the Send button presses to AV source drop-down list.
- 3 Click Apply Changes.

When this mode is selected, every button press on the remote control applies to the AV device connected to the encoder. The remote control provides no access to streams on the receiver; you can however access some settings on the local receiver, by pressing the MODE button on the remote control. This button provides access to the following:

- **Language** - Select the language that the menu items appear in, (not the audio track).
- **Audio** - Select an audio track, if there is more than one.
- **Subtitles** - Turn subtitles on or off and select a subtitle track if there is one.
- **Display** - Displays the current TV resolution.
- **Network** - Displays IP address/network mask/gateway information.
- **Remote Mode** - Displays the current mode (AV source).
- **Device Info** - Displays information, such as software version.

To disable remote AV device control:

- 1 Click Remote to display the page as shown in Figure 24.
- 2 Select Never from the Send button presses to AV source drop-down list.
- 3 Click Apply Changes.

When this mode is selected, remote control commands apply only to the receiver, never to the AV device connected to the encoder.

To enable manual remote AV device control:

- 1 Click Remote to display the page as shown in Figure 24.
- 2 Click the Send button presses to AV source drop-down list to select Manual.
- 3 In the Manual Mode field, select Normal or AV Source:
 - When Normal is selected, every button press on the remote control applies to the local receiver.
 - When AV Source is selected, every button press on the remote control applies to the AV device connected to the encoder.

The AV source field displays the IP address of the encoder.

- 4 Click Apply Changes.

Note: When in Manual>AV Source mode, press the Mode button on the remote control to access local settings as listed above. In this mode however, pressing Remote Mode allows you to change between Normal and AV Source modes.

Specifying Button Functions

The default operation of the following buttons is as follows:

- **TV:** Audio/Video
- **Home:** Browser
- **Guide:** EPG (if available)

The functions of all these buttons can be redefined if required. For example, disable use of the HOME button to stop users using the web browser.

To redefine button functions:

- 1 Click Remote to display the page as shown in Figure 24.
- 2 In the Button Functions section, select and choose the required functions from the drop-down list for the associated button.
- 3 Click Apply Changes.

8

Using Remote Controls

This section describes the functionality of Exterity remote controls when in AV mode. It contains the following information:

- Viewing Channels
- Standby
- Selecting Language for On-screen Menus and Audio Track
- Viewing Decoded Teletext
- Using the Web Browser

Viewing Channels

The channels list is built at startup when Channel Learning is enabled by listening to Session Announcement Protocol (SAP) announcements from head-end devices, by uploading an XML channel list, or by specifying static channels as described in the *Exterity Knowledge Base article KB00029*.

- **Channel +/-** : Press the channel +/- to step up or down to the next available TV or radio channel – the channel names are shown in the upper right of the display.



Figure 26 Channel name

- **▲/▼ buttons**: Press the ▲/▼ buttons to step up or down to the next available TV or radio channel with the channel names displayed in the lower left of the display while selecting – the channel name is shown in the upper right of the display on selection as above.



Figure 27 Stepping up and down between channels

- **0-9 Keys:** Directly enter the number of a known channel using the number keys – the entered numbers are shown in the upper left of the display, and the channel name shown in the upper right.



Figure 28 Entering channel numbers directly

Note: When entering channel numbers directly, the values are reset if there are no valid channels in the range. For example, if there are no channel numbers in the range 120-129, the entered value is reset if you press 1, 2, followed by any other value.

Standby

To put the receiver into standby, press the STANDBY button on the remote control. This turns off all audio/video outputs to the television or display. Press STANDBY again to turn the audio/video outputs back on and resume playing the last viewed channel.

The system administrator can specify different startup modes; refer to “Setting the Startup Mode” on page 36 for more information. Please note that the STANDBY button works in all modes.

Note: You can also configure the Exterity Remote Control handset V5 to control the TV Standby function. Refer to the *AvediaPlayer Receiver Remote Control Handset Administrator's Guide* for more information.

Selecting Language for On-screen Menus and Audio Track

You can select the language used for the on-screen menus and where available, the audio track. The receiver is shipped with English (UK), French, and German language texts installed. You can add more languages to the available selection by using the processes described in the *Exterity Knowledge Base article KB00030*.

Choosing the On-screen Menu Language

To choose the on-screen menu language using the remote control:

- 1 Press TV.
- 2 Either:
 - Press the MENU button on the receiver remote control and use the ▲/▼ buttons to highlight Settings.
 - Press the OK or right arrow button.
 - Use the ▲/▼ buttons to highlight Language.
 or:
 - Press the MODE button on the receiver remote control
- 3 Press OK to display the currently configured language.



Figure 29 Selecting the on-screen menu language

- 4 Press OK again to display the language choice.
- 5 Use the ▲/▼ buttons to select the required language and press OK.
- 6 Use the left arrow button to close the menu.

Selecting the Audio Track

To choose the audio language using the remote control:

- 1 Display the Audio menu using the AUDIO button on the receiver remote control. The current audio track is displayed.
- 2 Press the right arrow or OK button to display the available audio tracks and use the ▲/▼ buttons to choose the required language.



Figure 30 Choosing the audio language

- 3 Press OK to choose the highlighted language.
- 4 Use the left arrow button to close the language menu.

Enabling Subtitles/Captions

To enable subtitles/captions using the remote control:

- 1 Display the subtitle/caption menu by pressing the SUBT button on the remote control. The current status is displayed.
- 2 Press the right arrow button and use the ▲/▼ buttons to enable/disable and press OK.



Figure 31 Enabling/disabling subtitles

- 3 Select the required track using the ▲/▼ buttons and press OK.
- 4 Use the left arrow button to close the menu.

Viewing Decoded Teletext

You can view Teletext pages when they form part of the selected channel.

Note: If the channel does not contain Teletext data, the message **No Teletext Detected** is displayed. Press the TV button and select another channel.

The following procedure requires the Exterity Remote Handset V5. To use Exterity V3 and V4 Handsets requires a customised Teletext remote Config file. Contact your Exterity representative for details.

To use decoded Teletext:

- 1 Select a channel known to carry Teletext data.
- 2 Press the TEXT button. The Teletext banner is displayed while the Teletext pages are loaded, and the Teletext index page is displayed:



Figure 32 Example Teletext page

- 3 Enter the required page using the number keys or the Green/Red/Blue buttons if fast links are displayed. Page up or down using the Channel +/- buttons.
- 4 Use the OK button to zoom to the upper and lower halves of the pages if needed.
- 5 Use Up/Down buttons to step up or down page numbers.
- 6 Use Left/Right arrows to manually step through subpages. Pressing the Stop button pauses/resumes automatic sub page changing. You can continue to step through sub pages even when no more are available. The last viewed page remains displayed and you can step back through the previously viewed pages using the Left arrow button.
- 7 Press TV to exit Teletext and return to the channel program content.

Using the Web Browser

If configured, you can use the browser to view content on your television or display. You can control how pages are displayed using the web management interface, as described in [Configuring Web Services](#). For example, you can define a home page to display when the browser opens, and you can specify whether or not pages display with a menu bar.

- To go to the home page, press the HOME button.
- To return to the home page, press the HOME button.
- To navigate between links (if available), use the up/down/left/right buttons.
- To select a link, press the OK button.

9

Using the Browser

This chapter contains the following information:

- Configuring Web Services
- Specifying a Homepage
- Configuring Proxy Servers
- Configuring an SNMP Trap Manager

AvediaPlayer Receivers are network devices and can therefore make use of services available on your network. You can use this to:

- Provide an enhanced User Interface via the AvediaServer Portal or third party middleware.
- Display custom web pages for simple digital signage.

Configuring Web Services

The Web Services page contains four sections: Browser, EPG, Proxy Settings, and SNMP Settings enabling you to configure the address of the browser homepage, the address of an EPG server, the use of a web proxy server and the SNMP Trap Manager.

The screenshot shows a web configuration interface with four main sections, each with a blue header bar:

- Browser:** Contains a text input for 'Homepage' with the value '10.8.100.153/portal' and a dropdown for 'Show Toolbar' set to 'Off'.
- EPG:** Contains a text input for 'Server Address' with the value '0.0.0.0'.
- Proxy Settings:** Contains a dropdown for 'Proxy Settings' set to 'Direct Connection'.
- SNMP Settings:** Contains a text input for 'SNMP Trap Manager' with the value '239.255.255.255'.

At the bottom left of the form is a button labeled 'Apply Changes'.

Figure 33 Web Services web page

Specifying a Homepage

The receiver includes the ANT Galio web browser. Use the options described in this section to control the web browsing feature. For example, you can define a home page that is displayed each time the browser is accessed and enable or disable the display of the browser toolbar. This may be a corporate homepage, an intranet page or a portal.

Note: When configuring the receiver to be used with a portal such as the AvediaServer, specify its URI as the homepage. For example, to use the AvediaServer portal and its functions set the homepage as follows: `http://<server IP address>/portal`

To view the browser on a television or display, press the HOME button on the remote control. Alternatively, you can use the web interface or the AvediaServer Director application to put the receiver into Web Browser mode.



Figure 34 AvediaServer portal interface

To set a browser home page:

- 1 Click Web Services to display the page as shown in Figure 33.
- 2 Enter the URL of the web page you want to configure as the homepage location into the Homepage field. For example:
 - `http://<ipaddress>/portal` – a local AvediaServer Portal
 - `http://www.myfavouritepage.com` – an internal/external webpage

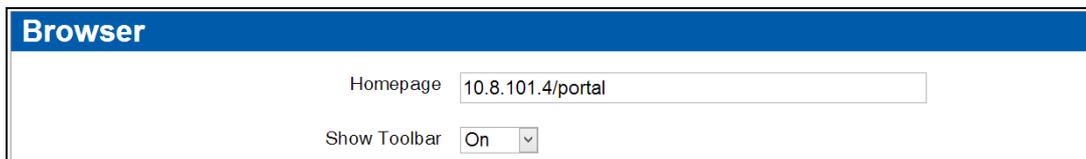


Figure 35 Setting the browser home page

- 3 Select On or Off as required from the Show Toolbar drop-down list. The default value is Off. When On, the ANT Galio toolbar is displayed at the top of the screen as shown in Figure 36.
- 4 Click Apply Changes.



Figure 36 Toolbar enabled

Specifying an EPG

This section describes how to configure the receiver for interoperation with the Exterity AvediaServer Electronic Program Guide (EPG) application.

Note: This section applies only if your version of AvediaServer is earlier than version 4.0.0. From version 4.0.0 onwards, the EPG is configured using the AvediaServer Portal.

The EPG application provides a web page which the receiver can access. This is displayed on the connected television or display and allows you to browse and select from the available programs. To use the AvediaServer EPG generator set the EPG as follows:

`http://<server IP address>/epg`

To view the EPG on a television or display, press the GUIDE button on the remote control.

To configure the EPG server address:

- 1 Click Web Services to display the page as shown in Figure 33.
- 2 Enter the URL of the EPG server into the EPG Server Address field.
- 3 Click Apply Changes.

Configuring Proxy Servers

You can configure the receiver to use a direct connection to the internet or you can specify a proxy server to be used instead. If you use a proxy server for a general internet connection, but still want to use a direct connection for particular sites, you can specify exceptions. These sites can then be accessed by the browser without using the proxy server.

To use a direct connection to the internet:

- 1 Click Web Services to display the page as shown in Figure 33.
- 2 Select Direct Connection from the Proxy Settings drop-down list.
- 3 Click Apply Changes.

To use a proxy server:

- 1 Click Web Services to display the page as shown in Figure 33.
- 2 Select Manual Proxy from the Proxy Settings drop-down list.

The screenshot shows the 'Proxy Settings' configuration interface. At the top, there is a blue header with the text 'Proxy Settings'. Below this, the 'Proxy Settings' dropdown menu is set to 'Manual Proxy'. The 'Proxy Address' field contains the text 'my server', and the port field contains '8080'. Under the 'Ignore Domains' section, there are two entries: 'address1' and 'address2', each with a checked checkbox. Below these, there is a 'New Address' field with an unchecked checkbox.

Figure 37 Using a proxy server

- 3 Enter the IP address and port (address:port) of the proxy server into the Proxy Address fields.
- 4 In the Ignore Domains field, enter the address where a direct connection is to be used and click the check box. Repeat this process to add additional direct connection addresses as required. You can change a direct connection to a proxy connection by clicking the associated checkbox to remove the tick mark.
- 5 Click Apply Changes.

Configuring an SNMP Trap Manager

For information on configuring an SNMP Trap Manager, please see page 30.

10 Using Secure Mode

This chapter details Secure Mode and contains the following information:

- Overview
- Entering/Exiting Secure Mode
- Passwords
- Exporting/Importing Configuration
- Resetting the Receiver to Factory Defaults
- Enabling/Disabling Parts of Secure Mode

Overview

AvediaPlayer Receivers have a Secure Mode feature which allows them to comply with content protection requirements from some broadcasters, such as Canal+ in France.

Caution: Please be aware that when receivers are in Secure Mode, they can no longer be accessed using the AvediaServer Director application (or any third-party SNMP management tool), and any configuration must be carried out individually on each unit.

AvediaPlayer Receivers can be run in either Normal or Secure Mode. The differences are as follows:

Table 3

Function	Normal Mode	Secure Mode
SNMP*	On	Off
USB storage†	On	Off
Web Interface†	On	Off
Reset button†	Factory reset	Disabled
	Power cycle	Enabled
	TV control/serial mode	Enabled
Telnet	Enabled for admin/ctrl login	Disabled
SSH	Enabled for admin/ctrl login	Enabled for admin/ctrl login
Passwords	Weak passwords allowed	Strict passwords only

* Because SNMP is disabled in Secure Mode, please note that the AvediaServer Director application cannot be used to manage the receiver.

† These functions can be re-enabled once in Secure Mode, if required. Please see “Enabling/Disabling Parts of Secure Mode” on page 58.

Entering/Exiting Secure Mode

To enter or exit Secure Mode, use the Admin Interface, or the Terminal Command Interface.

Using the Admin Interface

To enter Secure Mode:

- 1 Log into the Admin Interface.
- 2 Choose option 6 to open a shell.
- 3 At the shell prompt, enter:


```
configwrite securitySetting strict
```

To exit Secure Mode:

- 1 Log into the Admin Interface
- 2 Choose option 6 to open a shell.
- 3 At the shell prompt, enter:


```
configwrite securitySetting normal
```
- 4 Reboot the AvediaPlayer Receiver.

Using the Terminal Command Interface (TCI)

For details on using the Terminal Command Interface, please refer to the *Exterity Receiver Developer's Guide*.

To enter Secure Mode, enter the following on the TCI:

```
^set:securitySetting:strict!
```

To exit Secure Mode, enter the following on the TCI:

```
^set:securitySetting:normal!
```

When returning to Normal Mode, reboot the AvediaPlayer Receiver.

Passwords

Normal Mode

In Normal Mode, the default username and password are as follows:

```
admin/ctrl
labrador
```

Secure Mode

In Secure Mode, the admin and ctrl passwords remain the same as in Normal Mode until changed. The default values are:

```
admin/ctrl
labrador
```

Caution: To comply with the content protection requirements of Canal+, the system administrator must change the Secure Mode password immediately, and then at least once a month thereafter.

Changing the Password

Normal Mode

To change the password in Normal Mode, use the Web Interface Authentication page:

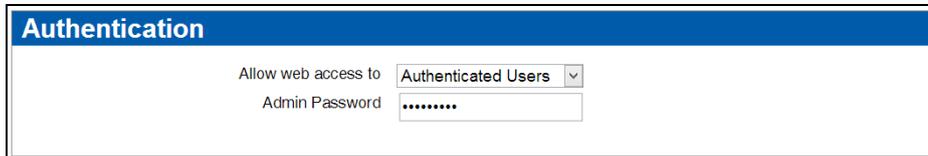


Figure 38 Changing the password in normal mode

Secure Mode

To change the password in Secure Mode, you must use the Admin interface, or the TCI.

Using the Admin Interface

To change the password:

- 1 Log into the Admin Interface
- 2 Choose option 5.

Using the TCI

To change the password, enter the following on the Terminal Command Interface:

```
^set:adminPassword:<password>!
```

Caution: Make sure you keep a note of the password. If you lose the password when a receiver is in secure mode, the unit cannot be recovered.

Password Requirements

Passwords for Secure Mode (admin/ctrl) must comply with the following requirements:

- The password must contain:
 - at least 10 characters
 - at least one digit
 - at least one upper case letter
 - at least one lower case letter
- The password cannot be:
 - the same as the user name or receiver name
 - the user name or receiver name reversed
 - a substring of the user or receiver name
 - a capitalised version of the user or receiver name
 - a doubled version of the user or receiver name (for example, adminadmin)

Exporting/Importing Configuration

You can copy the configuration from one receiver to others by exporting the configuration from the initial receiver, then importing it onto other devices.

Exporting Configuration

To export configuration when in Secure Mode, you use the Admin Interface or the TCI.

Using the Admin Interface

- 1 Log in as admin.
- 2 Choose option 6 to open a shell.
- 3 Enter `configwrite exportConfig <filename>`.

Using the TCI

- 1 Log in as ctrl.
- 2 Enter the following on the TCI:
`^set:exportConfig:<filename>!`

Importing Configuration

Using the Admin Interface

To import configuration to a single device:

- 1 Log in as admin.
- 2 Choose option 6 to open a shell.
- 3 Enter `configwrite importConfig <filename>`.

Using the TCI

To import configuration to a single device:

- 1 Log in as ctrl.
- 2 Enter the following on the TCI:
`^set:importConfig:<filename>!`

Using AvediaServer Director

You can use the Director application to import configuration to one or multiple devices. Please see "Exporting and Importing AvediaPlayer Receiver Configuration" on page 63 for details.

Caution: Please be aware that once receivers are in Secure Mode, they can no longer be accessed using the Director application, and all configuration must be carried out individually on each unit.

Resetting the Receiver to Factory Defaults

In Normal Mode, you can use the Web Interface, Admin Interface, TCI or the reset button to reset the receiver to factory defaults. Please see "Returning to Factory Default Settings" on page 63 for details.

To reset the receiver when in Secure Mode, you can only use the Admin Interface or TCI commands (as in Normal Mode).

Caution: Once the receiver has been reset to factory defaults, it is no longer in Secure Mode.

Enabling/Disabling Parts of Secure Mode

Certain functionality is unavailable by default in Secure Mode, as shown in Table 3. This section details this functionality, and explains how to re-enable it once in Secure Mode using the Admin Interface or the Terminal Control Interface.

Caution: Please note that if you re-enable any of this functionality, the receiver no longer complies with the content protection requirements stipulated by Canal+.

Enabling/Disabling the Factory Defaults Reset Button

To enable or disable the factory defaults button on the back of the device when in Secure Mode enter the following:

Using the Admin Interface

To enable: `configwrite factoryResetButton on`
 To disable: `configwrite factoryResetButton off`

Using the TCI

To enable: `^set:factoryResetButton:<on>!`
 To disable: `^set:factoryResetButton:<off>!`

Note: Power cycling and changing between TV control and serial mode is available in Secure Mode.

Enabling/Disabling USB Storage Access

In Normal Mode, USB storage devices are automatically mounted when connected. In Secure Mode, you must enable mounting to use USB storage devices.

To enable or disable storage device mounting in Secure Mode, enter the following:

Using the Admin Interface

To enable: `configwrite USBStorageAccess on`
 To disable: `configwrite USBStorageAccess off`

Using the TCI

To enable: `^set:USBStorageAccess:<on>!`
 To disable: `^set:USBStorageAccess:<off>!`

Enabling/Disabling the Web Admin Interface

By default, the Web Admin Interface is not available when the device is in Secure Mode. To enable or disable the Web Admin Interface, enter the following:

Using the Admin Interface

To enable: `configwrite webAccess on`
 To disable: `configwrite webAccess off`

Using the TCI

To enable: `^set:webAccess:<on>!`
 To disable: `^set:webAccess:<off>!`

11

Using External Storage Devices

This chapter contains the following information:

- Adding a USB Storage Device
- Using a USB Storage Device
- Adding an NFS Location

To extend access to stored content you can configure a variety of network connected (NFS) or locally connected (USB) sources of content.

Adding a USB Storage Device

USB storage devices are automatically mounted when connected (and listed under Local Mount Points when the Mounting page is refreshed). USB storage devices must be formatted using the FAT32 filing system.

Configuring a USB Mount Point

To configure a USB mount point:

- 1 Format the USB storage device on an external device to the FAT 32 standard.
- 2 Connect the USB storage device to the r92xx USB port.
- 3 Click Mounting to display the page as shown in Figure 39. If the Mounting page is already displayed, you may need to refresh your browser to update the mount status.
- 4 When complete, the USB device is listed in the Local Mount Points:

Local Mount Points		
Vendor	Device Name	Mount Point
	/dev/sda1	/mnt/usb/sda1

Figure 39 USB mount points

Checking Storage Device Status

To check the status of the storage device:

- 1 Click Mounting to display the page as shown in Figure 39.
- 2 The size and utilisation of the storage device are reported in the Flash field.
- 3 If valid size is not reported, a storage device is not attached.

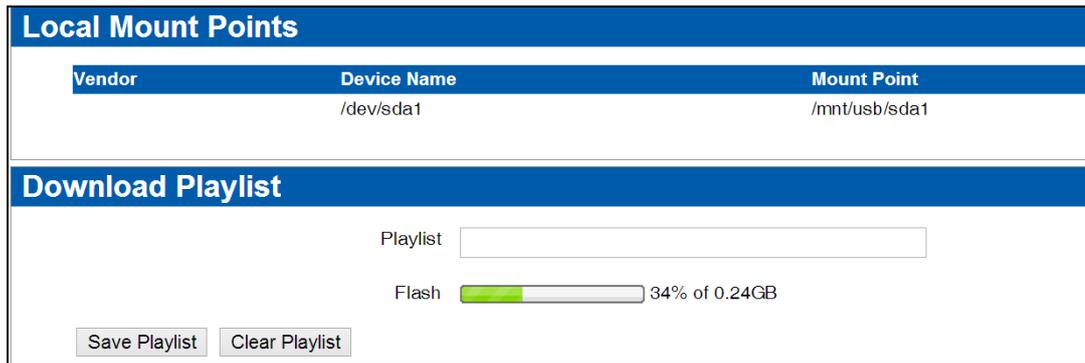


Figure 40 USB storage device content

Using a USB Storage Device

There are three ways in which you can use a storage device to extend access to stored content.

- Pre-load the storage device with required content *before* connecting to the receiver.
- Mount the storage device on the receiver, then download a playlist and its media files to the storage device from an external server.
- Use an FTP client to 'push' content onto the device.

Pre-loading the Storage Device

To use content from a pre-loaded storage device:

- 1 Copy the required content to the storage device.
- 2 Attach the storage device to the receiver's USB port.
- 3 Click Display.
- 4 In the URLs section, enter the path to the playlist in the format detailed in Appendix A, "Playlist Format".
- 5 In the Display section, select Playlist from the Current Mode drop-down list.
- 6 Click Apply Changes.

Downloading a Playlist from an External Server

Caution: All contents of the storage device are removed when you click Download Playlist. We recommend that you back up any content you want to keep before downloading a playlist.

To download a playlist and content to the USB storage device:

- 1 Attach the storage device to the receiver's USB port.
- 2 Click Mounting to display the page as shown in Figure 39.
- 3 In the Download Playlist section, enter the path to the playlist in the format detailed in Appendix A, "Playlist Format".

Note: The final line of the playlist file must always contain a blank line (carriage return).

- 4 Click the Save Playlist button.

The playlist and its content are downloaded to the USB storage device and can be used for failover or as current content. All current content on the storage device is overwritten.

Refer to Chapter 12, "Channel Redundancy and Failover" and "Playing a Playlist" on page 37 for more information.

Downloading a Playlist using FTP

To download to the USB storage device using FTP:

- 1 Ensure a local mount point has been created and the storage device is connected.
- 2 Click Mounting and make a note of the Mount Point listed in the Local USB Mount Points table. (/mnt/usb/sda1 in Figure 39).
- 3 Open your FTP client and connect to the AvediaPlayer Receiver, entering its IP address and control credentials (ctrl/labrador).
- 4 Confirm the connection has been made and the mount point path is displayed.
- 5 Navigate the local directories to locate and transfer the file(s) required.

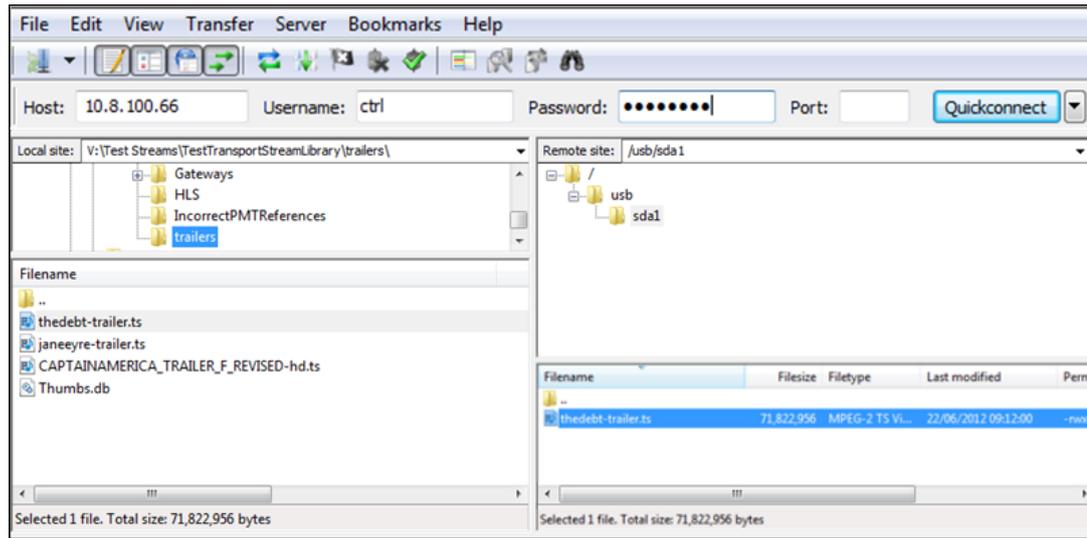


Figure 41 Downloading using FTP

The file can now be played directly or used as part of the failover mechanism.

Note: The anonymous ftp login to the AvediaPlayer provides read only access to the mounted storage device.

Deleting a Playlist from a Storage Device

To delete all content from the storage device:

- 1 Click Mounting to display the mounted storage devices.
- 2 In the Download Playlist section, click the Clear Playlist button.

Caution: All contents of the storage device are removed when you click Clear Playlist. We recommend that you back up any content you want to keep before deleting a playlist.

Adding an NFS Location

An NFS (Network File System) location allows you to access content stored on another network device. You must specify the directory on the network device where the content is stored, and a local directory on the receiver which acts as a mirror to the remote directory.

To configure a remote storage NFS mount point:

- 1 Click Mounting to display the Mounting page.
- 2 Enter the IP address of the remote host, the remote directory path, and the local directory into the respective Add New NFS Mount Point fields.

Note: The default local directory is /mnt. When specifying the local directory, please note that the receiver allows only one level of subdirectory, for example, /mnt/playlists. If you create more than one level, for example, /mnt/playlists/new, the receiver merges this to /mnt/playlistsnew.

- Click Mount to start the mounting process. When successfully mounted, the new mount point is listed in the Existing NFS Mount Points list:

Add New NFS Mount Point			
Remote Host Addr	Remote Dir	Local Dir	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Mount"/>

NFS Mount Points			
Remote Host Addr	Remote Dir	Local Dir	Connection Status
10.8.64.264	//home/media	/mnt/mntmedia	 <input type="button" value="UnMount"/>

Figure 42 Adding a new NFS mount point

A green indicator is displayed when the mounting process has successfully completed.

- To remove the connection, click the UnMount button.

12 Channel Redundancy and Failover

The AvediaPlayer Receiver has two mechanisms to ensure content is always displayed if the channel being played fails.

- **Channel Redundancy** – this mechanism checks for availability of another channel of the same name and group membership as the channel which has failed, and is available in all modes.
- **Failover** – this mechanism involves playing another channel, playing back video file(s) from a mounted storage device, or launching a page to display in the browser.

Note: Failover is only available in AV mode.

Channel Redundancy

Channel redundancy requires an available duplicate channel with the same name and group membership as the original channel. When multiple identical channels exist, each is tried in turn until one is successfully played. If all attempts to play the redundant channel(s) fail, the receiver initiates the failover mechanism (if it is enabled). Refer to the Exterity Gateway, Encoder and AvediaServer documentation for more information about stream naming and group membership. Channel Redundancy is independent of failover configuration.

Note: Redundant (duplicate) channel numbers/names are not displayed on the connected TV/Display.

Failover

Failover allows you to configure the receiver to respond to the loss of the currently playing channel. When the failed stream returns (on the original address) the receiver automatically switches back to it (if no other channel has been manually selected). No operator intervention is required.

Configuring Failover

You can configure the following responses:

- Play media using either another network streamed channel, or a media file (in transport stream format) located on a local or remote storage device (refer to Chapter 11, "Using External Storage Devices").
- Play a playlist saved to a local storage device, or from a remote location (Chapter 11, "Using External Storage Devices").
- Display a web page using the receiver's browser. (Include a stream playing with a browser video object if required.)

Note: If one or more redundant channels have been configured, the receiver will attempt to play these first, only initiating the failover mechanism if the redundant channel(s) also fail.

To fail over to media:

- 1 Click Maintenance to display the page as shown in Figure 44.
- 2 In the Fail Over section, select Enabled from the State drop-down list.
- 3 Select Media from the Backup Channel drop-down list.

The screenshot shows a configuration window titled "Fail Over". It contains three main settings:

- State:** A dropdown menu currently showing "Enabled".
- Backup Channel:** A dropdown menu currently showing "Browser".
- URL:** A dropdown menu currently showing "Playlist", with a text input field to its right.

Figure 43 Media failover setup

- 4 Enter the URL of the media in the form:
 - Multicast stream (UDP or RTP), for example: `udp://239.192.0.72:5000`
 - Source Specific Multicast stream (UDP or RTP), for example: `udp://10.8.100.3@239.192.72:5000`
 - On Demand playback (RTSP), for example: `rtsp://10.8.64.72:8554/football.mpg`
 - File from a mounted storage device, for example: `file:///mnt/usb/sda1/mediafile/topcat.ts`
- 5 Click Apply Changes.

To fail over to a playlist:

- 1 Click Maintenance to display the page as shown in Figure 44.
- 2 In the Fail Over section, select Enabled from the State drop-down list.
- 3 Select Playlist from the Backup Channel drop-down list.
- 4 Enter the URL of the playlist in the form:
 - Playlist from a web server, for example: `http://10.8.64.72:8554/playlist`
 - Playlist from a mounted storage device, for example: `file:///mnt/usb/sda1/mediafile/playlist`
- 5 Click Apply Changes.

To fail over to a web page:

- 1 Click Maintenance to display the page as shown in Figure 44.
- 2 In the Fail Over section, select Enabled from the State drop-down list.
- 3 Select Browser from the Backup Channel drop-down list.
- 4 Enter the URL of the webpage in the form:


```
http://www.myfailoverpage.com
```
- 5 Click Apply Changes.

Troubleshooting Failover

If you have configured failover, and the selected replacement is not available, an error message is displayed to indicate this. Please note that this does not apply in the following circumstances:

- You have selected to fail over to a web page, and this page cannot be found. No error message is displayed.
- You have selected to fail over to a playlist, and there is an error within the playlist. Again, no error message is displayed.

13 Extended AvediaPlayer Features

Additional AvediaPlayer Receiver capabilities are available beyond those available from the web admin interface. These are as follows:

- Adding Static Channels
- Customising the Client User Interface
- Adding More Client Interface Languages and Fonts
- Receiver Development Kit (RDK)

Adding Static Channels

The AvediaPlayer r92xx series receivers also support the use of Static Channels. These can be channels where you want to:

- Include some files held on local/remote storage devices and include them in the channel listing.
- Include content from a source that does not use SAP to announce the presence of the channel.
- Add a channel but hide its listing from the Program Guide.

For more information about the tools and processes required to configure Static Channels refer to the *Exterity Knowledge Base article KB00029*.

Customising the Client User Interface

The graphical, textual and animation features of the Client User Interface are defined by a Cascading Style Sheet (CSS). Elements of the Client User Interface defined in the CSS can be customised as required and re-applied. *Exterity Knowledge Base article KB000306* describes the steps in detail.

You can customise elements such as:

- Colour of highlighted function
- Colour of text
- Level of transparency
- Speed of transition between selections

```
div.ER_Menu_Tag {
  → background-color: rgba(10, 10, 10, 0.7);
  → border-top: 1px solid rgba(200, 200, 200, 0.2);
  → border-right: 1px solid rgba(0, 0, 0, 0.95);
  → border-bottom: 1px solid rgba(0, 0, 0, 0.9);
  → border-left: 1px solid rgba(200, 200, 200, 0.1);
}
div.ER_Menu_Label {
  → background-color: rgba(20, 20, 20, 0.7);
  → border-top: 1px solid rgba(200, 200, 200, 0.2);
  → border-right: 1px solid rgba(0, 0, 0, 0.95);
  → border-bottom: 1px solid rgba(0, 0, 0, 0.9);
  → border-left: 1px solid rgba(200, 200, 200, 0.1);
}
div.ER_Menu_Selected div.ER_Menu_Tag {
```

Figure 44 Part of Client UI CSS

Adding More Client Interface Languages and Fonts

I18n internationalisation has been employed to configure English, French, and German languages for the AvediaPlayer Receiver Client User Interface. You can add additional languages and fonts if required by uploading language files and revised AvediaPlayer configuration files. Exterity Knowledge Base article KB000306 describes the steps in detail.

Note: Large font files (in excess of ~ 1 MB) cannot be stored on the AvediaPlayer Receiver and a mounted USB storage device or configured network share must be used.

```
{
  → "menu": {
  →   → "root": {
  →     → "tv": "TV",
  →     → "radio": "Radio",
  →     → "vod": "VoD",
  →     → "settings": "Settings"
  →   },
  → "settings": {
  →   → "root": {
  →     → "language": "Language",
  →     → "subtitles": "Subtitles",
  →     → "audio": "Audio",
  →     → "radio": "Radio",
  →   }
  → }
```

Figure 45 Part of language configuration file

Receiver Development Kit (RDK)

Additional documentation describing implementation of static channels, customisation and addition of more languages to the displayed client interface, and the use of the RDK (Receiver Development Kit) are available on request from Exterity. Please contact your Exterity sales representative for more information.

The Receiver Development Kit (RDK) enables Exterity partners to create customised solutions using third-party applications such as middleware.

Third-party applications can control the Exterity receiver using one or more of the following:

- The JavaScript API
- The Terminal Control Interface (TCI)
- The Simple Network Management Protocol (SNMP) interface

The JavaScript API gives programmers extensive control of the AvediaPlayer Receiver and also provides a mechanism for sending customised JavaScript events to the integrated browser. JavaScript programmers can also use Exterity extensions to access commonly-used functions such as changing channels, controlling volume, and video fast forwarding.

Contact your Exterity sales representative for availability of the Receiver Development Kit and Managed Information Base.

14 Maintenance

This chapter describes various maintenance tasks. It covers:

- Specifying the TFTP Server Address
- Specifying the SNMP Trap Manager IP Address
- Specifying the Time Server Address
- Restarting the Receiver
- Upgrading Firmware
- Restoring Factory Defaults
- Exporting/Importing Configuration Settings
- Logging

Maintenance tasks are managed from the Maintenance page.

Specifying the TFTP Server Address

The receiver uses TFTP to download new firmware releases, remote control configuration files and splash screens. For this to operate correctly, it must be configured to communicate with the TFTP server.

To specify the TFTP server IP address:

- 1 Click Maintenance.
- 2 Enter the IP address of the TFTP server in the TFTP Server field.
- 3 Click Apply Changes.

Specifying the SNMP Trap Manager IP Address

SNMP traps are mainly used as device discovery messages; they enable Exterity's management applications to discover devices on the network. These traps are always broadcast on the local subnet. They are also transmitted to an additional configurable destination. By default, this is the multicast address 239.255.255.255, but this can be reconfigured to any broadcast, multicast or unicast destination as required.

To set the SNMP trap manager address:

- 1 Click Web Services.
- 2 Enter the required IP address in the SNMP Trap Manager field.
- 3 Click Apply Changes.

Specifying the Time Server Address

Using a Time Server with the Time Zone configuration ensures all devices in your IPTV system are synchronised to the current local time in use. The receiver uses NTP (Network Time Protocol) to maintain accurate time on the device, using the time server specified. This is useful when examining the device log file as each log message has an accurate universal time code (UTC) timestamp.

Note: When DHCP is used and the DHCP server supplies an NTP server address, any NTP servers configured using the Web Management Interface are ignored. If the DHCP server does not supply an NTP server address, the address must be configured.

To specify a time server:

- 1 Click Maintenance.
- 2 Enter the IP address or the host name of the time server in the Time Server field. If already configured, the IP address is displayed.
- 3 Click Apply Changes.

Restarting the Receiver

You can restart the receiver to return it to a known state. All current settings are maintained during a reboot.

To restart the receiver:

- 1 Click Maintenance.
- 2 Select Reboot from the Operation drop-down list.
- 3 Click Apply Changes.

During the reboot process the connected television or display is blanked as the AvediaPlayer restarts and follows the sequence described in the Power On section of the *AvediaPlayer Getting Started Guide*.

Note: You can also restart the receiver by briefly pressing and releasing the RESET button on the rear panel.

Upgrading Firmware

By upgrading firmware regularly, you can ensure that you are always using the most recent version. As the new firmware is uploaded using TFTP, you must first ensure that the receiver is using the correct TFTP server address.

Caution: Do not switch the receiver off while the upgrade process is underway. The process takes several minutes.

Note: If you have upgraded to version 2 from any previous version, you must first reset the device to factory defaults, or manually delete the `/usr/local/etc/httpd.conf` file before logging into the web interface.

To upgrade the receiver to a new version of firmware:

- 1 Click Maintenance.
- 2 Ensure that you have specified the IP address of your TFTP server in the Settings section of the page and that it is running and configured correctly.
- 3 Ensure that the following firmware file is hosted correctly in the root directory of the TFTP server:


```
avediaplayer.bin.enc
```
- 4 Ensure that the Boot Image field shows the file indicated above (or matches the name of the firmware file if this is different).
- 5 Click the Operation drop-down list to select Upgrade Firmware.
- 6 Click Apply Changes.

- 7 The firmware is downloaded from the TFTP server and copied to flash, and the receiver restarted. This process will take several minutes.

You can specify the name of the file you want to use when uploading and installing receiver firmware. This allows you to manage firmware for multiple receiver models and versions by including relevant information in the name of the firmware files held on your server. Specify the required file when performing the upgrade.

Restoring Factory Defaults

You can return the receiver to its factory default configuration using the web management interface as described in the following procedure, or using the rear panel RESET function.

Note: When resetting to factory default settings, all previously saved settings are lost. IP addressing is also returned to DHCP. You can however restore previous settings if you have saved your configuration, as described later in this section.

To restore the factory default settings:

- 1 Click Maintenance.
- 2 Click the Operation drop-down list to select Return to Factory Defaults.
- 3 Click Apply Changes.

During the reboot process the connected television or display is blanked as the AvediaPlayer restarts and follows the sequence described in the Power On section of the AvediaPlayer Getting Started Guide.

Note: You can also return the AvediaPlayer Receiver to factory defaults by pressing and holding RESET, releasing only when the TV and ADM LEDs both flash together.

Exporting/Importing Configuration Settings

Once you have set up the receiver, you can save its configuration settings in a single file. You can use the saved configuration file to restore the settings if required, or replicate identical settings on additional devices. The configuration files are exported and imported using the TFTP process.

Note: Please note that you cannot use configuration settings from version 2.x receivers on version 3.x receivers, and vice versa.

Note: Device naming and IP addressing information is not exported/imported. This means that a configuration file can be imported to multiple units.

To export configuration settings:

- 1 Ensure that the TFTP server is running and is correctly configured (see above).
- 2 Click Maintenance.
- 3 Select Export Configuration from the Operation drop-down list.
- 4 Enter a name for your configuration archive in the Export filename field.

Maintenance	
Operation	Export Configuration
Export File Name	exterity-1c013-config .tar.gz (Download)
Settings	
TFTP Server	194.168.1.28
Time Server	(Current: 10.8.64.15)
Boot Image	avediaplayer.bin.enc

Figure 46 Exporting configuration using TFTP

5 Click Apply Changes.

To export configuration settings using a browser file download function:

- 1 Click Maintenance.
- 2 Click the Operation drop-down list to select Export Configuration.

Note: The file name is <export.tar.gz> and cannot be changed prior to downloading.

- 3 Click the (Download) hyperlink.
- 4 If required, select the destination location for the configuration file.

To import configuration settings:

- 1 Ensure that the TFTP server is running and that the configuration file is hosted in the root directory of the TFTP server.
- 2 Click Maintenance.
- 3 Enter the name of the configuration file in the Import Filename field.
- 4 Click the Operation drop-down list to select Import Configuration.
- 5 Enter the name of the required configuration archive in the Import File Name field.
- 6 Click Apply Changes.
- 7 The configuration file is downloaded from the TFTP server and the receiver reboots.

Logging

The receiver saves historical information about internal events within the device to its log file. This can be useful in troubleshooting problems with the device. All log file information is automatically saved locally and can be viewed in the Web Interface. It is also possible to send these log messages to a remote syslog server.

Use of a Time Server with the Time Zone configuration ensures all devices in your IPTV system are synchronised. The receiver uses NTP to maintain an accurate time on the device, useful when examining log files as each log message has an accurate timestamp (UTC time zone).

Logging is configured in the web interface Logging page as shown in Figure 47.

Figure 47 Logging Page - local and remote selected

Local Logging

You can view the log file in the Web Interface or download it to your computer.

To view the log file:

- 1 Click Logging.
- 2 Click View Log to display the log in a browser window.
- 3 Click Hide Log button to close the log display.

To download the log file:

- 1 Click Logging.
- 2 Click the Download log button to download the log file to the configured download folder on your local computer.

Note: Exterity recommends that you use Wordpad to view the downloaded log file.

Remote Logging

To send device log information to a remote server, you need to install a syslog server application on the remote server. Then set up the remote logging function on the receiver as described below.

To configure remote logging:

- 1 Click Logging.
- 2 Select Local and Remote from the Logging drop-down list.
- 3 In the Syslog server field, enter the IP address or host name of the syslog server where the log files are to be stored.
- 4 In the Syslog port field, enter the port number on the syslog server. The default value is 514.
- 5 Click the Logging level drop-down list and select an option ranging from 0-Emergency to 7-Debug, where 0 represents the least debug information and 7 represents the most.
- 6 Click Apply.

15 Troubleshooting

Problem	Possible Cause	Solution
Device does not appear in AvediaServer Director	Network connection faulty or cannot obtain IP address (indicated by LED flash 4 times per second and on-screen message)	Check Ethernet connections or replace cable. Check that DHCP server is running on network.
	AvediaServer Device Listener turned off	Open AvediaServer Status > Service page and turn on Device Listener.
	Device may be in Secure Mode	Switch the device back into Normal Mode. See Chapter 10, "Using Secure Mode".
AvediaServer Director cannot communicate with device	Network connection faulty	See above.
	Device has an IP address on a different subnet to the management station	Use a management station configured with an appropriate IP address to manage the device.
	Device is upgrading	Wait for upgrade to complete
No picture on television	Incorrect AV cabling	Check cabling.
	The wrong AV input is selected on the TV.	Find the appropriate AV input.
Channel(s) missing from channels list	Network connection faulty	See above
	The head-end device(s) is/are not properly connected to the network.	Ensure Director can communicate with the head-end device(s) and investigate if not.
	The head-end device(s) is/are on a different subnet from the receiver.	Configure multicast routing on network.
	Groups are configured, but the channel and receiver are not in the same group.	Correct the Groups configuration on the Groups tab.
Cannot connect to channel ("This channel is not available")	Either receiver or head-end device are not on the network.	Ensure the AvediaServer Director can communicate with the devices and investigate if not.
Blank screen when changing channel	Network port overloaded.	Ensure that network is multicast-enabled.
Video freezes or continually stutters	Network port overloaded.	Ensure that network is multicast-enabled.
Cannot connect to URL	You are using invalid proxy settings.	Check your proxy settings on Browser tab.
After upgrade, the device is still running the old version of firmware	The correct firmware file is not on the TFTP server	Put the correct file on the TFTP server.
	The TFTP server is not running	Start the TFTP server
	The TFTP server is not configured to send files.	Fix the security settings on the TFTP server.
Cannot log in to web interface	Reset to factory defaults required after upgrade to version 3.2 firmware from any previous version.	Reset the device to factory defaults after upgrading, or Manually delete the /usr/local/etc/httpd.conf file before logging into the web interface

A

Playlist Format

Sample playlist files are shown below.

Note: There can be more than one playlist string in a playlist text file, but the final line of the file must always contain a blank line (carriage return).

Example 1 – Remote content from a web server:

```
media:http://10.8.64.72/video/news1.mpg
media:http://10.8.64.72/video/sport1.mpg
media:http://10.8.64.72/video/news2.mpg
media:http://10.8.64.72/video/cartoon.mpg
media:http://10.8.64.72/video/film.mpg
```

Example 2 – Local content from a USB storage device:

```
media:file:///mnt/usb/sda1/news1.mpg
media:file:///mnt/usb/sda1/sport.mpg
media:file:///mnt/usb/sda1/news2.mpg
media:file:///mnt/usb/sda1/cartoon.mpg
media:file:///mnt/usb/sda1/film.mpg
```

Note: The video files must be in MPEG-2 Transport Stream format.

Note: To ensure smooth playback of a playlist, you should ensure that each item in the playlist requires the same codec and that the frame rate is the same whenever possible. Re-configuration during playback caused by dissimilar content can result in periods of no output on the client display.

B

XML Channel List Format

A sample XML channel list is shown below:

```
<channel-list>
  <channel number="1">
    <name>BBC1</name>
    <multicast ip="2319361" port="5002" />
    <dvb sid="4164" />
  </channel>
  <channel number="2">
    <name>BBC2</name>
    <multicast ip="2319361" port="5003" />
    <dvb sid="4228" />
  </channel>
  <channel number="24">
    <name>BBC NEWS24</name>
    <multicast ip="2319361" port="5001" />
    <dvb sid="4415" vpid="281" apid="282" />
  </channel>
</channel-list>
```

The parameter number within the channel element is optional, as is the dvb element and all its parameters.

C

Serial Admin Interface Connection

The serial admin interface provides access to a small subset of device functionality on the receiver. For example, you can configure an IP address using a terminal program session, such as PuTTY or HyperTerminal.

Cabling

To connect to the serial interface use the female DB-9 to RJ45 adaptor shown in Figure 48 (Exterity part number access-srl), or the USB – RJ45 serial cable shown in Figure 49 (Exterity part number access-usb).



Figure 48 DB-9 – RJ45 serial adaptor



Figure 49 USB – RJ45 serial cable

The female DB-9 connector should be plugged into the serial port on a PC. A straight-through network cable should be used between the RJ45 socket on the adaptor and the admin port on the Exterity device.

Note that although the cable fits, the admin port should not be connected to the Ethernet port on a PC.

Adaptor Wiring

If you do not have an adaptor you can make one using the details shown in Figure 50.



Figure 50 DB-9 and RJ45 connector

Table 4 Serial Pin Out

DB9 Connector Pin No	Description	RJ45 Pin No
2	TxD	8
3	RxD	2
5	GND	4

Opening a Session

- 1 Open a terminal program such as PuTTY or HyperTerminal.
 - 2 Set up the serial port with the following settings:
 - Baud rate: 115200
 - Data bits: 8
 - Parity: none
 - Stop bits: 1
 - Flow control: none
- The program should now connect and present a login prompt if the return key is pressed.

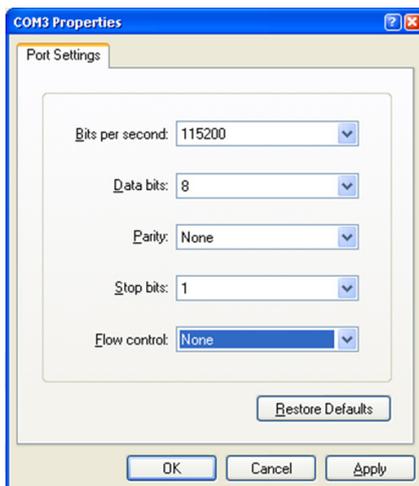


Figure 51 Serial port settings

D

Serial TV Interface Connection

You can control some functions of compatible TVs using the AvediaPlayer Receiver Serial Control Interface. This enables the use of a single Remote Control handset to control both AvediaPlayer Receiver and TV functions.

This interface is wired as shown below.

Table 5 Serial TV interface wiring

Description	RJ45 Pin No
TxD	8
RxD	2
GND	4

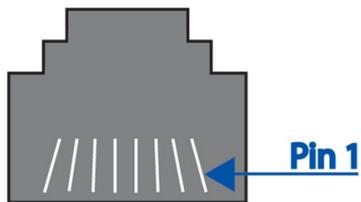


Figure 52 Serial TV Interface

E

Serial Pass-through

To enable serial pass-through, first add a line of the following form to your serial out configuration file:

```
<telnet port="5001" enable="yes"/>
```

Then download the file to the receiver as described in Chapter 6, "Configuring TV Control".

You can then use a telnet client to connect to the receiver's IP address on the specified port. This will give you slave line access to the attached TV.

Example:

```
<externity>
  <tv>
    <config>
      <manufacturer name="lg" version="1" />
      <serial baud="9600" parity="none" databits="8" flow="none"
raw="no" />
      <telnet port="5001" enable="yes"/>
    </config>
  </tv>
</externity>
```

To enable/disable serial pass-through or change the TCP port, please consult Table 6.

Table 6

<telnet> attributes	Type	Description
Port	Integer	TCP Port to listen on
enable	yes no	To enable or disable serial pass through



Support and Contact Information

Technical Support for Exterity products is provided by authorised Systems Integrators and Resellers. Please contact your Systems Integrator or Reseller with any support issues.