



etherdVB

DVB/IP Gateway



Operation Manual

<http://etherdVB.com>

Models
DVB-T • DVB-S • Analogue

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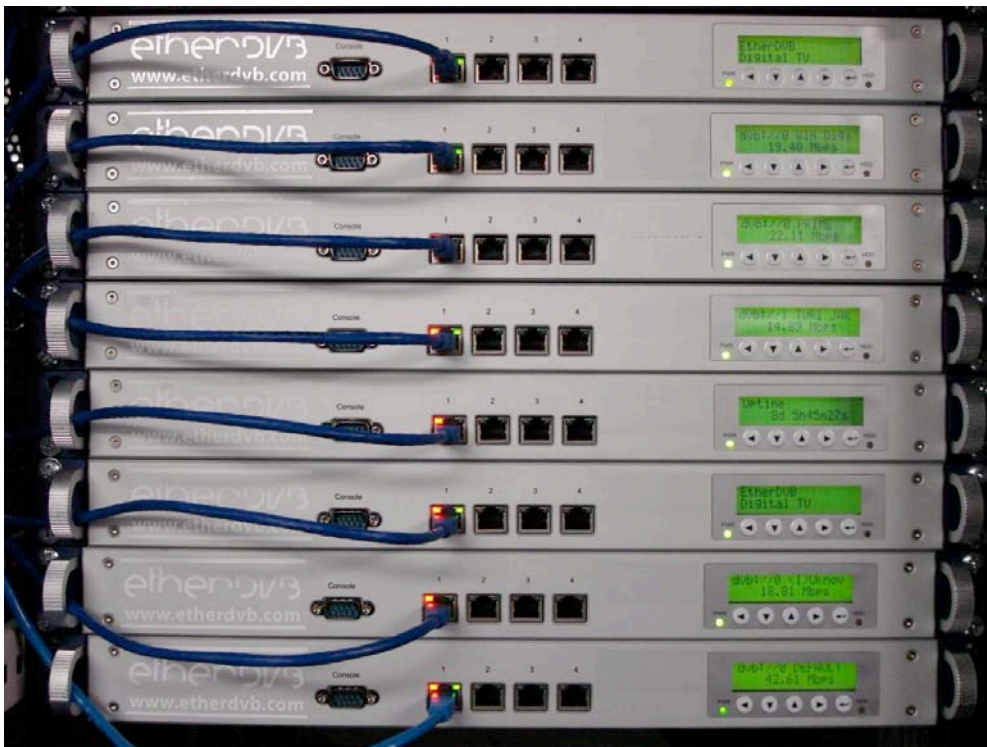
1. Operation Manual

1.1. About EtherDVB

EtherDVB is a dependable, modular platform for carrier and enterprise television reticulation. It enables the retransmission of live television channels on your LAN, ready for viewing on any connected PC or set-top-box.

There is no incremental bandwidth use on your network with the increase in viewers per channel. By using the multicast address space of IPv4, EtherDVBs can reticulate their programs as far as your network extends.

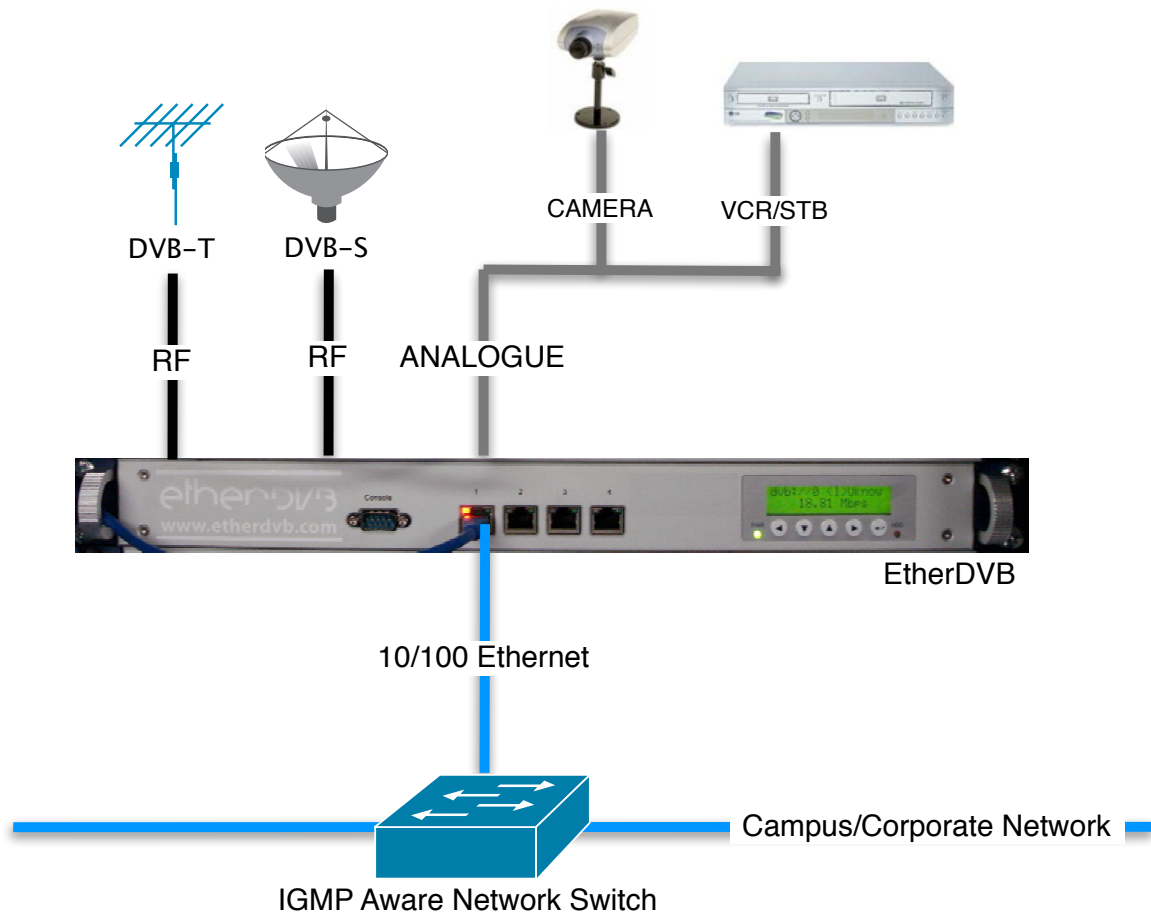
This manual describes how to operate an EtherDVB unit. You are encouraged to understand multicast networking in general, and also in your specific corporate environment. While the prerequisites to install and operate EtherDVBs are rudimentary you'll need to have a plan for implementing multicast TV services, and undertake consultation with the networking engineers at your site.



EtherDVB installation for multiple DVB-T, DVB-S and analogue services

An EtherDVB unit can be configured to relay DVB channels from terrestrial, satellite and analogue sources. Each unit contains a maximum of two inputs, each a choice of DVB-T, DVB-S or Analogue.

Once powered up, the EtherDVB can be administered using a web browser. Typical configuration time for two tuners comprising ten channels is around 20 minutes. Typical installations employ several EtherDVBs to reticulate many broadcast network programs. To reticulate all digital TV channels from 5 networks in your location you need three EtherDVBs equipped with a total of five operational DVB-T tuners, one spare.



EtherDVB connections to RF or Analogue sources and the destination IP network

Each EtherDVB contains a number of ethernet ports on which to transmit the multicast streams. Different models of the EtherDVB have one or more ethernet ports enabled. EtherDVB reticulates streams to configurable UDP multicast or unicast address, and requires a multicast enabled network to operate.

1.2. Watching Multicast TV

Once the EtherDVBs are streaming multicast television on your LAN, your viewers can see the streams in two ways:

IPTV Set Top Box

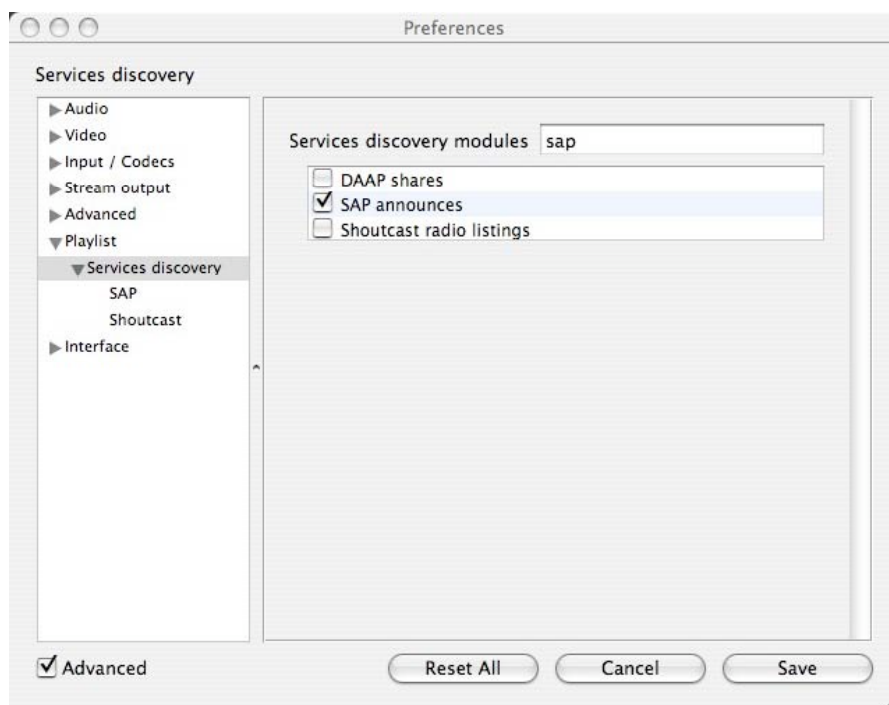
Using standard IPTV STBs with an attached screen or TV is a common way for university campus network managers to replace analogue cable TV networks with multicast-delivered broadcasts. Classroom and common room deployments use this approach.

Computer

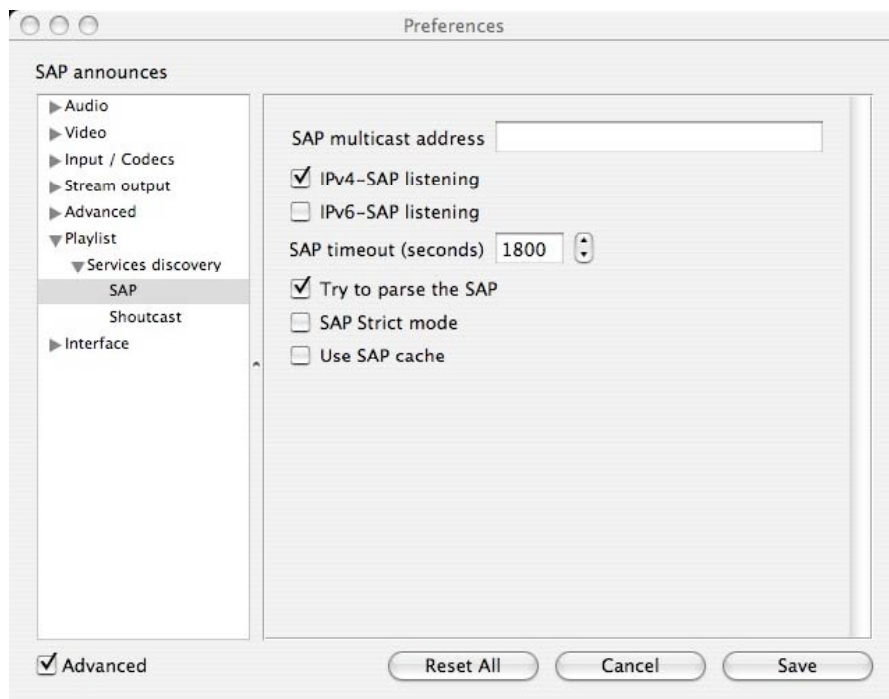
Using free software on any Mac, Windows or Linux computer shows the broadcast streams beautifully. The most popular and versatile program for enabling your LAN users to view multicast TV is VLC from www.videolan.org.

VLC doesn't come configured for multicast transmissions. If you have a standard operating environment (SOE) at your site you'll need to ensure VLC's preferences are included so end-users see the channels immediately on launching the application.

To enable the SAP channel announcements to be seen, adjust the VLC's Advanced Preferences to specify the settings as shown in the following screens:



Enabling SAP Announcements in VLC



You may also need to adjust the SAP settings to suit your network environment

The VLC program is developed by a thriving open-source community. Please consider supporting their efforts when using their software professionally.

1.3. Configuring DVB-T Devices

Tuning a DVB-T device is as simple as scanning the available frequencies. Choose a **dvb://** device then on the **Bouquet Presets** tab, click **Scan** to find available channels. See the *Quick Start Guide* for the whole procedure.

dvb://0 - DVB Terrestrial

Network Name: ABC Bitrate: 22.369 Mb/s
 BER: 134 Strength: 92 % SNR: 81 db

Basic Settings **Bouquet Presets**

will initiate a spectrum scan; will clear all presets.

Channel	Provider	Frequency	Strength	SNR	Action
9A	ABC	205.666 MHz	92 %	81 %	<input type="button" value="Save"/>
6	Southern Cross Television	177.500 MHz	-	-	<input type="button" value="Delete"/> <input type="button" value="Tune"/>
9A	ABC	205.625 MHz	-	-	<input type="button" value="Delete"/> <input type="button" value="Tune"/>
11	WIN Digital	219.500 MHz	-	-	<input type="button" value="Delete"/> <input type="button" value="Tune"/>
12	PRIME	226.500 MHz	-	-	<input type="button" value="Delete"/> <input type="button" value="Tune"/>
30	SBS NETWORK	543.500 MHz	-	-	<input type="button" value="Delete"/> <input type="button" value="Tune"/>

- A **scan** will interrupt any streams currently from this tuner
- **Saving** will overwrite any existing stored channel data
- The saved provider name is only displayed in the **presets** area.
- Presets are available across the all DVB adapters of the same type

To specify individual DVB tuning parameters on the **Basic Settings** tab, change the tuner settings and click **Update Tuner Settings**.

dvb://0 - DVB Terrestrial

Network Name: ABC Bitrate: 22.360 Mb/s
 BER: 455 Strength: 93 % SNR: 80 db

Basic Settings **Bouquet Presets**

Frequency: 205.666 MHz Inversion: on Bandwidth: 7

QAM: 64 Code rate HP: 3/4 Code rate LP: 1/2

Transmission mode: 8k Guard Interval: 1/16 Heirarchy: none

Program	Name	Access	State	Bitrate	Streams
dvb://0/528	ABC HDTV	Open	Streaming	10.394 Mb/s	x 1
dvb://0/529	ABC1	Open	Streaming	6.400 Mb/s	x 1
dvb://0/530	ABC2	Open	Streaming	4.956 Mb/s	x 1
dvb://0/531	ABC1	Open	Idle	5.977 Mb/s	
dvb://0/532	ABC3	Open	Idle	5.896 Mb/s	
dvb://0/534	ABC DiG Radio	Open	Idle	0.271 Mb/s	
dvb://0/535	ABC DiG Jazz	Open	Idle	0.271 Mb/s	

Click the **dvb:// Program** links to configure new channels, and cancel existing ones.

dvb://0 - DVB Terrestrial						
Program ID: dvb://0/528		Program Number: 528				
Name: ABC HDTV		Access: Free				
State: Idle		Created: 29/Jun/2008 09:10:31 +0000				
Bitrate: 10.396 Mb/s		PIDS: PMT 258 / PCR 2309				
PID	Type	Description	PPS	Bitrate		
2314	Video	1280x720 pixels, 50 Hz, 16x9 ratio	6523	9.811 Mb/s		
2315	Audio	Dolby Digital (1/0) (English)	305	0.459 Mb/s		
2316	Teletext	English	50	0.075 Mb/s		
Group	Port	TTL	TOS	SAP	Interface	Action
	1234	4	0	ABC HDTV	eth0	Create

A DVB program comprising its video and audio streams can be sent to multiple unicast and multicast destinations simultaneously.

dvb://0 - DVB Terrestrial						
Stream output added to dvb://0/528						
Program ID: dvb://0/528		Program Number: 528				
Name: ABC HDTV		Access: Free				
State: Streaming		Created: 29/Jun/2008 09:10:31 +0000				
Bitrate: 10.396 Mb/s		PIDS: PMT 258 / PCR 2309				
PID	Type	Description	PPS	Bitrate		
2314	Video	1280x720 pixels, 50 Hz, 16x9 ratio	6524	9.812 Mb/s		
2315	Audio	Dolby Digital (1/0) (English)	304	0.457 Mb/s		
2316	Teletext	English	50	0.075 Mb/s		
Group	Port	TTL	TOS	SAP	Interface	Action
239.255.1.2	1234	4	0	Campus TV/ABC HDTV	eth0	Cancel
	1234	4	0	ABC HDTV	eth0	Create

Provisioning a new channel on your LAN requires entry of the following information:

- Group** the multicast IP address of the channel on your LAN
- Port** usually 1234 by convention (1024 to 65535)
- TTL** the Time To Live counter for outgoing multicast packets (1-255)
- TOS** Type Of Service (default 0)
- SAP** The channel group and channel name seen by end users
- Interface** the EtherDVB Ethernet network to use

The **Program Listing** page shows the programs available and any streams running.

Program Listing

Program	Name	State	Bitrate
dvb://0/528	ABC HDTV	Streaming	10.400 Mb/s
<input type="text" value="239.255.1.2"/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="Campus TV/ABC HDTV"/> <input type="text" value="eth0"/> <input type="button" value="Cancel"/>			
<input type="text" value=""/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC HDTV"/> <input type="text" value="eth0"/> <input type="button" value="Create"/>			
dvb://0/529	ABC1	Idle	6.397 Mb/s
<input type="text" value=""/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC1"/> <input type="text" value="eth0"/> <input type="button" value="Create"/>			
dvb://0/530	ABC2	Idle	4.957 Mb/s
<input type="text" value=""/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC2"/> <input type="text" value="eth0"/> <input type="button" value="Create"/>			
dvb://0/531	ABC1	Idle	5.980 Mb/s
<input type="text" value=""/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC1"/> <input type="text" value="eth0"/> <input type="button" value="Create"/>			
dvb://0/532	ABC3	Idle	5.900 Mb/s
<input type="text" value=""/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC3"/> <input type="text" value="eth0"/> <input type="button" value="Create"/>			
dvb://0/534	ABC DiG Radio	Idle	0.271 Mb/s
<input type="text" value=""/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC DiG Radio"/> <input type="text" value="eth0"/> <input type="button" value="Create"/>			
dvb://0/535	ABC DiG Jazz	Idle	0.269 Mb/s
<input type="text" value=""/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC DiG Jazz"/> <input type="text" value="eth0"/> <input type="button" value="Create"/>			
encoder://1/100	Remote Camera	Idle	7.401 Mb/s
<input type="text" value=""/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="Remote Camera"/> <input type="text" value="eth0"/> <input type="button" value="Create"/>			

Server Settings

Configuration | Restart | System Logging

The system configuration has been modified since loading.

Click to write the current configuration to flash.

Save the completed configuration after all destinations have been entered.

1.4. Configuring DVB-S Devices

To configure an EtherDVB for satellite reception, choose the **dvb://** device and specify the tuning parameters for your dish.

The screenshot displays the 'dvb://0 - DVB Satellite' configuration page. On the left is a sidebar with navigation links: Status (Streams Active), Devices (dvb://0 selected), Programs (Program Listing), and Administration (Server Settings, Defaults, File Management, Web Server, System Log, SAP Server, Accounts, Network, Logout <admin>). The main content area shows:

- Network Name:** PCM, **Bitrate:** 41.975 Mb/s, **BER:** 0, **Strength:** 0 %, **SNR:** 0 db
- Basic Settings:** Frequency: 3760 MHz, Inversion: off, FEC: none, LNB Frequency: 5150 MHz, Symbol Rate: 26000 KHz, Tone: off, Polarization: No Voltage
- Update Tuner Settings** button
- Program List:**

Program	Name	Access	State	Bitrate	Streams
dvb://0/1	NOW	Open	Idle	2.925 Mb/s	
dvb://0/2	Bloomberg	Open	Idle	4.390 Mb/s	
dvb://0/6	Russia Today	Open	Idle	3.820 Mb/s	
dvb://0/7	Muslim TV1	Open	Idle	3.904 Mb/s	
dvb://0/8	Muslim TV2	Open	Idle	3.778 Mb/s	
dvb://0/9	Al Jazeera International	Open	Idle	3.567 Mb/s	
dvb://0/11	Supreme Master TV	Open	Idle	3.974 Mb/s	
dvb://0/12	TV5	Open	Idle	3.792 Mb/s	

To configure a new channel on your multicast network, or change an existing one, choose the corresponding **dvb:// Program** link.

The screenshot shows the configuration page for program 'dvb://0/9 - DVB Satellite'. It includes the following details:

- Program ID:** dvb://0/9, **Program Number:** 9
- Name:** Al Jazeera International, **Access:** Free
- State:** Idle, **Created:** 30/Jun/2008 12:30:41 +1000
- Bitrate:** 3.560 Mb/s, **PIDS:** PMT 5009 / PCR 1090
- PID Table:**

PID	Type	Description	PPS	Bitrate
1090	Video	720x576 pixels, 25 Hz, 4x3 ratio	2187	3.289 Mb/s
1091	Audio	MPEG Audio	178	0.268 Mb/s
- Channel Configuration Form:**

Group	Port	TTL	TOS	SAP	Interface	Action
239.255.255.1	1234	4	0	Al Jazeera International	eth0	Create

Provisioning a new channel on your LAN requires entry of the following information:

- Group** the multicast IP address of the channel on your LAN
- Port** usually 1234 by convention (1024 to 65535)
- TTL** the Time To Live counter for outgoing multicast packets (1-255)
- TOS** Type Of Service (default 0)
- SAP** The channel group and channel name seen by end users
- Interface** the EtherDVB Ethernet network to use

1.5. Configuring Analogue Devices

An EtherDVB can be configured with one or more analogue encoders allowing the creation of multicast network television streams from video cameras, VCRs, security systems and other non-digital sources.

The screenshot shows the 'encoder://1 - MPEG2 Encoder' configuration page. On the left is a navigation menu with categories: Status (Streams Active), Devices (encoder://1 selected), Programs (encoder://1/100), and Administration. The main content area has two tabs: 'Basic Settings' and 'Advanced Settings'. Under 'Basic Settings', there are fields for Input (Tuner 1), Frequency (196.250 MHz), Resolution (720x576), Target Bitrate (6.000 Mbit/s), Bitrate Peak (8.000 Mbit/s), and Current Bitrate (6.357 Mb/s). An 'Update Encoder Settings' button is below these fields. At the bottom, a table lists the active program:

Program	Name	Access	State	Bitrate	Streams
encoder://1/100	Remote Camera	Open	Idle	6.779 Mb/s	

An encoder is configured from the **encoder://** page under the **Device Summary** list. Attach your source video and audio cables to the inputs on the rear of the unit. Choose the appropriate connection from the **Input** menu and specify the desired outgoing bitrate. Click **Update Encoder Settings** to enable the configuration.

To create a new TV stream from your analogue input, click the **encoder://1/100** program link.

The screenshot shows the details for the program 'encoder://1/100'. It includes fields for Program ID, Program Number (100), Name (Remote Camera), Access (Free), State (Idle), Created (29/Jun/2008 09:10:31 +0000), Bitrate (6.954 Mb/s), and PIDS (PMT 100 / PCR 224). Below this is a table of PIDs:

PID	Type	Description	PPS	Bitrate
192	Audio	MPEG Audio	168	0.253 Mb/s
224	Video	720x576 pixels, 25 Hz, 4x3 ratio	4452	6.696 Mb/s

At the bottom, there is a form to create a new channel with fields for Group (239.255.1.3), Port (1234), TTL (4), TOS (0), SAP (Remote Camera), Interface (eth0), and a 'Create' button.

As with DVB-T and DVB-S sources, provisioning a new channel on your LAN requires entry of the following information:

- Group** the multicast IP address of the channel on your LAN
- Port** usually 1234 by convention (1024 to 65535)
- TTL** the Time To Live counter for outgoing multicast packets (1-255)
- TOS** Type Of Service (default 0)
- SAP** The channel group and channel name seen by end users
- Interface** the EtherDVB Ethernet network to use

After creation, the analogue service will be streaming to the network, as shown in the **Program Listing** page.



- Status**
- System Information
- Streams Active
- Configuration Changed
- Devices**
- Device Summary
- encoder://1
- dvb://0
- Programs**
- Program Listing**
- Administration**
- Server Settings
- Defaults
- File Management
- Web Server
- System Log
- SAP Server
- Accounts
- Network
- Logout <admin>
- About**
- DVB to IP GW
- EtherDVB

Program Listing							
Program	Name	State			Bitrate		
dvb://0/528	ABC HDTV	Streaming			10.412 Mb/s		
	239.255.1.2	1234	4	0	Campus TV/ABC HDTV	eth0	Cancel
	<input type="text"/>	1234	4	0	ABC HDTV	eth0	Create
dvb://0/529	ABC1	Streaming			6.410 Mb/s		
	239.255.1.11	1234	4	0	ABC1	eth0	Cancel
	<input type="text"/>	1234	4	0	ABC1	eth0	Create
dvb://0/530	ABC2	Idle			4.965 Mb/s		
	<input type="text"/>	1234	4	0	ABC2	eth0	Create
dvb://0/531	ABC1	Idle			5.987 Mb/s		
	<input type="text"/>	1234	4	0	ABC1	eth0	Create
dvb://0/532	ABC3	Idle			5.911 Mb/s		
	<input type="text"/>	1234	4	0	ABC3	eth0	Create
dvb://0/534	ABC DiG Radio	Idle			0.269 Mb/s		
	<input type="text"/>	1234	4	0	ABC DiG Radio	eth1	Create
dvb://0/535	ABC DiG Jazz	Idle			0.269 Mb/s		
	<input type="text"/>	1234	4	0	ABC DiG Jazz	eth0	Create
encoder://1/100	Remote Camera	Streaming			6.454 Mb/s		
	239.255.1.3	1234	4	0	Remote Camera	eth0	Cancel
	<input type="text"/>	1234	4	0	Remote Camera	eth0	Create

1.6. Program Listing

The screenshot displays the 'Program Listing' page in the EtherDVB interface. On the left is a navigation menu with sections: Status (System Information, Streams Active, Configuration Changed), Devices (Device Summary, encoder://1, dvb://0), Programs (Program Listing), Administration (Server Settings, Defaults, File Management, Web Server, System Log, SAP Server, Accounts, Network, Logout <admin>), and About (DVB to IP GW, EtherDVB). The main content area shows a table of streaming programs:

Program	Name	State	Bitrate
dvb://0/528	ABC HDTV	Streaming	10.396 Mb/s
<input type="text" value="239.255.1.100"/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC HDTV"/> <input type="text" value="eth0"/> <input type="button" value="Cancel"/>			
<input type="text" value=""/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC HDTV"/> <input type="text" value="eth0"/> <input type="button" value="Create"/>			
dvb://0/529	ABC1	Streaming	6.398 Mb/s
<input type="text" value="239.255.1.11"/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC1"/> <input type="text" value="eth0"/> <input type="button" value="Cancel"/>			
<input type="text" value=""/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC1"/> <input type="text" value="eth0"/> <input type="button" value="Create"/>			
dvb://0/530	ABC2	Streaming	4.957 Mb/s
<input type="text" value="239.255.1.22"/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC2"/> <input type="text" value="eth0"/> <input type="button" value="Cancel"/>			
<input type="text" value=""/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC2"/> <input type="text" value="eth0"/> <input type="button" value="Create"/>			
dvb://0/531	ABC1	Streaming	5.978 Mb/s
<input type="text" value="239.255.1.1"/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC1"/> <input type="text" value="eth0"/> <input type="button" value="Cancel"/>			
<input type="text" value=""/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC1"/> <input type="text" value="eth0"/> <input type="button" value="Create"/>			
dvb://0/532	ABC3	Streaming	5.900 Mb/s
<input type="text" value="239.255.1.33"/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC3"/> <input type="text" value="eth0"/> <input type="button" value="Cancel"/>			
<input type="text" value=""/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC3"/> <input type="text" value="eth0"/> <input type="button" value="Create"/>			
dvb://0/534	ABC DiG Radio	Streaming	0.271 Mb/s
<input type="text" value="239.255.1.50"/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC DiG Radio"/> <input type="text" value="eth0"/> <input type="button" value="Cancel"/>			
<input type="text" value=""/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC DiG Radio"/> <input type="text" value="eth0"/> <input type="button" value="Create"/>			
dvb://0/535	ABC DiG Jazz	Streaming	0.271 Mb/s
<input type="text" value="239.255.1.51"/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC DiG Jazz"/> <input type="text" value="eth0"/> <input type="button" value="Cancel"/>			
<input type="text" value=""/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="ABC DiG Jazz"/> <input type="text" value="eth0"/> <input type="button" value="Create"/>			
encoder://1/100	Remote Camera	Streaming	7.203 Mb/s
<input type="text" value="239.255.1.3"/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="Remote Camera"/> <input type="text" value="eth0"/> <input type="button" value="Cancel"/>			
<input type="text" value=""/> <input type="text" value="1234"/> <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="Remote Camera"/> <input type="text" value="eth0"/> <input type="button" value="Create"/>			

The Program Listing page shows the channels currently being streamed to the network. To stop a channel, hit the **Cancel** button.

In advanced routing scenarios, each channel can be streamed to multiple (multicast or unicast) destination addresses.

You can add new outgoing streams for any program available. Provisioning a new channel on your LAN requires entry of the following information:

Group	the multicast IP address of the channel on your LAN
Port	usually 1234 by convention (1024 to 65535)
TTL	the Time To Live counter for outgoing multicast packets (1-255)
TOS	Type Of Service (default 0)
SAP	The channel group and channel name seen by end users
Interface	the EtherDVB Ethernet network to use

1.7. Server Settings

The Server Settings page lets you **Save** the current configuration to the EtherDVB's non-volatile (flash) memory. If the unit loses power or is restarted, the saved configuration is restored.



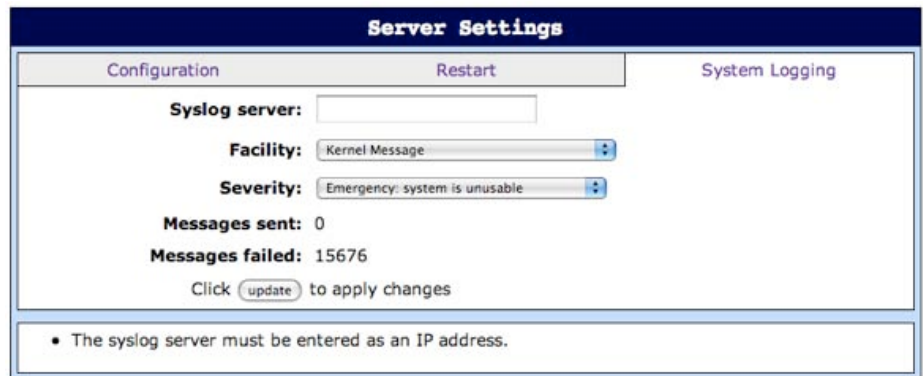
The screenshot shows the 'Server Settings' page with three tabs: 'Configuration', 'Restart', and 'System Logging'. The 'Configuration' tab is active. Below the tabs, there is a text prompt: 'Click to write the current configuration to flash.'

Restarting the streaming application loads the current configuration. Rebooting the appliance is a warm hardware boot.



The screenshot shows the 'Server Settings' page with three tabs: 'Configuration', 'Restart', and 'System Logging'. The 'Configuration' tab is active. Below the tabs, there are two buttons: 'Restart now' with the text 'Restart the streaming application' and 'Reboot now' with the text 'Reboot the streaming appliance'.

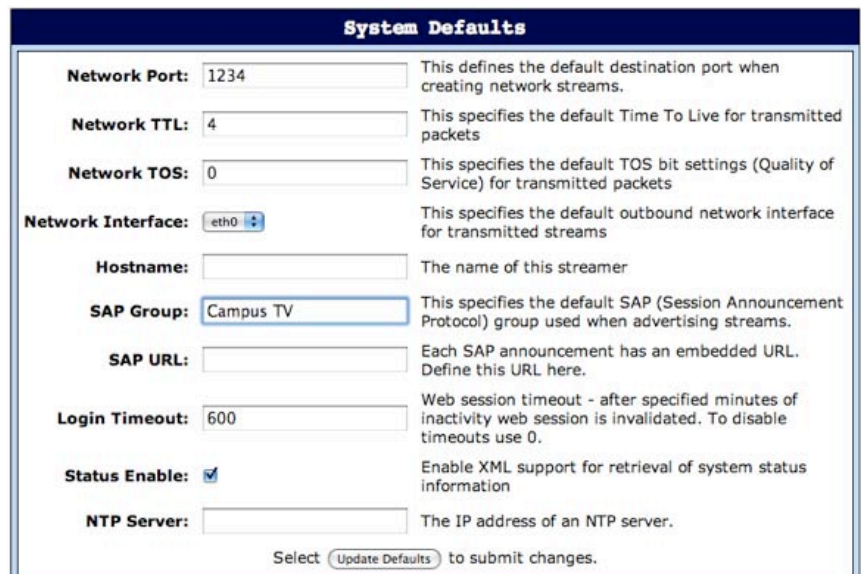
Specify a syslog server for detailed logging information.



The screenshot shows the 'Server Settings' page with three tabs: 'Configuration', 'Restart', and 'System Logging'. The 'Configuration' tab is active. Below the tabs, there are fields for 'Syslog server:', 'Facility:' (set to 'Kernel Message'), and 'Severity:' (set to 'Emergency: system is unusable'). Below these fields, it shows 'Messages sent: 0' and 'Messages failed: 15676'. There is an 'update' button and a note: 'Click to apply changes'. At the bottom, there is a bullet point: '• The syslog server must be entered as an IP address.'

1.8. Defaults

The Defaults page specifies the values that will be used when creating new programs.



The screenshot shows the 'System Defaults' page with various configuration options. Each option has a text input field and a description. The options are: 'Network Port: 1234', 'Network TTL: 4', 'Network TOS: 0', 'Network Interface: eth0', 'Hostname:', 'SAP Group: Campus TV', 'SAP URL:', 'Login Timeout: 600', 'Status Enable: ', and 'NTP Server:'. At the bottom, there is an 'Update Defaults' button and the text: 'Select to submit changes.'

Enabling the **Status** delivers an XML file at <http://host/status.xml>

1.9. File Management

The **File Management** page is for uploading new firmware images to the EtherDVB. This can be accomplished by uploading the file from your web browser. Click **Choose File** to select the new EtherDVB image file on your computer, then click **Upload a file**.

The screenshot shows the EtherDVB File Manager interface. On the left is a navigation sidebar with the following sections:

- Status**: System Information, Streams Active
- Devices**: Device Summary, encoder://1, dvb://0
- Programs**: Program Listing
- Administration**: Server Settings, Defaults
- File Management**: Web Server, System Log, SAP Server, Accounts, Network, Logout <admin>
- About**: DVB to IP GW, EtherDVB

The main content area is titled "File Manager" and contains the following elements:

File name	Size	Action
config.xml	2921	Delete
estream-1.9.98	10666868	Delete

10.456 MBytes used, 364.312 MBytes free, 2.790 % used

Upload using web browser

Choose File no file selected Upload a file

Status	TFTP Server IP	File Name	Action
Idle	<input type="text"/>	<input type="text"/>	Fetch

This page can also acquire the EtherDVBs firmware image from a TFTP server. Specify the IP address of the TFTP server and the directory/filename of the file to **fetch**.

Backup the configuration of the EtherDVB by downloading the **config.xml** file.

Deleting the **config.xml** file will restore the unit to factory defaults.

1.10. Web Server

The web server providing the administration interface to the EtherDVB can be configured to operate on a different port. The default port is 80. Specify a new port number and hit the update button. The new port will be used when the EtherDVB is restarted, either with the power switch on the rear of the unit or through the Server Settings > Restart > **Reboot** selection.

Web Server Configuration

Port: (Requires system restart to take affect)

Access Control List

Order	Rule	Subnet	Action
<input type="text" value="1"/>	<input type="button" value="Permit"/>	<input type="text" value="192.168.2.0/24"/>	<input type="button" value="Insert"/>

Note:

- Access list changed take effect immediately
- If a new ACL blocks access to the streamer then power cycle
- **ACLs** are not automatically saved
- The default action is **Permit**.
- Inserting an ACL with an existing order number will replace the existing ACL

The EtherDVB web server can allow or restrict administration access by **Access Control Lists (ACLs)**. ACLs are evaluated in the **Order** specified, lowest to highest. Specify the network and subnet mask in the format aaa.bbb.ccc.ddd/mask (e.g. 192 . 168 . 2 . 0 / 24).

If you lose administration access to the EtherDVB, power-cycle the unit to return to your previous settings. When you are happy with your ACL settings, **Save** the system configuration from the **Server Settings** page.

ACL settings affect only web server administration access, not access or routing of the television streams.

1.11. System Log

System Log

```

dvb://0/2055 Processing PMT [Version 1]
dvb://0: Processing SDT [Version 24]
dvb://0/2055 Provider="Southern Cross Television" Service="SC10 Canberra"
dvb://0/2087 Provider="Southern Cross Television" Service="SC10 HD"
dvb://0/2119 Provider="Southern Cross Television" Service="SC Ten"
network://224.2.127.254/9875/ttl=4: send failed: Network is unreachable
dvb://0: Processing NIT [Version 1]
dvb://0: NIT reports frequency as 177500000
dvb://0: Storing 177.375 MHz (Channel 6) Southern Cross Television
dvb://0: Trying NIT frequency 177500000
dvb://0: Trying frequency 177.500 MHz (channel "6")
dvb://0: NO LOCK
192.168.2.66 - admin [30/Jun/2008:14:03:18 +0000] "GET /device/dvb/0/preset HTTP/1.1" 200 4244
network://224.2.127.254/9875/ttl=4: send failed: Network is unreachable
dvb://0: LOCKED
dvb://0/2087 Processing PMT [Version 0]
dvb://0/2055 Processing PMT [Version 1]
dvb://0: Processing PAT [Version 12]
dvb://0/2119 Processing PMT [Version 4]
dvb://0: Processing SDT [Version 24]
dvb://0/2055 Provider="Southern Cross Television" Service="SC10 Canberra"
dvb://0/2087 Provider="Southern Cross Television" Service="SC10 HD"
dvb://0/2119 Provider="Southern Cross Television" Service="SC Ten"

```

The System Log can be used to view operations on the EtherDVB. It lists events when tuning the receivers, creating programs and other administration procedures.

1.12. SAP Server

The SAP Server lets you create multicast SAP announcements. Using this feature you can broadcast a SAP announcement for only the external multicast services you're choosing to bring in.

SAP Server

Description	Group	Port	TTL	Action
Campus Special Interest Group	239.255.100.1	1234	4	Delete
SAP Name for External Sou	239.255.100.2	1234	4	Create

Instructions

- Only use this SAP server to announce MPEG2 transport streams carried directly within UDP packets
- In the description specify an optional '/' to specify a group name in addition to the program name, ie: <group>/<program>
- Group must be in the multicast address range (ie: 224.0.0.0/4)
- The fields **port** and **TTL** will use system defaults if left blank

All channels sourced from the EtherDVB's tuners are broadcast with the Program name you specify.

1.13. Accounts

The Accounts page lets you manage the administrative users who might need to perform configuration tasks on the EtherDVB.

etherDVB

Status
System Information
Streams Active

Devices
Device Summary
encoder://1
dvb://0

Programs
Program Listing

Administration
Server Settings
Defaults
File Management
Web Server
System Log
SAP Server
Accounts
Network
Logout <admin>

Account Management

Name	Full Name	Group	Action
admin		Admin	Edit
geo	George Bray	Program	Edit

Create

- Click on Create to create a new account
- Click on the respective edit to edit or delete an existing account
- **All changes take place immediately!**

Specifying the **Admin** group allows read/write access to all functions. The **Program** group has read access to see status as well as suspend all streaming.

Edit Account

Field	Value	Description
Account Name:	geo	Account name (alpha numeric only)
Description:	George Bray	User specific text (not used internally)
Group:	Program	Select a group to which this user will belong. Groups are: <ul style="list-style-type: none">• admin - access to all systems• program - access to tuner and program streaming
New Password:	****	
Retype New Password:	****	

Save OR Cancel OR Delete

1.14. Network

The **Network** page allows configuration of the ethernet interfaces. The standard EtherDVB has four active ethernet ports for outgoing network streams.

Network Interfaces				
Name	TX	Link	Address	Last Changed
eth0	7.454 Mb/s	UP	192.168.2.36/24	30/Jun/2008 13:44:56 +0000
eth1	0.000 Mb/s	DOWN		30/Jun/2008 13:44:56 +0000
eth2	0.000 Mb/s	DOWN		30/Jun/2008 13:44:56 +0000
eth3	0.000 Mb/s	DOWN		30/Jun/2008 13:44:56 +0000

Clicking on the interface name, **eth0**, presents the configuration page. Here you can specify how the EtherDVB acquires its ethernet address and the network gateway to be used. If using a static IP address, the subnet mask of the network is entered after the address in /x notation.

Network Interface

Interface: [eth0](#)
Link State: UP

Configure using: Click to commit.

IP Address: 192.168.2.36/24
Default Gateway:
Lease: Discovering

	TX	RX
Bitrate:	6.584 Mb/s	0.000 Mb/s
Packets:	606 p/s	0 p/s
Multicast:	-	0 p/s

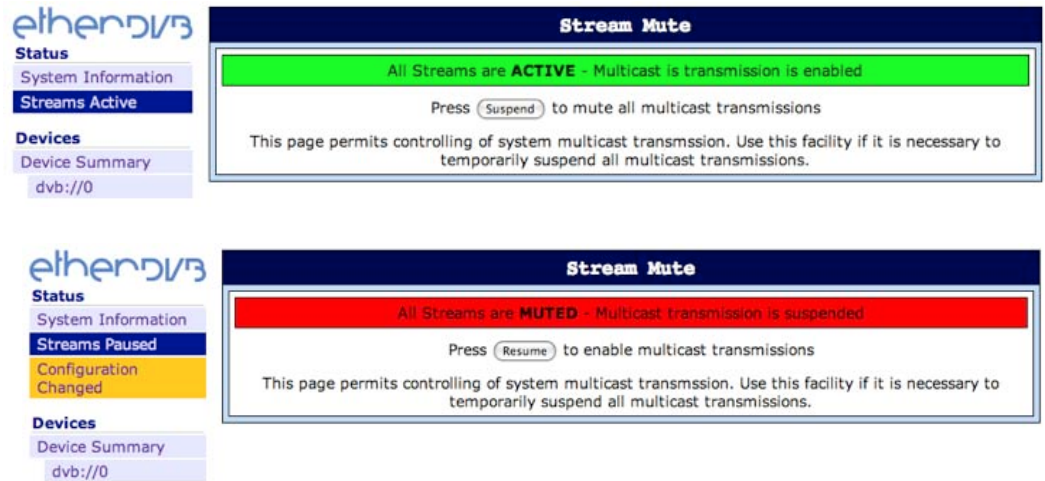
Sub Interface: eth0.

The settings are applied immediately, so you may have to point your web browser at the new IP address to continue configuration. Save the configuration at Server Settings > **Save** to keep the new values.

2. How To Guide

2.1. Suspend and Resume All Streaming

To pause all streaming on the EtherDVB choose **Suspend** from the **Streams Active** page. Press **Resume** to start all programs.



2.2. Recover the Admin Password



Follow these steps to reset the admin password to **admin**.

- Power up the unit and wait until loading is finished.
- Press and HOLD the RETURN key on the front keypad.
- Press the UP ARROW to confirm SYSTEM RECOVERY
- Press the RIGHT ARROW to choose YES

2.3. Restore the EtherDVB to Factory Defaults

To restore the unit to factory defaults, choose **File Management** and **Delete** the file **config.xml**

etherdVB

Status
System Information
Streams Active

Devices
Device Summary
encoder://1
dVB://0

Programs
Program Listing

Administration
Server Settings
Defaults

File Management
Web Server
System Log
SAP Server
Accounts
Network
Logout <admin>

About
DVB to IP GW
EtherDVB

File Manager

File name	Size	Action
config.xml	2921	Delete
estream-1.9.98	10666868	Delete

10.456 MBytes used, 364.312 MBytes free, 2.790 % used

Upload using web browser

Choose File no file selected Upload a file

Status	TFTP Server IP	File Name	Action
Idle	<input type="text"/>	<input type="text"/>	Fetch

2.4. Update the EtherDVB with New Software

To update the unit with new software, upload the new image to the EtherDVB using the **File Management** page.

The EtherDVB will boot the latest image present, so you can have earlier images stored on the unit.

2.5. Obtaining Technical Support

To obtain technical support on the EtherDVB hardware and software, please see our website at <http://etherdVB.com>