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ADTEC Digital

ad Code ™

Media Ingest Server and Application
Operations Manual

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Document Name: adCode_002

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Chapter 1 - Introduction

Overview

adCode is a media ingest station for MPEG 2 standard definition encode, review and approval of commercial and program material from FireWire (DV25), SDI, analog composite or YC sources. adCode includes control of professional VTRs over serial RS-422 or FireWire for accurate selection of acquisition material. Live feeds from satellite or newsroom sources can also be recorded on command by adCode. If you work in a non-linear editor like Final Cut, you can export directly to adCode without rolling tape in real time. Regardless of your source, adCode provides high quality MPEG 2 SD encoding for the best on-air presentation.

Applications

● **Commercial Insertion:** Encode commercials from tape or directly from Final Cut ready for digital program insertion (DPI) or linear insertion. Review encoded files from any source before they are released to the enterprise.

● **Program Acquisition:** Encode long form material from tape or crash record from satellite.

● **Multimedia:** Create files that provide the best quality playback on any Adtec digital media player.

● **Non-Linear Editing:** Use adCode to offload the rendering process in Final Cut for real-time production of your work for use with video servers or DVD content creation.

Benefits

● **Ingest with less work:** adCode is designed to make the tedious task of media ingest more streamlined and accurate with configurable work profiles that set up parameters with just one click. All you have to do is select your source material, encode and review while adCode copies the approved file where you want it automatically.

● **See what you encode:** Real-time confidence decode of the ingested material lets you immediately see what you have captured with control to abort and re-encode right away. After content is encoded, it can also be reviewed as many times as you want before final approval.

● **Control with accuracy:** adCode can control VTR sources from RS-422 and FireWire for accurate mark in/out of material to ensure that you get what you want.

● **Get the highest quality MPEG 2 SD:** When it comes to the best on-air look, adCode delivers with CableLabs VOD compliant files or ramp up to full frame D1 quality MPEG 2 standard definition video encoded up to15Mbps with Dolby Digital 2/0 (AC-3) and mixed MPEG 1 Layer 2 Musicam audio.

● **Ingest what you need:** adCode can connect to the adManage content management server to provide a prioritized list of commercials which are scheduled for ad insertion. When the file is encoded and accepted, the adManage database is updated with valuable metadata including actual duration, ingest time, operator and optional expiration date.

● **Crash record anytime:** For live "crash recording" from satellite or newsroom sources, simply press encode or schedule a time and duration with adCode to automate the encode process.

● **Encode right from Final Cut Pro:** If you spend most of your day in Final Cut, you will love the way adCode offloads your work using Print To Video for real time and near frame accurate media acquisition over FireWire.

● **Create DPI-ready files:** Whether you currently splice local content into a digital transport stream or you are planning for DPI in the future, adCode can create files that work in both linear ad insertion and DPI ad servers.

Feature Highlights

Encode Features

- SDI: SDI input video with embedded SMPTE 259M AES-EBU channel 1, 2, 3, 4 audio.

- Analog: Composite or YC video

- Dual Stereo analog audio input.

- Dual Stereo Digital AES-EBU audio input.

- Supports mixed, SDI embedded, Analog, AES-EBU, or FireWire audio inputs

- FireWire (DV25): Video, audio and VTR control on one FireWire cable.

- Non-Linear Editors (NLE): Final Cut Print To Video via FireWire or SDI, Composite or YC if third part card (Decklink Pro or equivalent) is available.

- VOD Compliant to MD-Sp-VOD-CEP-101-040107 excluding HD.

VTR Control Features

- Frame accurate Sony Protocol compatible RS-422 control.

- FireWire protocol compatible. Note: Some FireWire decks are not frame accurate and may provide +/- 1 to 3 frame accuracy.

- Source control with Play, Stop, FF, RW, Jog, Shuttle, Set In/Out, Goto In/Out and Duration.

Decode Features

- Composite video and analog audio decode.

- Real time confidence decode during encode with abort.

- Decode playback of encoded file.

- Monitor video from composite or S-Video (YC).

- Select audio track 1 or 2 to quality control both audio tracks.

Availability

Model	Description
adCode Server	• Embedded Linux real time OS. > 80GB internal storage. • Adtec adCode application • Physical 19" width, 1.75" height, 16" depth, 14lbs. weight.

What's Included

- adCode Server, a 1RU encode/decode server.

- adCode Java Application control & configuration software for Windows 2000 or XP, Macintosh OS X (10.2 or greater), and Linux.

- Connection Kit: Five audio removable screw terminal (RST) connectors, power cord, Ethernet cable, serial adapter

- Manual

System Requirements

- **Communication:** 10/100baseT TCP/IP compatible computer network
- **Power:** 70-240 VAC 50-60Hz and 65 Watts (20 Watts typical) of power.
- **Software:** adCode configuration and control application requires one of the following:

Windows 2000 or XP or Linux computer: Intel or AMD 32 bit processor at 2 GHz; 512MB memory; 1024x768 32 Bit color capable graphics card; TCP/IP compatible computer network.

Macintosh OS-X (10.2 or greater) computer: G4 32 bit processor at 1 GHz, G5 64 bit processor (any); 512MB memory; 1024x768 32 Bit color capable graphics card; TCP/IP compatible computer network.

Linux Kernel version 2.4 or later

Front Panel Diagram

LTC
Off: not enabled (default)
Green: present
Yellow: dropping data.
Red: enabled but not present

Audio
Off: not enabled
Green: audio present
Yellow: unstable audio
Red: no audio present

Link (GEM LAN)
Off: no link detected
Green: link active

Video
Off: not enabled (audio only)
Green: video present
Yellow: unstable video
Red: no video present

Control
Off: not enabled
  (no control - crash record)
Green: Enabled, Target responds
Yellow: Enabled, Target in local mode
Red: Target does not respond.

Alarm
Off: no alarm
Yellow: any soft alarm detected
Red: any alarm detected

Encode
Off: not encoding
Green flash: preroll
Green: encoding
Red: encode fail

Alarm
Off: no alarm
Red: any alarm

Power
Off: no power
On: power

Select

Mode

Navigational Keys
Up, Down, Left and Right

Encoder

Decoder

Decode
Off: not decoding
Green flash: preroll.
Green: decoding
Red: decode fail

Alarm
Off: no alarm
Red: any alarm

Storage
Off: No storage traffic
Green Flashing: storage traffic

Escape

Enter

Video
Off: not enabled
  (video transport off, blank=blank)
Green: video is active
  (including blank mode)
Yellow: decode errors
Red: no video active

Control
Off: no control (default)

Busy
Off: no traffic
Green Flashing: traffic

LTC
Off: not enabled (default)
Green: present
Yellow: dropping data.
Red: enabled but not present

Audio
Off: not present
Green: audio present
Yellow: decode erors
Red: audio invalid

Figure 1.1

Back Panel Diagram

Ethernet
10/100 Base T Ethernet. Connect to PC for access to the adCode application. Must be on the same network.

Ethernet
Busy LED - Illuminates when Ethernet activity occurs - yellow

YC OUT
S-Video OUT

C OUT
Composite Video OUT

Decoder Ports

Power - AC Line Input
Standard 3 pin computer power plug. (Auto range 70-240 VAC Input)

Terminal
Typically used for diagnostics.

Ethernet
Link LED - Illuminates when connected to a network - green

Audio 1 OUT
Unbalanced Stereo

**Decoder Audio I/O
SDI I/O
LTC IN**
Not Used

C IN
Not Used

IEEE 1394
Not Used

Decoder RS422
Not Used

YC IN
Not Used

Audio 2 OUT
Not Used

Gigabit Ethernet
Not Used

GigE Busy LED
Not Used

GigE Link LED
Not Used

RS232
Not Used

USB 2.0
Not Used

LTC
Not Used

GP IO
Not Used

1   2

AES Audio (OUT/IN)
Alternate to SDI

1   2

Audio Channels IN
Analog balanced audio input. Stereo pairs (ch1 & ch2)

Encoder RS422
Connect to media source. Must be Sony protocol tape deck interface.

Network/Host Ports

Source Input Options - Source can be a tape deck or an uncontrolled source such as a live feed.

**C IN
(Lowest Quality)**
Composite IN Video Source

**YC IN
(Mid Quality)**
S Video Source

**SDI IN
(Broadcast Quality)**
Serial Digital Input Video and embedded AES audio source.

**Firewire
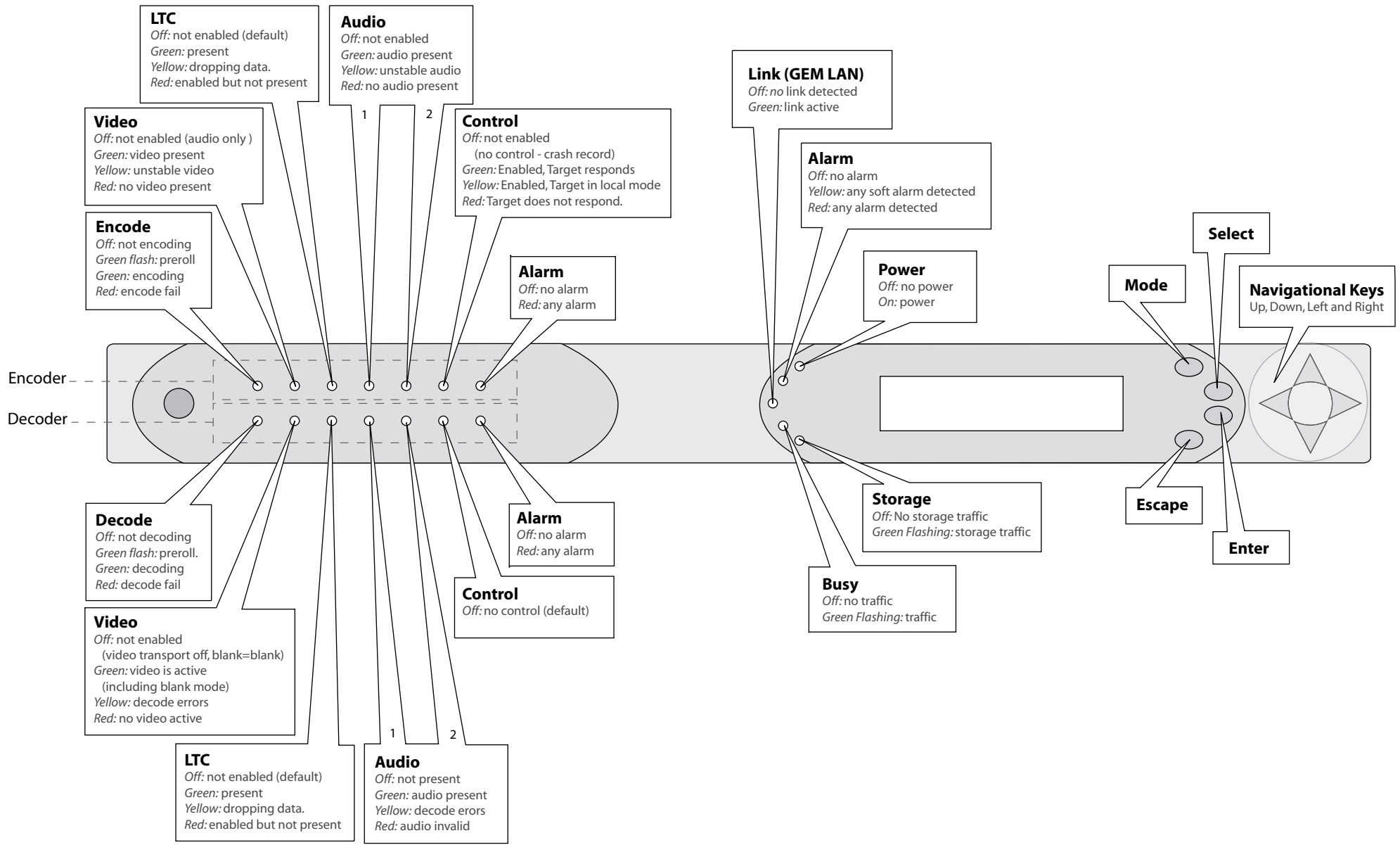(Professional Quality)**
DV25 IEEE 1394 Video and audio source.
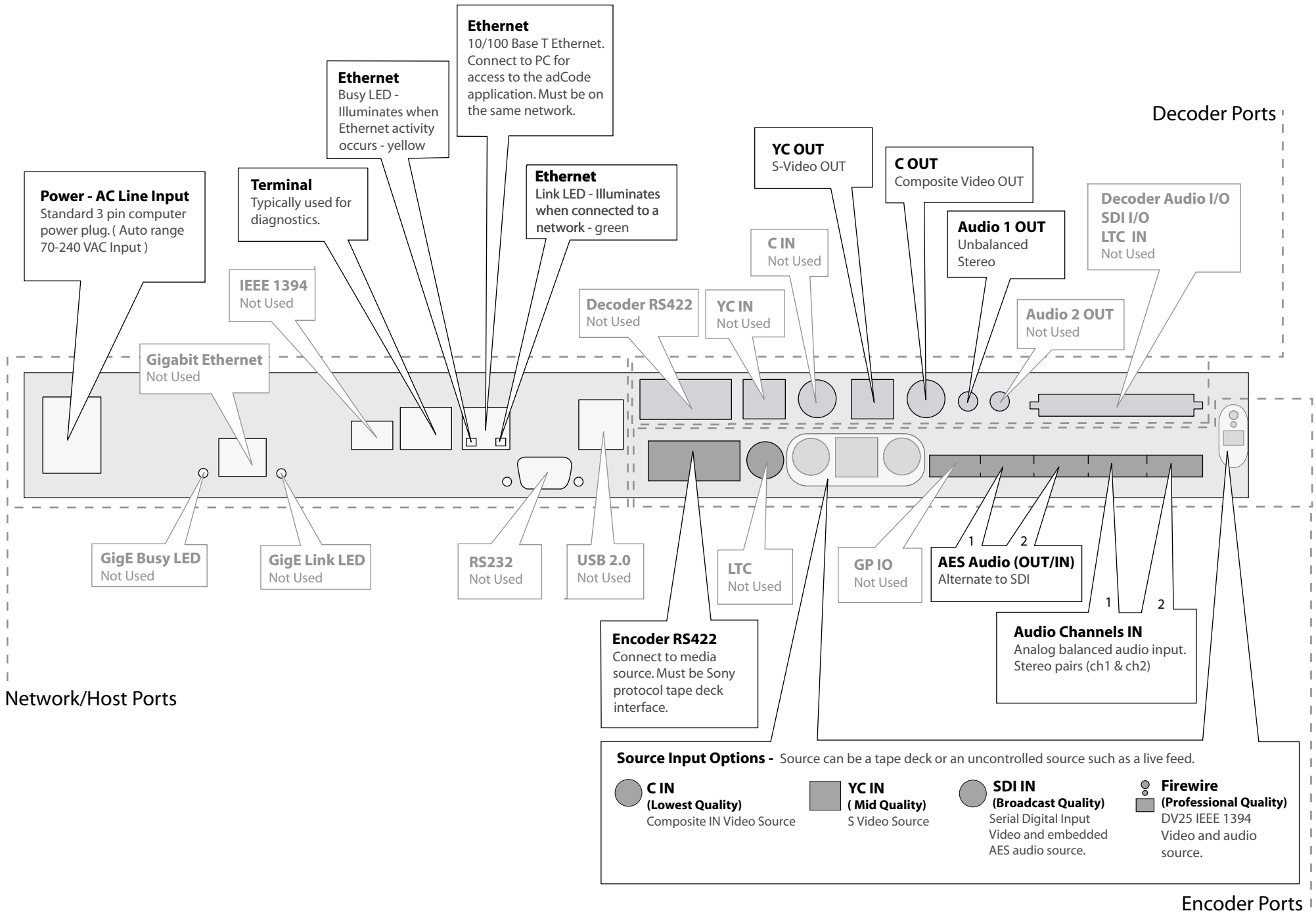
Encoder Ports

Figure 1.2

Chapter 2 - Installation and Setup

This chapter covers the setup of the adCode Server and installation of the adCode Application as well as encode instructions.

Setting up the adCode Server

The adCode server should be installed into a one-rack unit 19" rack slot. Power should be applied to the unit and configured with a valid IP address via the front panel.

To set the IP address:
- Press the "Mode" button
- Enter the IP address of the Server using the "Select" and arrow buttons
- Press "Enter"
- Power down unit

With the power disconnected, connect the appropriate ports/cables for your setup. Refer to the diagrams on the previous pages for port information. Once your cables are connected, apply power to the unit. Confirm that the IP address is correct on your unit and that the Link LED on the front of the unit is lit before installing the adCode application.

Note: Multiple input sources may be connected at the same time. For example, you can connect a VTR via the RS422 at the same time that you have a live feed source connected via FireWire.

Application Installation

For Windows: The adCode software can be installed on Windows XP and 2000 machines. Refer to the system requirements in Chapter 1 for additional information. Insert the installation CD into your CD player. The install program will automatically launch. If it does not, locate the CD drive via "My Computer" and double-click the adCode Installer icon. The wizard will walk you through the installation process. After installation, the icon for the application can be found on the desktop and in the start menu in the adCode folder.

For MAC: The adCode software can be installed on MAC OSX (10.2 or greater). Refer to the system requirements in Chapter 1 for additional information. Insert the installation CD into your CD player. When the CD appears on the Desktop, double-click on the icon and then on the adCode Installer icon. The wizard will take you through the installation process. After installation, the launch icon for the application can be found on the dock and in the Applications/Adtec/bin/ folder.

Getting Started
Launch the adCode application. On the following page is an overview of the adCode application (Figure 2.1). Take a few minutes to review the layout as terms defined there will be used through out the manual.

The adCode Application
The adCode User Interface consists of one main screen. There are additional adCode tools that are independent of the main screen. These tools can be found and launched from the Tools menu of the GUI. These include; Video Controls and Audio Controls.

adCode Application Main Panel

adCode Server Status - Within this window, you have one-click access to all configured profiles. This window also reports the status of the adCode server and lists which profile is connected.

Source Tab -

Within this tab, you can review status information concerning your source. It displays standard control over your VTR with; Go To In, Go To Out, Duration Lock, Play, Stop, FF, RW, Jog and a slide shuttle. If your source is a live feed, then it will allow you to schedule an encode based on the current time and the anticipated time of the desired material.

Status

Interface: The source you are connected to (VTR (RS422), VTR (FireWire) or None).

Mode: The control mode of the VTR (Remote Control or Local Control)

Cassette: The condition of the cassette when using a VTR (Cassette In or Cassette Out)

Activity: The activity of the tape deck. (Stand By On/ Stop or Stand By On/Play)

Video: Denotes the presence of video. A green LED means Video is present. A red LED means that Video is not present.

Audio Only: Relays whether or not the feed is an audio only feed. A green LED means that it is an audio only feed. A gray LED means that it is not an audio only feed.

2nd Audio: Denotes whether or not a 2nd audio feed exsists. A green LED means that it does while a red LED means that it does not.

Review Tab -

Within this tab, you are provided with standard controls for viewing a confidence decode. You may review the encoded file with either audio track should the encode contain secondary audio. It is within this tab that you may either accept an encoded file or reject it.
This panel lists the inventory of MPEG1 & MPEG2 files located on the adCode server. You can review any of these files by highlighting them and then using the above control buttons. You may import files to the adCode server via the "Import File" button below this panel.

Encode Tab -

Within this tab, you can review status information concerning your encode. It also houses meta data fields used primarily in conjuction with Adtec's adManage content management server.

Status

Activity: The activity of the encode. (Idling, Cueing,)

Duration: This reports the current postion of the encode. Ex. An encode set for 30 seconds will count up from 0:00:00 to 0:00:30.

File Type: The encoding parameters selected for the file being encoded.

Rate: The bit rate at which the encode is being recorded.

Metadata

These input fields are used primarily when adCode is configured to work with adManage. If adCode is not configured to work in existence with adManage, then those fields specific to adManage will be grayed out or unaccessible.
The Content ID field is the only meta data input field required for an encode. Additional fields are specific to adManage and will be entered into the adManage database. Refer to Chapter 3 - Configuring adCode Application | Using adCode with adManage for more details.

The Clear button clears all fields within this panel.

The Encode button initiates the encode.

The Encode List is the result of a query to Adtec's adManage content management server. It is a prioritized list of commercials which are scheduled for ad insertion.

Figure 2.1

Chapter 3 - Configuring adCode

Profiles

Profiles are used in this application to provide one-click access to varying settings. This is most useful when using multiple sources and encoding parameters.

adCode comes with 5 profiles in place. These are standard encoding profiles and may meet your needs or you may have the need to create your own profile.

Included Profiles
1 - SDI Tape Deck: RS422, VOD standard.
2 - Composite Tape Deck: RS422, VOD standard.
3 - SDI Input: no source control
4 - Composite Input: no source control (crash record)
5 - Firewire: firewire control, VOD standard.

Creating New Profiles

To create a new profile, browse to File > New Profile. The following screen (Figure 3.1) will appear allowing you to enter a Profile Name and Description. Note that new profiles are based off of the currently selected profile, so select the pre-installed profile closest to your needs before creating a new one. Those parameters are by default listed in the description input box. You may edit that description when you create the profile or at a later time. However, the description does not need to contain any parameters as it is not tied to those parameters and will not update as you make changes to your profile.
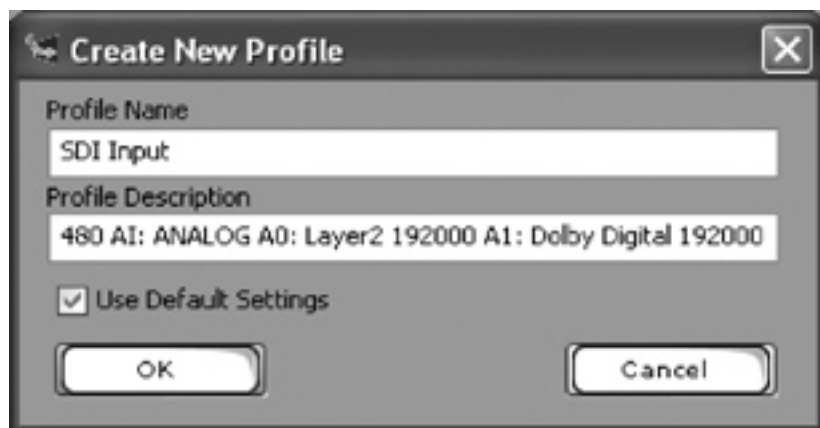

Figure 3.1

Once you have saved your new profile name and description, you will see that the application has disconnected the old profile and reconnected using the new one.

Managing Profiles

You are able to edit and/or manage your profiles in two ways. You can either make configuration edits while connected to the server via the desired profile or select File> Edit Profile> (select your profile name) if you are not connected. Editing while connected immediately saves your profile setting to the server while editing off-line saves the profile to the server the next time you connect to it.

To delete a profile, go to File> Delete Profile. (Figure 3.2)

Figure 3.2

This will allow you to select a profile to delete from a drop down menu. Once the profile is selected, click on Delete. This will delete the profile and close the window. Deleting a profile deletes all of the setting attached to that profile.

Configuring adCode Server

Connection:

The method of connecting to a source is defined within a profile and you will need a completed and correctly configured profile to connect to the adCode server. You can modify one of the default profiles provided or create a new one. Go to File > Edit Profile > (the name of the profile you wish to use). This allows you to make changes to the profile without being connected to the server.

Now browse to Configuration > adCode Server and select the Connection tab. (Figure 2.2) The Connections tab allows you to configure your server to application connection as well as additional encoder and decoder parameters.
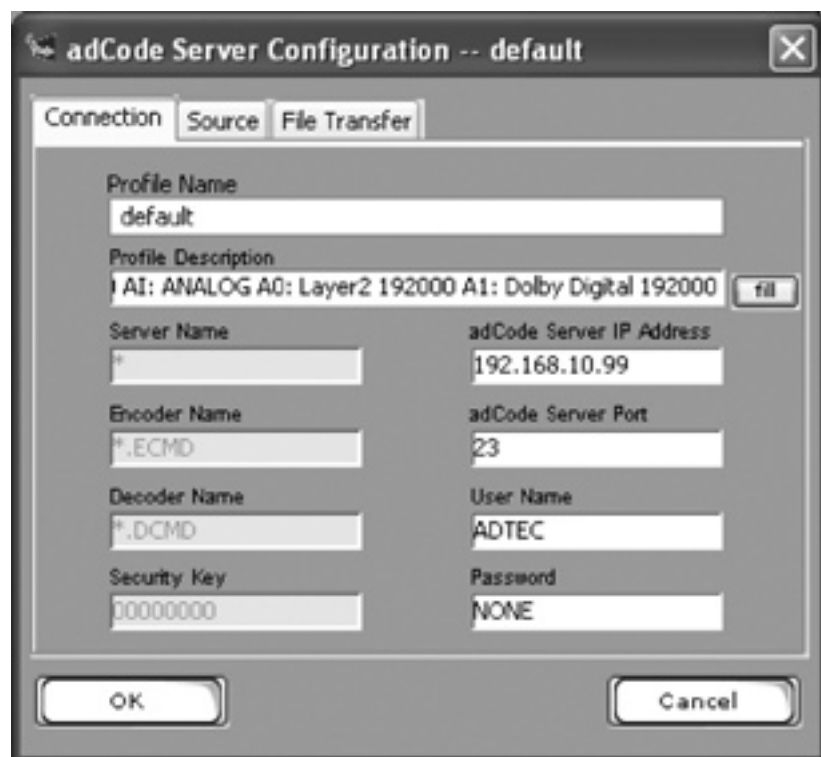
(Figure 2.2)

Profile Name: This field displays the name of the profile you are editing. You are allowed to change the name of the Profile which will result in a new profile being created. This makes it easy to create multiple profiles with very similar settings. The profile name should be kept to under 35 characters. Spaces are allowed.

Profile Description: This description will help you distinguish this profile from others with a brief text description. The fill button next to the input box will automatically fill this box with critical values of the profile (ex. encode rate, etc).

Server Name: The name of the adCode Server. As of this release, this input box is read-only. In future versions, you will be able to name the server.

Encoder Name: The name of the encoder within the adCode Server. As of this release, this input box is read-only. In future versions, you will be able to name the encoder.

Decoder Name: The name of the decoder within the adCode Sever. As of this release, this input box is read-only. In future versions, you will be able to name the decoder.

adCode Server IP Address: This is the IP address of your adCode Server.

adCode Server Port: This is the telnet port number for the adCode server.

**Username:** The telnet user name.

Password: The telnet password.

Once you have configured these fields, click on the OK button. This will save your settings and close the connection tab screen. With correctly configured connection settings, you may now connect the adCode application and server. To do so, go to File > Connect > and select the profile name you configured or simply click on the profile name in the drop down list located within the top status bar of the user interface. Both actions will attempt to connect the application with the server. When you are connected, you will see the word CONNECTED appear in the adCode server status panel next to the header adCode Server. Next, you will need to configure a source to encode from.

Source:

Sources can be any Sony protocol tape deck or a live feed such as satellite or a newsroom source.

To configure your source, got to Configuration > adCode Server. Select the Source tab. (Figure 2.3)
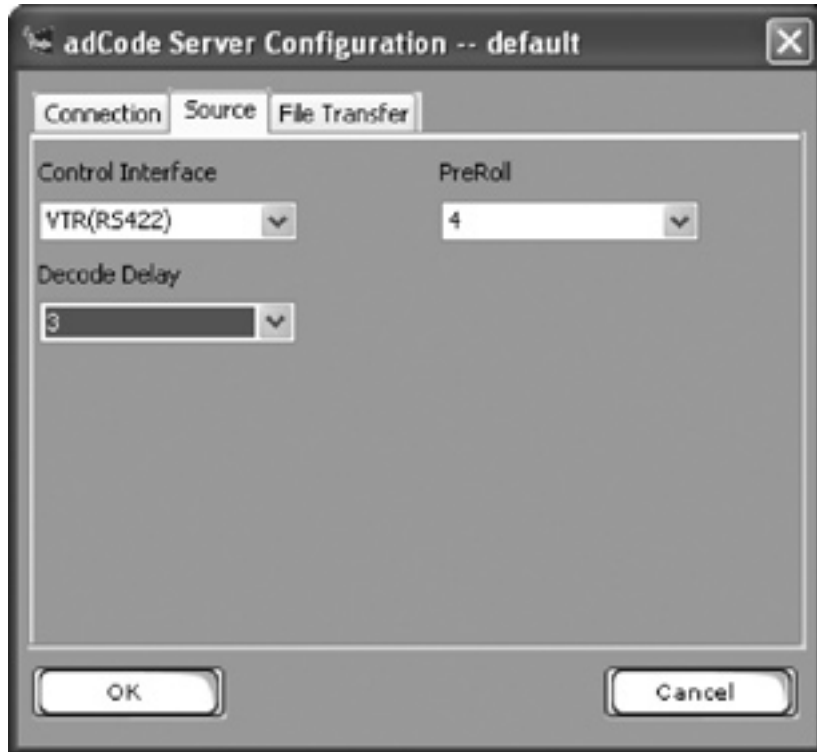
(Figure 2.3)

Control Interface: Select the type of source input you will be using.

None should be selected if you are recording from a live feed (crash recording).
VTR (RS422) should be selected when connecting a tape deck via RS422.
VTR (FireWire) should be selected when your source is a VTR connected via FireWire.

Note: To have source control over the VTR via the adCode application, your VTR control switch must be set to Remote.

PreRoll: Select the number of seconds to pass before encoding begins. This enables the tape to become stable prior to encoding.

Decode Delay: The decode delay designates the amount of time between the completion of the encode and the playback of the decode. Selecting Off turns off the automatic playback. Selecting 0 results in the fastest playback. All other values are noted in seconds.

Select your preferences and click on the OK button. Once you have a correctly connected source, you will see its status noted in the Source Tab of the application. Connect to the server and check the status information. Refer to the adCode Application Main Panel illustration in Chapter 1 for details on status. Once you have correctly configured the Connection and Source, you will need to configure the File Transfer Settings.

File Transfer:

The File Transfer tab (Figure 3.5) allows you to choose one of three options for managing and saving encoded files. Go to Configuration > adCode Server. Select the File Transfer tab.
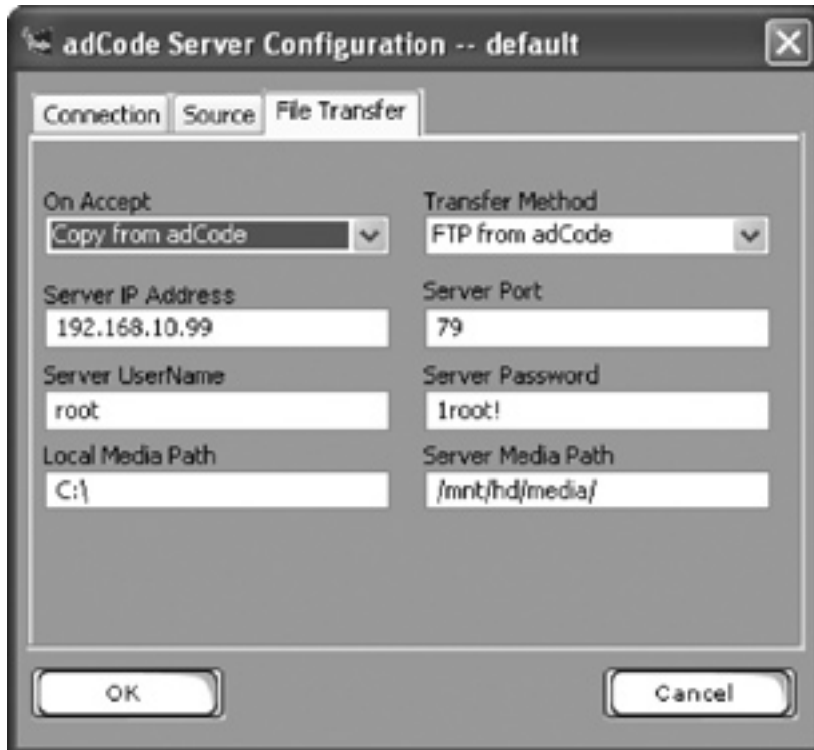

Figure 3.5

On Accept: Select what you want done with the file once it has been reviewed and accepted.

Leave on adCode: This option will save the file to the adCode server only.
Copy from adCode: This option will save the file on the server and transfer a copy of the file to a location you can designate.
Move from adCode: This option will transfer the file from adCode to the location you designate leaving no copy on the adCode server.

If you select to Copy or Move the encoded file, you will need to designate a transfer method and path.

Transfer Method: The current method of transfer is limited to FTP from adCode. Additional options will become available in future releases.

Source IP Address: This is the IP address of the adCode Server.

Source Port: This is the port of the adCode server used for FTP.

Server Username: The FTP username.

Sever Password: The FTP password.

Local Media Path: This field lists the local media path of the adCode Server

Server Media Path: This field denotes the path to which files should be saved on the adCode server.

Encoding a File:

Once the connection and source have been configured correctly, you are ready to encode a file. There are three basic steps to encoding the file: Connect, Source, Encode and Review. Recording from a VTR and Crash Recording vary and are described separately.

VTR Source Encode

Connect - Step 1

To begin the encode process, go to File > Connect > and select the profile you wish to encode with. Confirm that your adCode Server reports back as CONNECTED.

Source - Step 2

Prior to encoding a file, you will be using the main panel of the application to verify and control your source. At the top of the Source panel, confirm that the Interface, Mode, Cassette, Activity, Video, Audio Only and 2nd Video settings correctly reflect the type of encode you wish to make.
The position of the VTR (LTC) will be displayed in the Current Position input box. Use the standard VTR and slide shuttle controls to locate your IN position.
To mark this as the IN position, click on the Set IN Button. That will fill the In input box with the value from the current position input box. Then set your encode duration. You can enter it manually or use the quick duration buttons (15s, 30s, 60s or 120s). You can also customize these quick duration buttons to any length of time. See Chapter 3 on Configuring adCode Application > Duration Markers for more details. Selecting a duration will automatically fill the OUT input box.

Encode - Step 3

In the encode tab verify the status information at the top of the tab. Then enter a name for the file you wish to encode in the Content ID input box. **Should we make a note about the length of this name when using with edje, etc?** There are no limits on the size or characters of the file name. Do not include the file extension as adCode automatically appends the file name with the proper extension. The Content ID is all that is required to encode a file. The other fields located within the Encode Tab are meta data fields used in conjunction with Adtec's adManage content server. If your adCode Server is not configured to work with adManage then these fields will be grayed out or inaccessible.
To encode the file, click the ENCODE button. The status of the encode is shown in the top of the tab. The activity status, the length of the encode, the encoding parameters and the bits per second of the encode is shown. When the file has completed encoding, you may review it before accepting or rejecting it.

Review (confidence decode) - Step 4

While the file is being encoded, you have the ability to abort the encode by clicking on the Reject button within the Review tab at any time. To view a confidence decode, you will need to have a monitor set up specifically for the decoded file to play through and it should be connected to the YC or C Out decoder port and the Audio 1 Out port if audio is present. Within the Review tab, you have standard VTR controls to manage the file. Unless you have the decode delay turned off, the decode will automatically begin playback. If the file is as you intended, you can accept the file by clicking on the Accept button. Accepting the file will save the file for you. The location of the saved file depends on the File Transfer setting previously configured. To edit those settings, refer to the previous section. If it is not as intended, then click the Reject button and start the process again beginning with Step 2.

Live Feed Encode

Connect - Step 1
To begin the encode process, go to File > Connect > and select the profile you wish to encode with. Confirm that your adCode Server reports back as CONNECTED.

Source - Step 2
Prior to encoding a file, you will be using the main panel of the application to verify your source. At the top of the Source panel, confirm that the Interface setting reads as NONE :Schedule encode mode.
The current time will be displayed in the Current Position input box. Enter the time you wish to start your encode into the In input box. Then set your encode duration. You can enter it manually or use the quick duration buttons (15s, 30s, 60s or 120s). You can also customize these quick duration buttons to any length of time. See Chapter 3 on Configuring adCode Application > Duration Markers for more details. Selecting a duration will automatically fill the OUT input box.

Encode - Step 3
In the encode tab verify the status information at the top of the tab. Then enter a name for the file you wish to encode in the Content ID input box. **Should we make a note about the length of this name when using with edje, etc?** There are no limits on the size or characters of the file name. Do not include the file extension as adCode automatically appends the file name with the proper extension. The Content ID is all that is required to encode a file. The other fields located within the Encode Tab are meta data fields used in conjunction with Adtec's adManage content server. If your adCode Server is not configured to work with adManage then these fields will be grayed out or inaccessible.
To encode the file, click the ENCODE button. This will schedule your encode to occur at the time designated. A popup box will appear letting you know that the encode has been scheduled. You can only schedule one encode at a time. Once the file begins encoding, the status of the encode is shown in the top of the tab. The activity status, the length of the encode, the encoding parameters and the bits per second of the encode is shown. When the file has completed encoding, you may review it before accepting or rejecting it.

Review (confidence decode) - Step 4
While the file is being encoded, you have the ability to abort the encode by clicking on the Reject button within the Review tab at any time. To view a confidence decode, you will need to have a monitor set up specifically for the decoded file to play through and it should be connected to the YC or C Out decoder port and the Audio 1 Out port if audio is present. Within the Review tab, you have standard controls to manage the file. Unless you have the decode delay turned off, the decode will automatically begin

playback. If the file is as you intended, you can accept the file by clicking on the Accept button. Accepting the file will save the file for you. The location of the saved file depends on the File Transfer setting previously configured. To edit those settings, refer to the previous section. Once a file has been accepted you can schedule a new encode from a live feed.

Configuring adCode Application

Using adCode with adManage

Using adCode in conjunction with adManage will streamline your encode process for files to be distributed via adManage. When properly configured, adCode will query adManage and provide a prioritized list of files that are scheduled for ad insertion. When the file is encoded and accepted, the adManage database is updated with valuable metadata including actual duration, ingest time, operator and optional expiration data.

To configure adCode to work with adManage you will need to modify your ODBC settings as well as your adCode application settings. Refer to Appendix D for help with setting up ODBC first. When that is complete, go to Configuration > Application > adManage tab. (Figure 3.6)
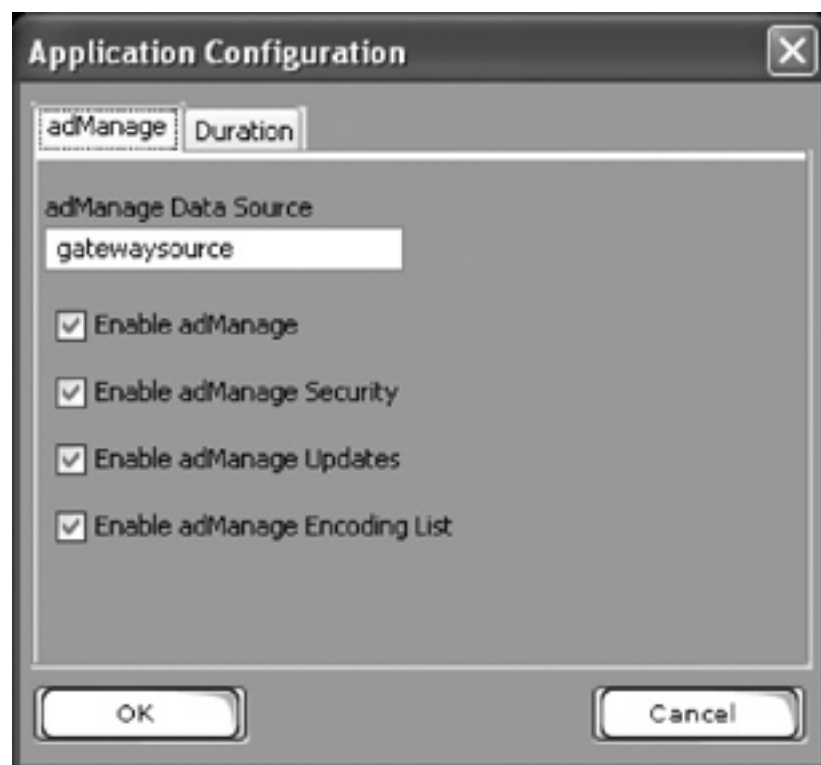

Figure 3.6

In the adManage Data Source input box, you need to enter the name of your Data Source as outlined in the ODBC settings as the DSN Name. Checking the following checkboxes enables these items while unchecking them turns them off.

Note: Enabling adManage prior to correctly configuring the ODBC settings will keep the application from launching correctly.

Enable adManage: Allows adCode to talk to adManage

Enable adManage Security: Requires users of adCode to login using their adManage username and password before being able to access adCode.

Enable adManage Updates: Enables adCode to make database updates in adManage for Meta Data (Advertiser Name, Description, Duration, etc.)

Enable adManage Encoding List: Turns on a query of adManage for files that need to be encoded and lists them in Encode List window of the adCode Main Panel.

From the adCode application main panel, you will be able to view the following information for each file within the Encode List. Some of these fields can be changed and can be saved back into adManage. All of this information is pulled from the traffic schedules of the adManage content management server.

Content ID: The name of the file to be encoded or the name of already encoded files. **Should we make a note about the length of this name when using with edje, etc?**

Advertiser/Program: The name of the advertiser or program.

Description: A brief description of the encoded file or spot.

Expiration Date: Defines when this file can expire. This date is used by the adManage Content Expiration Service to help maximize the use of available disk space on each ad inserter.

Never Expire: Check this box if you do not want this file to expire.

Encoded Date/Time: The date and time stamp when the file is encoded.

Schedule Date/Time: This denotes when the file is scheduled for play.

Scheduled Channel/Headend: This shows which channel and headend the file is scheduled for next.

Operator: This is a meta data field to assist in keeping track of work flow.

Duration Markers

The duration markers located in the Source tab of the adCode application main panel can be customized. To configure these settings, go to Configure > Application > Duration Tab. (Figure 3.7) For each button, modify the duration and title to reflect your needs. Click on the ok button to save and return to the adCode panel with the new settings.

(Figure 3.7)

adCode Tools

Video & Audio Controls

adCode has Video and Audio control panels which can be launched by going to Tools > and choosing either Video Controls (Figure 3.8) or Audio Controls (Figure 3.9).

Video Controls:

The Video Control panel allows you to adjust Brightness, Contrast, Saturation and Hue. You can modify these settings per encode without changing the profile parameters. Clicking on the Defaults button at the bottom of the panel will return the levels to those selected in the Encoder Video Defaults configuration screen.

Figure 3.8

Audio Controls

The Audio Control panel allows you to adjust the Audio Levels for Channels 1&2 and Channels 3&4. There is a mute checkbox for each set and like the Video Controls, you can modify these settings per encode without changing the profile parameters. Clicking on the Defaults button at the bottom of the panel will return the levels to those selected in the Encoder Audio Defaults configuration screen. You can customize these defaults.
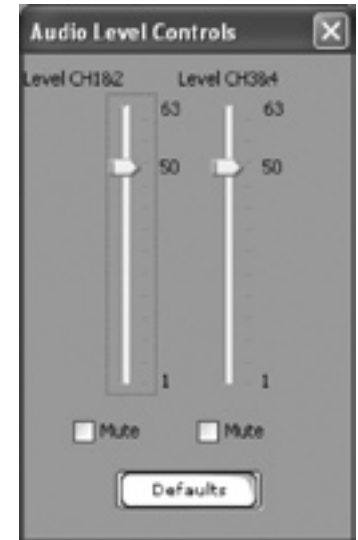

Figure 3.9

adCode IFP

adCode comes with a built in "In Field Program" to upgrade the firmware in the adCode server. Upgrades are deployed via our FTP server. Once you have the upgrade file located on the same LAN as your adCode Server, go to Tools > IFP - Upgrade Server (Figure 3.10). Enter the location of the file or use the Browse function to locate it. Then click on the Program Application button. Once the server has been upgraded, you will need to restart both the server and the application.
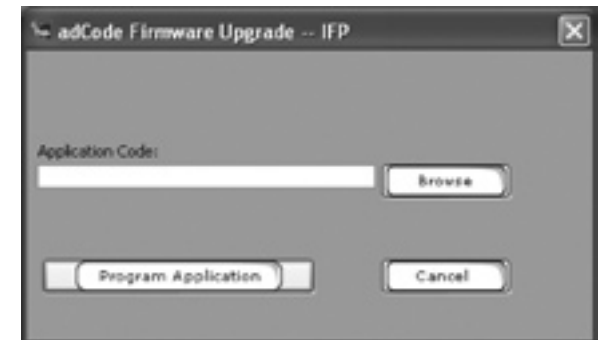

Figure 3.10

Appendix

A   -   Contacting Customer Support

B   -   adCode Technical Reference

C   -   adVantage - The Adtec Ad Insertion Enterprise Solutions

D   -   Application Notes - Traffic & Billing Central

E   -   Application Notes - Media Ingest

F   -   Configuring ODBC

A - Contacting Customer Support

Technical Support and Customer Service includes troubleshooting product/system functional operations concerning Adtec equipment ,embedded systems and single device issues; Service Order generation, processing and tracking; Warranty claim processing; and on-site system evaluation and maintenance. Technical Support plans do not include customer training programs. Programs incorporating customer training are defined in the Training Services Policy. Customer Services technicians provide limited instruction during a support call/email/fax in order to facilitate checking for proper equipment operation.

Telephone and Email Support

Telephone: 615.256.6619
Email: support@adtecinc.com
Internet: www.adtecinc.com/supportrequest/

Adtec Digital offers telephone, email and fax support, warranty and service related inquiries during normal business hours (9:00 AM to 5:00PM Central Standard Time CST, Monday thru Friday, except holidays. Support Requests can also be submitted on-line.

All inquiries will be processed in the order in which they are received and by the criteria outlined in the Call Response Order. Inquiries and inquiry responses made after 5:00 PM (CST) weekdays, Saturday, Sunday or on an Adtec recognized holiday will be processed the next business day in the order received.

Callers on hold and returned calls will be prioritized by the following criteria:

- Priority-24 Subscription Customers
- Standard-Priority Subscription Customers
- All customers that have purchased Installation & Training, within 90 days of the installation
- Adtec Certified Operators (ACO)
- Limited Level Support, Warranty & Service Requests
- Multi-device system installations that have purchased Installation & Training from Adtec
- Distributors
- System Integrators
- Multi-device systems
- Single device users

Information needed for Support

To help expedite the troubleshooting process, please be prepared to provide the following information to the support representative.

Product(s) affected: Please provide a list of the Adtec Products involved including the Revision Number for each affected product.

Description of the Problem: Please include a detailed description of the problem. Include the approximate time and day the problem occurred, the spot ID of the material being inserted and what the operator reported about the incident. It is also helpful to note any recent changes to the system. More information is always better than too little information.

Your Contact Data: Please include contact information so we can reach you to discuss how to fix the problem, additional troubleshooting steps that are required or to gather more complete information regarding the problem. Please include your facility name (or call letters), your name, title, email address, telephone number, hours of work, and other contact persons if you are not available.

Advanced Support Plans

In addition to our basic Inquiry Response Policy, Adtec offers two advanced levels of priority inquiry support: Standard-Priority and Priority-24. The Standard-Priority & Priority-24 plans provide guaranteed* response times with the Priority-24 plan offering after hours and holiday support. Standard-Priority support is included with the Adtec Certified Operator (ACO) training. Contact Adtec Sales to upgrade your current support plan.

SUPPORT PLAN	PRIORITY –24	STANDARD-PRIORITY	LIMITED
Hours	24 Hours/Day 7 Days/Week	"9 AM – 5 PM (CST), Excluding Weekends & Holidays"	9 AM – 5 PM (CST) Excluding Weekends & Holidays
Call Response Time: Guaranty*	Same Day: 2 Hours (1st in order of call list)	Same Day: 4 Hours (2nd in order of call list)	48 Hours
Discounted Site Visits	25%	10%	None
Discounted Training	25%	10%	None
Repair Service: Guaranty*	1 Day Turnaround	3 Day Turnaround	None

One month free service extension will be awarded if Adtec fails to meet its service guarantee.

Standard-Priority Support Plan

Customers can improve upon our normal call processing times and can expedite inquiry support responses through our subscription Standard-Priority service plan.   Under this plan all telephone inquiries are guarantied** a telephone response of no more than 4 hours after they are received (within the designated hours of operation). Telephone inquiries received by 4:00 PM (CST) on weekdays, excluding Adtec holidays are guarantied a same-day telephone response. However, inquiry responses may be made after hours until 8:00 pm (CST). Email and fax inquiries are limited in scope to normal business hours, excluding holidays. Standard-Priority customers are entitled to a 10% discount on site visit and training charges after the initial system/ product installation and training. Standard-Priority customers also receive a 3-day turnaround time guaranty* on warranty and non-warranty repairs on Adtec manufactured equipment, excluding Studio Encoders.

Priority - 24 Support Plan (24 Hour)

In addition to our Standard-Support plan, after hours, weekend and holiday support is available with the Priority-24 support plan. This plan is a subscription only service available for service inquiries 24 hours a day, 7 days a week. All telephone inquiries are guarantied* a telephone response of no more than 2 hours. Email and fax inquiries are limited in scope to normal business hours, excluding holidays. Calls after 5:00 PM will be forwarded to a Customer Services representative on call. Priority-24 customers are entitled to a 25% discount on site visit and training charges after the initial system/product installation and training. Priority-24 customers also receive a 1- day turnaround time guaranty* on warranty and non-warranty repairs on Adtec manufactured equipment, excluding Studio Encoders.

(B) - adCode Technical Reference

Video Inputs
• Composite (BNC)
• S-Video (4 Pin Mini-Din YC) analog to digital conversion 9 bit with scaling Horizontal and Vertical 16 tap filters.
• SDI input video with embedded SMPTE 259M AES-EBU audio on BNC.
• FireWire: DV25 with PCM audio and control on Mini-Firewire connector.

Video Outputs
• Composite (BNC)
• S-Video (4 Pin Mini-Din YC)

VBI Support
• Line 21-Closed Captioning DVS053 Rev 6
• V-Chip DVS157
• Teletext: NABTS-DVS053 Rev 6 and PAL
• Neilson Source Identification (SID) DVS053
• Automated Measurement of Lineups (AMOL) DVS053

Video Encoding and Decoding
• MPEG 2 SD 1 Profile: SIF ISO 11172-2
• MPEG 2 SD 2 Profile: Adaptive Field Frame (AFF) ISO13818 MP@ML
• MPEG 2 SD Profile: AFF ISO13818 422P@ML (encode only option)
• Encoder Filters: Temporal; Spatial Vertically and Horizontally Temporal and Horizontal Spatial can be concurrent
• Chroma filtering and full scaling
• Video bit rates: MPEG 2 SD 300K-15 Mbs
• Video bit rates: MPEG 1 SIF 300K-5 Mbs
• Multiplexing Formats: Program and Transport
• MPEG Program Specific Information (PSI) Table Compliance: PAT, PMT; All PIDs user definable
• DVB Program Information (PI) Table Compliance: SDT, NIT; All PIDs user definable
• SCTE 35 Splice Point injection

Video Resolutions
• Per Macro Block (16x16) Note: Non-standard Vertical resolutions may adversely effect STB decoders, PC decoders have more flexibility when scaling.
• Horizontal NTSC examples: 720x480 (Full D1 NTSC), 544x480, 528x480, 512x480, 496x480, 480x480, 352x480 (Half D1 NTSC).
• Vertical NTSC example: 720x 464
• Horizontal and Vertical example: 528x464 etc.
• PAL resolutions examples: 720x576 (FullD1 PAL), 720x560, 544x544 etc

Audio Specifications

Audio Inputs
• Analog Audio 1 Stereo Balanced (5 Pin Removable Screw Terminal)
• Analog Audio 2 Stereo (SAP) Balanced (5 Pin Removable Screw Terminal)
• User level control on Analog inputs
• AES-1 digital audio (PCM or uncompressed) for Dolby AC-3 channel 1,2 encoding (5 Pin RST - 110 Ohm).
• AES-2 digital audio (PCM or uncompressed) for Dolby AC-3 channel 3,4 encoding (5 Pin RST - 110 Ohm).
• SDI embedded with video per SMPTE 272M A, B, C, (BNC)
• Digital PCM audio via FireWire
• Audio inputs can be mixed, one Analog, one AES-EBU, or One AES-EBU and one SDI etc.

Audio Outputs
• Primary Stereo unbalanced (1/8" phono) selectable between audio tracks 1 and 2 decode.
• Fixed unity audio level output

Audio Encoding and Decoding
• Dolby Digital AC-3 encoding from analog, SDI embedded audio or AES input.
• MPEG 1 Layer 1 Profile: ISO11172-3
• MPEG 1 Layer 2 Profile: ISO13818-3
• Audio Delay: Adjustable PTS delay up to 700 milliseconds
• 24 Bit A-D Conversion
• Audio Sampling: 16, 22.05, 24, 32, 44.1 and 48 KHz
• MPEG 2 Audio Bit Rate: 64-384 Kbs
• Dolby Digital AC-3 Bit Rate: 64-640 Kbs

adCode Server

• Embedded Linux real time operating system with 80GB internal storage.
• Power: 70-240 VAC 50-60Hz and 65 Watts (20 Watts typical) of power.
• Size: 1RU rack mount chassis. 19" width, 1.75" height, 16" depth - need cm
• Weight: 14 lbs - need KG
• Environmental: Active cooling (Fans), 0 to 90 Degrees Fahrenheit, Less than 70% RH, Non-Condensing

Communications
• Ethernet 10/100 (RJ-45) Half Duplex, Full Duplex, Auto Negotiate
• Ethernet Protocols: Telnet, FTP, Adtec command API.
• Serial Communications: 2-RS232 (38400-115,200K, 8, 1 N)
• Automatically copy files from adCode server to client PC using FTP.

Front Panel
• Keypad: Mode, Select, Enter, Escape, Up, Down, Left, Right
• Blue Translucent LCD (20 character by 2 row)
• Host Status LEDs   Power, Alarm, Link, Busy, Storage.
• Encode Status LEDs: Encode Active, Video Present, LTC Active, Audio 1 & 2, Control, Alarm.
• Decode Status LEDs: Decode Active, Video Present, LTC Active, Audio 1 & 2, Control, Alarm.

adCode Application

adCode configuration and control application requires one of the following:
• Windows 2000 or XP or Linux computer: Intel or AMD 32 bit processor at 2 GHz; 512MB memory; 1024x768 32 Bit color capable graphics card; TCP/IP compatible computer network.
• Macintosh OS-X (10.2 or greater) computer: G4 32 bit processor at 1 GHz, G5 64 bit processor (any); 512MB memory; 1024x768 32 Bit color capable graphics card; TCP/IP compatible computer network.

C - Ad Insertion Enterprise Solution

1 - adManage/TBGS
At the core of the adVantage solution is the TBGS traffic and billing gateway server and the adManage software application. This is the gateway that invisibly coordinates the complex flow of media and data across the enterprise. adManage streamlines the process of getting the right ads, schedules and verifications to the right places at the right times, resulting in high customer satisfaction levels and increased revenues. The powerful server architecture and SQL database offers rapid access to current data via the browser interface supporting customizable alarms with notification via paging, email or text messaging.

2 - Traffic and Billing
adManage merges local and interconnect schedules to create a master insertion schedule for each channel at each headend. After commercials are played, adManage creates and sends separate verification files to local and interconnect traffic and billing systems facilitating seamless media and data management across your enterprise.

3 - eyeMonitor
The eyeMonitor interface graphically displays the status of all headends and channels in the enterprise on a single screen. It provides visibly better real time status and highlights exceptions so that corrections can be easily made.

4 - autoDialer
The autoDialer application provides a back channel for schedule distribution and verification retrieval over a simple phone line. This feature is essential for disconnected remote headends and adds redundancy in networked headends, all for the price of a phone call.

5 - adCode
New media is ingested and prepared by adCode and sent to adManage for storage and distribution to the headends. Sources can be tapes, DVDs or over FireWireTM from nonlinear editors. The architecture of adCode supports Cable Labs VOD and SCTE encoding standards, an important aspect that future proofs your investment. Use adCode to seamlessly bridge the transition from analog and SDI digital insertion to DPI. adCode prepares the highest quality DPI ready media in the industry. Compatibility with other ad insertion systems is standard innovation at Adtec.

Headends
In an ad insertion enterprise, there are likely to be several different types of headends with varying levels of connectivity available. From networked LAN/WAN to satellite to disconnected remote, adManage can work with them all. Flexibly better by design.

6 - Networked Headend
A networked headend has an existing broadband LAN/WAN connection, such as a T1 line or cable modem. adManage uses this connection to send ads and schedules and receive verifications and status monitoring. Ad insertion is performed by Adtec's scalable single-channel Duet or Duet-SDI. Since each Duet is a single-channel modular unit that is totally self-contained, the system is fault tolerant by design. Media distribution within the headend is invisibly performed via multicast techniques making it available to all inserters all the time.

7 - Disconnected Remote Headend
What can you do when a headend is so small or remote that it has no economical network connection and satellite is not an option? Media can be ingested by adCode and burned onto a CD or DVD and sent to the headend where the disk is simply placed into a Duet-DVD unit. The Duet-DVD automatically makes all the ads available to every unit at the headend. At the remote headend, adManage performs schedule distribution, status monitoring and verification retrieval over standard phone lines (PTSN) via dial-up modem through autoDialer.
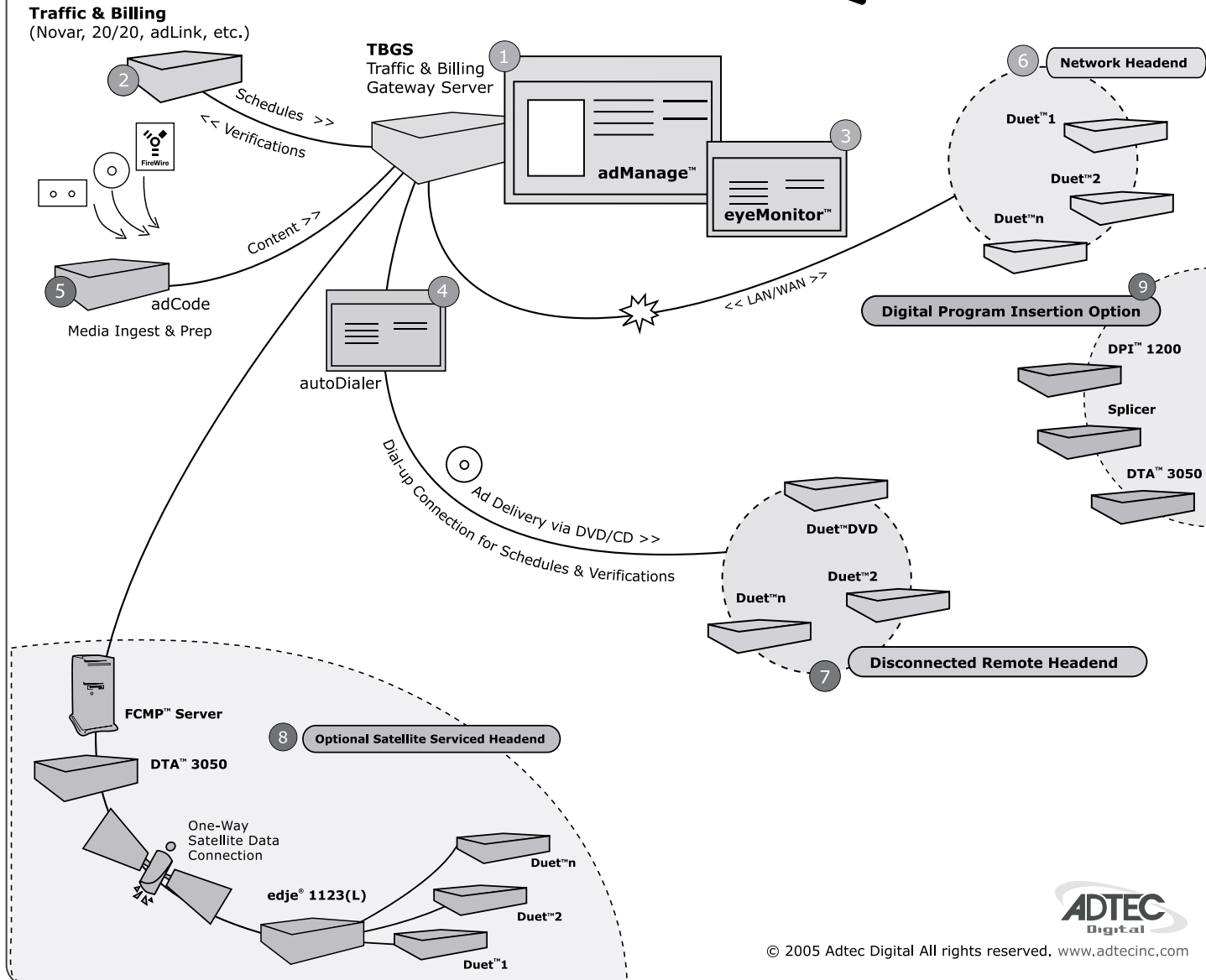
8 - Optional Satellite Serviced Headend
In headends without a network connection, media and data distribution can easily be achieved via satellite. Here's how it works. At the central office, adManage sends the media and schedules to Adtec's FCMP server which prepares the data by adding forward error correction then multicasting it to the Adtec DTA-3050 multiplexer for encapsulation and encrypting prior to the multicast uplink. At each satellite headend, an Adtec edje-1123 with built-in satellite data receiver unscrambles and distributes the media to the Duet, Duet-SDI or DPI-1200 units. At the satellite headend, adManage performs schedule distribution, status monitoring and verification retrieval over a simple phone line with a dial-up modem through autoDialer.

9 - Digital Program Insertion Option
Adtec's DPI-1200 digital-into-transport (DIT) ad server takes the place of up to twelve Duets. Designed for the all-digital headend, the DPI-1200 will deliver seamless splicing effortlessly in concert with Duets in your analog systems. The DPI-1200 can deliver up to twelve programs to the ad splicer. adManage transparently delivers media and schedules and retrieves verifications and status monitoring in the DPI environment just as in any other type of headend. The adGroomer provides automated transcoding of media from legacy encoders making the media compliant with Cable Labs VOD standard which has been chosen by major MSOs as the standard for DPI media ingest.

ad**Vantage**
Enterprise Ad Insertion Solution

Traffic & Billing
(Novar, 20/20, adLink, etc.)

TBGS
Traffic & Billing
Gateway Server

(1) **adManage™**

(3) **eyeMonitor™**

(2) Schedules >>
<< Verifications

FireWire

Content >>

(5) **adCode**
Media Ingest & Prep

(4) **autoDialer**

<< LAN/WAN >>

(6) **Network Headend**
Duet™1
Duet™2
Duet™n

(9) **Digital Program Insertion Option**
DPI™ 1200
Splicer
DTA™ 3050

Dial-up Connection for Schedules & Verifications
Ad Delivery via DVD/CD >>

Duet™DVD
Duet™2
Duet™n

(7) **Disconnected Remote Headend**

FCMP™ Server

(8) **Optional Satellite Serviced Headend**

DTA™ 3050

One-Way
Satellite Data
Connection

edje® 1123(L)

Duet™n
Duet™2
Duet™1

ADTEC
Digital

Traffic & Billing Central
Application Notes

ADTEC Digital

Non-Linear Editor (FireWire)
(ex: Final Cut)

VTR via FireWire

adCode™ Server
Media Ingest & Studio Encoder
- Ingest with less work
- Confidence Decode
- Crash Record

VTR via RS422

Satellite Feeds

Monitor for
Confidence Decode

**Traffic & Billing
Gateway Server (TBGS)**
Master Video Library -
RAID 5 Storage -
SQL Database -
autoDialer -

Local Area Network

adCode™ Application
- Control with Accuracy
- One-click Profile Access

LAN/WAN to Connected Headends >>

FCMP™ to Satellite Headends >>

autoDialer (Back Up Connection) >>

adManage™ Application
- Scheduling & Verifications
- Content Management
- Alarm Notification

Traffic & Billing Systems
(Novar, 20/20, adLink)

eyeMonitor™ Application
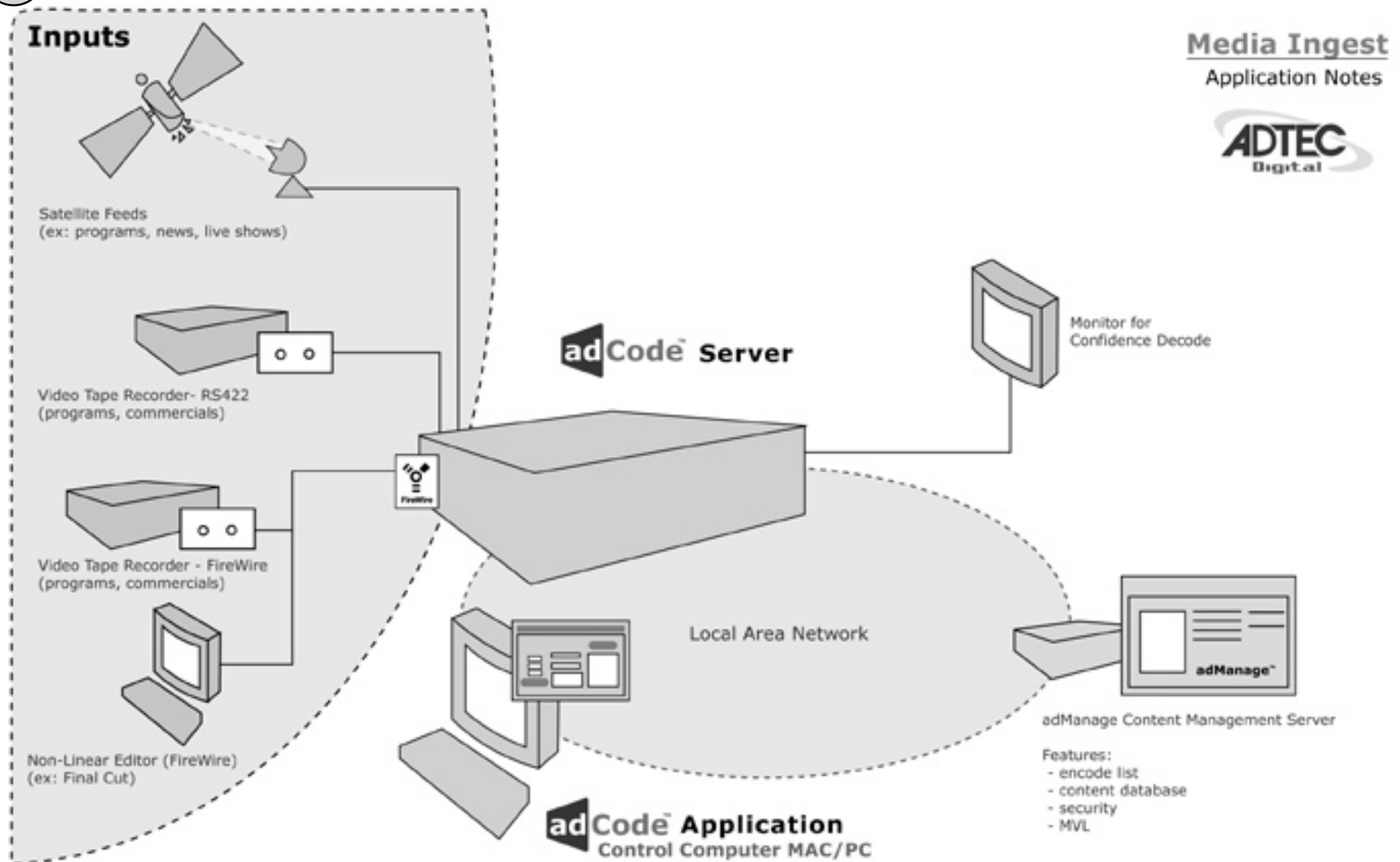- Enterprise-wide Monitoring
- Exception Management

The Adtec commercial insertion enterprise solution centers around the Traffic & Billing Gateway Server (TBGS) which hosts adManage, the Master Video Library and the content management database. adManage merges new local and interconnect schedules to create a master insertion schedule for each channel at a headend. After each commercial insertion is completed, the verification file is created for both the local and interconnect traffic systems. New content is ingested by adCode and released to adManage for distribution as needed by each headend. Enterprise wide monitoring is provided by eyeMonitor which displays the status of commercial insertion and content management for each channel and highlights exceptions for corrective action.

Adtec Digital
408 Russell Street, Nashville, TN 37206
Phone 1.615.256.6619
Fax 1.615.256.6593
www.adtecinc.com

Inputs

Satellite Feeds
(ex: programs, news, live shows)

Video Tape Recorder- RS422
(programs, commercials)

Video Tape Recorder - FireWire
(programs, commercials)

Non-Linear Editor (FireWire)
(ex: Final Cut)

FireWire

Media Ingest
Application Notes

ADTEC
Digital

adCode Server

Monitor for
Confidence Decode

Local Area Network

adManage

adCode Application
Control Computer MAC/PC

adManage Content Management Server

Features:
- encode list
- content database
- security
- MVL

The adCode server and application combine to provide a media ingest station for MPEG 2 standard definition encode, review and approval of commercial and program material from FireWire (DV25), SDI, analog composite or YC sources. adCode includes control of professional VTRs over serial RS-422 or FireWire for accurate selection of acquisition material. Live feeds from satellite or newsroom sources can also be recorded on command by adCode. If you work in a non-linear editor like Final Cut, you can export directly to adCode without rolling tape in real time.

Adtec Digital
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F - Configuring ODBC

The ODBC settings for your computer must be set up to allow for adManage and adCode to communicate.

ODBC installation and configuration for Windows 2000 or XP MySQL Driver:

1. Click on the Start button , and then click Control Panel. Double-click Administrative Tools, and then double-click Data Sources (ODBC).
2. On the User DSN tab, click the Add button.
3. Scroll to and highlight MySQL. See driver installation instructions below if the MySQL driver is not listed. Click the Finish button.
4. On the following screen, modify the following:

Windows DSN name:	gatewaysource
MySQL host (name or IP):	IP address of your TBGS server
MySQL database name:	gateway
User:	gatewaywebuser
Password:	adtec

Click OK to close that panel and Ok again to close the Data Source panel. You will need to restart your computer.

Driver Installation:
If the MySQL driver is not included in the driver list, you will need to install the driver. ODBC Drivers for Windows XP or 2000 can be found on the adCode Installation CD in the Drivers folder.

You will need to install the driver in the ODBC folder located in the C:\Program Files\Common Files\ folder on your computer. Restart your computer and begin again with Step 1.

ODBC installation and configuration for MAC OSX 10.2 or greater MySQL Driver:

1. Open the Finder and locate the ODBC Adminstrator in the Unilities section of Applications. You will need to have administrator access to continue.
2. On the User DSN tab, click the Add button.
3. Scroll to and highlight MySQL. If MySQL is not listed, you will need to install the driver first. See Driver Installation instructions below. Click the Finish button.
4. On the following screen, modify the following:

Driver Installation:
If the MySQL driver is not included in the driver list, you will need to install the driver. ODBC Drivers for Windows XP or 2000 can be found on the adCode Installation CD in the Drivers folder.

You will need to install the driver in the ODBC folder located in the C:\Program Files\Common Files\ folder on your computer. Restart your computer and begin again with Step 1.