

#### 4.6. Decoder Event Status

To examine decoded events, select the Decoder tab and then the Decoded Alerts radio button. The page Decoded Alerts Status page displays two kinds of information about decoded EAS alerts. At the top of the page active EAS alert events are displayed. Below that is the Expired EAS alert events list. The Active event list displays all EAS alerts that have been decoded on the DASDEC that are also currently in progress (between the start and end time for the alert). The following figure shows an example of this page with a single active alert event and one expired event:

Server Name:Development DASDEC

[Encoder](#) **Decoder** [Setup](#)

Decoded Alerts  Forwarded Alerts

User:Admin Server Time:Tue Jul 20 19:55:49 2004 MDT [Logout](#)

**Decoder Decoded Alert Status**

Digital Alert Systems,LLC

Digital EAS Encoder/Decoder

Version:1.0-0

**Currently Active Decoded Alerts**

Chnl	EAS Type	ID	Start Time	End Time	Location
L1 from KSLC/NWS	SVR	78	Tue Jul 20 19:53:00 2004 MDT <b>Decoded</b> Tue Jul 20 19:54:22 2004 MDT	Tue Jul 20 20:38:00 2004 MDT	Utah,UT (049049)

A SEVERE WEATHER WARNING HAS BEEN ISSUED FOR THE FOLLOWING COUNTIES/AREAS: Utah,UT; AT 7:53 PM ON JUL 20, 2004 EFFECTIVE UNTIL 8:38 PM. MESSAGE FROM KSLC/NWS.

[Play Audio Portion](#)

FROM: 2004 Year Jul Month 20 Day TO: 2004 Year Jul Month 20 Day

**Expired Decoded Alerts**

Chnl	EAS Type	ID	Start Time	End Time	Location
L1 from KSLC/NWS	SVR	77	Tue Jul 20 18:14:00 2004 MDT <b>Decoded</b> Tue Jul 20 18:14:38 2004 MDT	Tue Jul 20 18:59:00 2004 MDT	Box Elder,UT (049003)

A SEVERE WEATHER WARNING HAS BEEN ISSUED FOR THE FOLLOWING COUNTIES/AREAS: Box Elder,UT; AT 6:14 PM ON JUL 20, 2004 EFFECTIVE UNTIL 6:59 PM. MESSAGE FROM KSLC/NWS.

[Play Audio Portion](#)

An active event will remain on the active list until it reaches its expiration time, as determined by the event end time, or until it is canceled by another event of the same type and for the same area, that redefines the event duration. Active events are moved to the expired event list as each one finishes. Active events that are not automatically forwarded, present a button to allow manual forwarding. The example above shows the Manual Forward button for the active Severe Weather Warning. Simply click on this button to forward the alert.


The Expired event list lets you examine past decoded alerts for any range of dates. The following figure shows an example the expired alerts list for July 18,2004 through July 20,2004.

Server Name: Development DASDEC

Encoder
**Decoder**
Setup

Decoded Alerts
  Forwarded Alerts

User: Admin
Server Time: Fri Jul 23 21:35:17 2004 MDT
Logout



Digital Alert Systems, LLC

**Digital EAS Encoder/Decoder**

Version: 1.0-0

### Decoder Decoded Alert Status

**Currently Active Decoded Alerts**

Chnl	EAS Type	ID	Start Time	End Time	Location
No Active Decoded Alerts					

FROM: 2004 Year Jul Month 18 Day TO: 2004 Year Jul Month 20 Day

**Expired Decoded Alerts**

Chnl	EAS Type	ID	Start Time	End Time	Location
L1 from KSLC/NWS	SVR	78	Tue Jul 20 19:53:00 2004 MDT <b>Decoded</b> Tue Jul 20 19:54:22 2004 MDT	Tue Jul 20 20:38:00 2004 MDT	Utah, UT (049049)
A SEVERE WEATHER WARNING HAS BEEN ISSUED FOR THE FOLLOWING COUNTIES/AREAS: Utah, UT; AT 7:53 PM ON JUL 20, 2004 EFFECTIVE UNTIL 8:38 PM. MESSAGE FROM KSLC/NWS. <input type="button" value="Play Audio Portion"/>					
L1 from KSLC/NWS	SVR	77	Tue Jul 20 18:14:00 2004 MDT <b>Decoded</b> Tue Jul 20 18:14:38 2004 MDT	Tue Jul 20 18:59:00 2004 MDT	Box Elder, UT (049003)
A SEVERE WEATHER WARNING HAS BEEN ISSUED FOR THE FOLLOWING COUNTIES/AREAS: Box Elder, UT; AT 6:14 PM ON JUL 20, 2004 EFFECTIVE UNTIL 6:59 PM. MESSAGE FROM KSLC/NWS. <input type="button" value="Play Audio Portion"/>					
L1 from KSLC/NWS	FFW	76	Sun Jul 18 19:00:00 2004 MDT <b>Decoded</b> Sun Jul 18 19:01:10 2004 MDT	Sun Jul 18 21:00:00 2004 MDT	Utah, UT (049049)
A FLASH FLOOD WARNING HAS BEEN ISSUED FOR THE FOLLOWING COUNTIES/AREAS: Utah, UT; AT 7:00 PM ON JUL 18, 2004 EFFECTIVE UNTIL 9:00 PM. MESSAGE FROM KSLC/NWS. <input type="button" value="Play Audio Portion"/>					

To select a date range simply use the provided pulldown menu and choose a Year, Month, and Day for the From and To dates. The list will display all available data for each expired alert decoded within the selected time period. The actual decoded headers are stored on the DASDEC, so this information is an accurate reflection of what the DASDEC received. Because of its digital disk medium, a DASDEC can archive an enormous number of expired events. The DASDEC will automatically remove the oldest event descriptions as needed to reserve enough space for new alerts. The number of stored events is at a minimum in the thousands, so you never need to worry about losing track of important archived information.

The event status page can be printed out from the local host's printers simply by using the Web browser's print button. This makes it easy to compile FCC paper documents for EAS test accounting. If the alert has an audio message then it can be played on the DASDEC internal speaker by simply clicking on the "Play Audio Portion" button that appears inside the alert entry. Alerts lacking an audio message will not have this button.

Every event that has been forwarded will also have a brief message within event time description showing the time of forwarding. Here is an example:

L1 from NWS/SLC	RMT	38	Mon Jun 28 22:44:00 2004 MDT <b>Decoded</b> Mon Jun 28 22:51:53 2004 MDT <b>Forwarded</b> Mon Jun 28 22:51:53 2004 MDT	Mon Jun 28 23:44:00 2004 MDT	<i>Utah,UT (049049)</i> <i>Box Elder,UT (049003)</i> <i>Davis,UT (049011)</i> <i>Tooele,UT (049045)</i> <i>Summit,UT (049043)</i> <i>Wasatch,UT (049051)</i> <i>Weber,UT (049057)</i> <i>Salt Lake,UT (049035)</i>
A REQUIRED MONTHLY TEST HAS BEEN ISSUED FOR THE FOLLOWING COUNTIES/AREAS: Utah,UT; Box Elder,UT; Davis,UT; Tooele,UT; Summit,UT; Wasatch,UT; Weber,UT; Salt Lake,UT; AT 10:44 PM ON JUN 28, 2004 EFFECTIVE UNTIL 11:44 PM. MESSAGE FROM NWS/SLC .					
<input type="button" value="Play Audio Portion"/>					

#### 4.7. Forwarded Event Status

Decoded EAS alerts that get forwarded are also placed on a separate event list. The DASDEC lets you see exactly which alerts have been decoded and which have also been forwarded, helping you precisely audit EAS activity. To examine forwarded decoded events, select the Decoder tab and then the Forwarded Alerts radio button. This page is organized exactly like the Decoded Alerts Status page. It is divided into the same two regions, the top displays active forwarded alerts, while the bottom displays a selected range of expired forwarded alerts.

#### 4.8. Encoder Setup

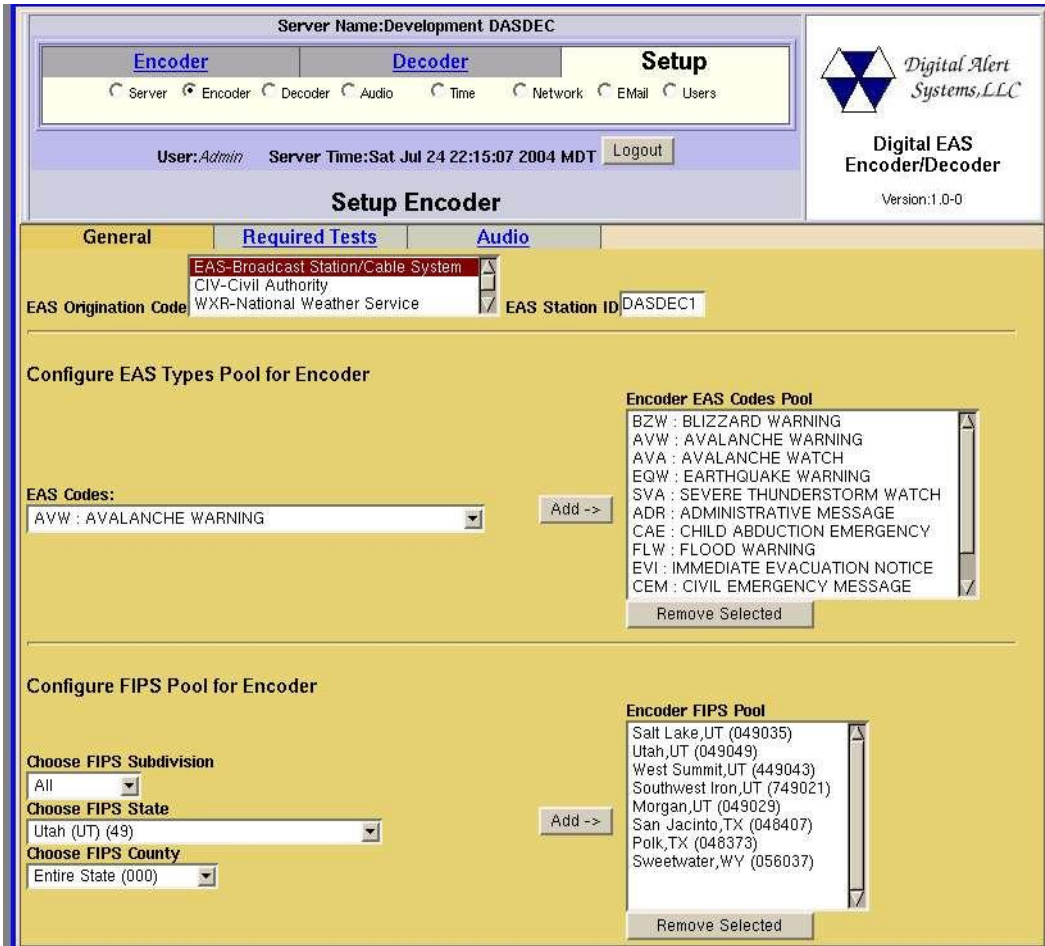
EAS alert encoding, called origination, is when the digital codes and alert audio tones and message defined by the EAS protocol, are assembled and played over a broadcast medium for which EAS decoders might be listening. The DASDEC makes this task very easy. Every action needed to encode and EAS is available on a single web page.

To run EAS encoding, a DASDEC must be configured with a valid Encoder license key. This is entered on the Setup Server page. Without a valid license key, the DASDEC will not show an Encoder Setup page nor the main Encoder menu tab. There are some configuration tasks needed to be done on the Encoder Setup pages before you use the DASDEC encoder. The Encoder Setup page has three tabbed sub-pages. The General sub-page is used to set up the EAS Origination code, the EAS station ID, and commonly used alert types and FIPS locations. The Required Tests sub-page is used to issue preconfigured Weekly and Monthly Test alerts, and the Audio page is used to configure the use of audio outputs by the encoder.



### 4.8.1. General Encoder Setup

This page allows configuration of some basic items needed to use the EAS encoder. The following figure shows the interface:



#### 4.8.1.1.EAS ORG Type

Select the EAS Originator code for your system from the selection menu. This code categorizes the type of organization sending the EAS. Select the code that best describes your organization:

- Broadcast station or cable system: Choose EAS
- Civil authorities: Choose CIV
- National Weather Service: Choose WXR
- Primary Entry Point System: Choose PEP

This code is placed in the EAS alert message when the encoder originates an EAS alert. This code is also the same one used for both manually forwarded alerts and automatically forwarded alerts. It can

also be edited from the Setup Decoder page.

#### **4.8.1.2.EAS Station ID**

Type up to 8 characters in this text field to identify the Station ID for this DASDEC. This code will be included in all originated alerts. The same code is also used in both manually forwarded alerts and automatically forwarded alerts. It can also be edited from the Setup Decoder page.

#### **4.8.1.3. EAS Types Pool Configuration**

The DASDEC must be configured for the types of EAS alerts that will be used during alert encoding. This is done by constructing a list of alert types to be held in a common pool. The list is referred to on the DASDEC as the "Encoder EAS Codes Pool". It appears on the Encoder Send Alert page. To build or edit the pool list, simply choose an EAS code type from the popdown menu and click on the Add button. Those codes selected for encoding will appear in the selection box on the right side. To remove any code from the auto-forward list, select from the auto-forward selection list and click Remove Selected. All operations are immediate.

Make sure and add all the common EAS types that will be used when encoding alerts from this DASDEC. However, if you find you are missing a code during encoding, the pool list can be edited at any time.

#### **4.8.1.4. EAS FIPS Locations Pool Configuration**

The DASDEC must also be configured for the commonly used FIPS locations that will be used during alert encoding. Just as for the EAS Codes Pool, a commonly used list of FIPS locations are to be constructed from the list of all possible FIPS. The list is referred to on the DASDEC as the "Encoder FIPS Pool". It also appears on the Encoder Send Alert page. There are many thousands of FIPS location codes, so this list of commonly used FIPS codes saves valuable time during typical alert encoding. In the rare event that other FIPS locations are needed, the list can be edited at any time. To build or edit the FIPS pool list, simply choose a FIPS state and county code from the popdown menu and click on the Add button. Those codes selected for encoding will appear in the selection box on the right side. To remove any code from the auto-forward list, select from the auto-forward selection list and click Remove Selected. All operations are immediate.

Make sure and add all the common FIPS location codes that will be used when encoding alerts from this DASDEC.



### 4.8.2. Required Tests Encoder Setup

On the Required Tests page, the DASDEC can be configured to be able to send a Required Weekly test and/or a Required Monthly test with a single button push. For the One-button Weekly Test, simply select the FIPS codes and the duration for the test. For the Monthly test select the FIPS codes, the duration and an optional audio file. Only when these items are completed will the corresponding one button interface be enabled under the Encoder main page.

The screenshot displays the 'Required Tests' configuration page with three tabs: 'General', 'Required Tests', and 'Audio'. The 'Required Tests' tab is active, showing two main sections: 'Configure One-Button Weekly Test' and 'Configure One-Button Monthly Test'.

**Configure One-Button Weekly Test**

- Set FIPS locations for One-Button Weekly Test:** For each Location, Select a FIPS, then **Add Selected FIPS**. A list of FIPS codes is shown: Salt Lake, UT (049035), Utah, UT (049049), West Summit, UT (449043), Southwest Iron, UT (749021), Morgan, UT (049029), San Jacinto, TX (048407), Polk, TX (048373), and Sweetwater, WY (056037). An 'Add Selected FIPS' button is below the list.
- Set One-Button Weekly Test Duration:** Hours: 0, Mins: 15.
- Current FIPS locations for One-Button Weekly Test:** 1. All | Salt Lake, UT (049035) | Remove

**Configure One-Button Monthly Test**

- Set FIPS locations for One-Button Monthly Test:** For each Location, Select a FIPS, then **Add Selected FIPS**. The same list of FIPS codes is shown. An 'Add Selected FIPS' button is below the list.
- Set One-Button Monthly Test Duration:** Hours: 0, Mins: 15.
- Current FIPS locations for One-Button Monthly Test:** 1. All | Salt Lake, UT (049035) | Remove; 2. West | Summit, UT (449043) | Remove
- Select Audio File:** A dropdown menu is open, showing options: No Audio, testrec.wav, abduction2.wav, floodevac.wav, and NOAA\_test\_audio\_msg.wav.

### 4.8.3. Audio Encoder Configuration

The Audio configuration page of Setup Encoder is where the audio output port is selected for encoded originated alerts. The audio output level can also be edited from this page. This page will at a minimum show one output for Main Audio. If extra sound cards have been installed in the DASDEC, auxiliary audio outputs will be displayed. Check the correct audio port or ports for playing the audio of the EAS alert. The Accept Changes button must be clicked for the changes to be made permanent.

The screenshot displays the 'Audio' tab of the 'Alert Encoding Audio Configuration' window. It features two sections for audio output configuration. The first section, 'Main Audio (dev/mixer0)', includes an 'Output Level (0..100)' with sliders for 'L' and 'R' both set to 88, and a checked checkbox for 'Enable Encoder Alert Origination on Main Audio Output'. The second section, 'Auxiliary Audio 1 (dev/mixer2)', includes an 'Output Level (0..100)' with sliders for 'L' and 'R' set to 67 and 62 respectively, and a checked checkbox for 'Enable Encoder Alert Origination on Aux 1 Audio Output'. At the bottom, there are two buttons: 'Accept Changes' and 'Cancel Changes'.

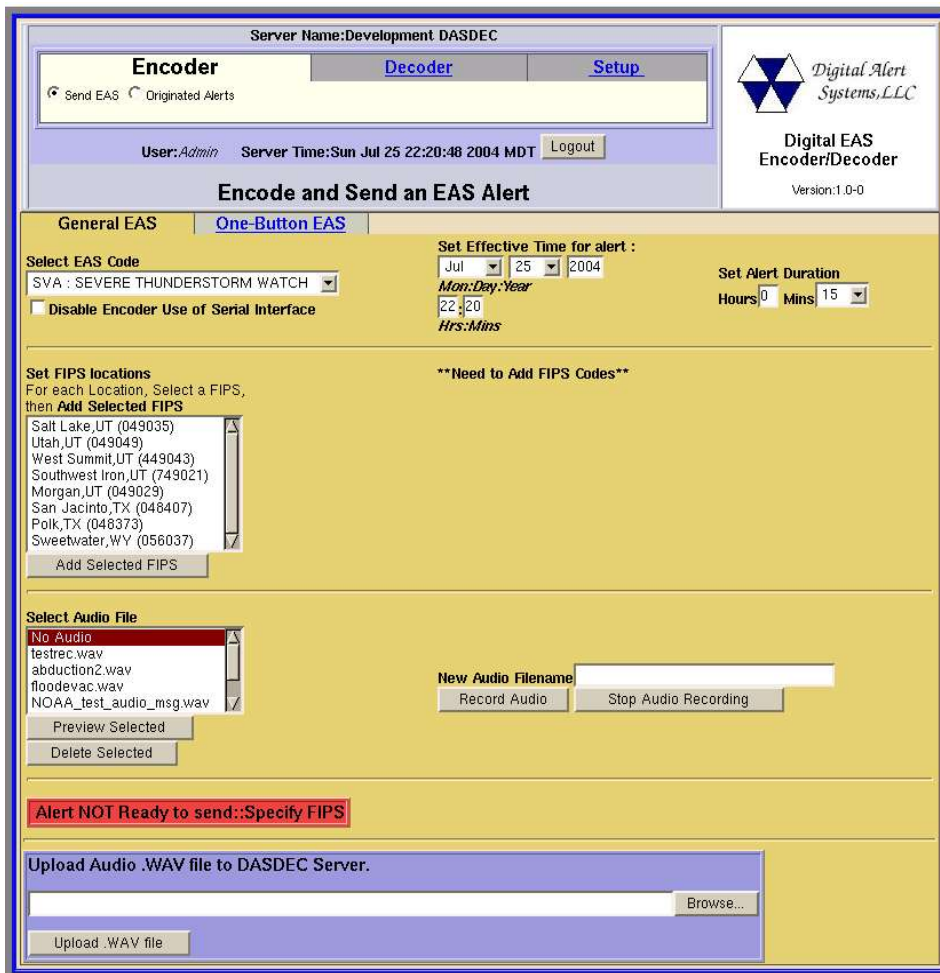
Section	Device	L Output Level	R Output Level	Enable Encoder Alert Origination
Main Audio	dev/mixer0	88	88	Yes
Auxiliary Audio 1	dev/mixer2	67	62	Yes



### 4.9. Encoder Operation

The DASDEC makes EAS encoding and alert origination easy, accurate, and quick. From a single, uncomplicated web page, EAS alerts can be constructed and issued. Only a DASDEC that has been configured with a valid Encoder license key (see Setup Server) will offer the encoding feature. With a valid license key, the DASDEC will display a main menu tab called "Encoder". It will also display an Encoder option button under the "Setup" main tab. Make sure your DASDEC has been configured with Setup Encoder prior to attempting EAS encoding.

Enter DASDEC encoder page by selecting the main tab "Encoder" and then the Send EAS button. The Encoder Send EAS page has two tabbed sub-pages. The "General EAS" sub-page is used to construct and send any and all kinds of EAS alerts. The "One-button EAS" sub-page is used to issue preconfigured Weekly and Monthly Test alerts. Here is an example of the Encoder Send EAS page:



**4.9.1. Sending EAS alerts**

To construct and send an EAS alert, you will need to set five items on the General EAS page under "Encoder Send EAS":

- The EAS alert code;
- The starting time (effective time) of the alert;
- The alert duration
- The FIPS locations codes for the alert;
- The audio message, if any, for the alert.

The values for these items are presented using pulldown and selection menus. Refer to the following figure:

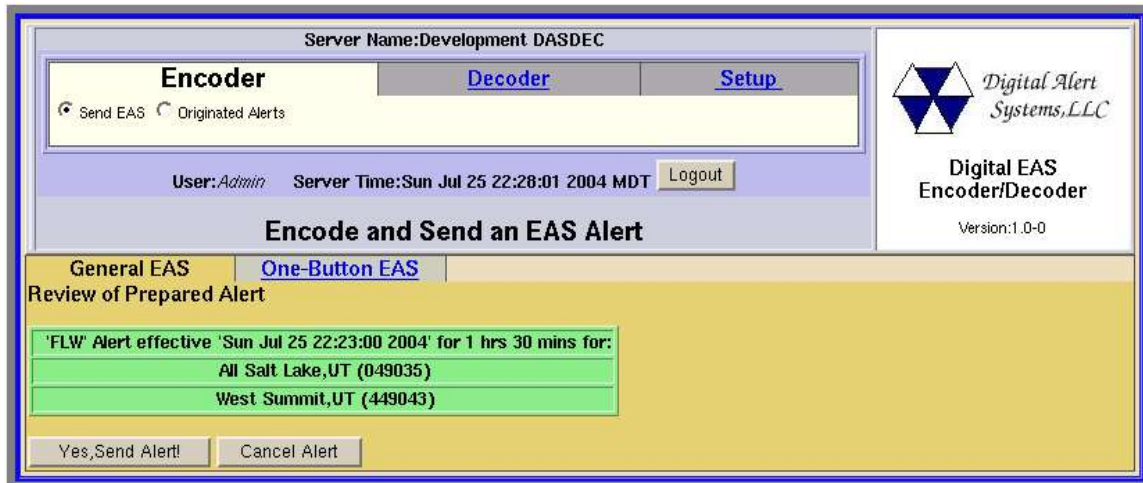
To set the EAS code, simply select from the codes presented under the "Select EAS Code" pulldown menu. In the example above, a Flood Warning has been selected. The codes in the menu are the same ones added under the Setup Encoder section. If the desired code is missing, go over to the Setup Encoder page and simply add the code. Then return to the "Encoder Send EAS" General EAS page, by selecting the "Encoder" main menu tab. After selecting the EAS code,

set the alert duration and the effective (starting) time for the alert. If the effective time is left alone, it will default to the current time. The default duration is 15 minutes. The alert date and duration are set by selecting from the provided pulldown menu. The alert effective time is set by typing in the provided text field, 0-23 for hour, and 0-59 for minute. In the example above, the duration has been set to 1 hour and 30 minutes. The effective time is the current time.

Notice at this time that the message "*Alert NOT Ready to Send::Specify FIPS*" is displayed at the lower left of the page. An EAS alert must be issued for specific locations. A FIPS code is a unique 6 digit code that covers every State or territory in the United States, as well as every County or County Equivalent area in the US. Furthermore, a sub-region of the County/State can also be chosen. Until FIPS location codes are entered, the DASDEC will not present a "Send Alert" button option. Up to 31 FIPS location codes may be selected using the provided FIPS selection table (like the EAS code table, the FIPS table is constructed in the Setup Encoder section). Simply click a code in the table and then click the "Add Selected FIPS" button. The selection will appear to the right of the table. The sub-region of the FIPS location can be edited, at will, for every chosen location. If a different sub-region is desired, simply select one of the ten choices presented in the pulldown menu that is displayed to the left of the FIPS code. If you make a mistake entering a FIPS location, it can simply be deleted using the provided Delete button presented with every chosen FIPS entry.

After the FIPS locations have been entered, notice that the "*Alert NOT Ready...*" message has been replaced by the "Send Alert" button. The alert can be sent immediately if no audio message is needed. However, often this is not the case. If an audio message should be included in the alert, it must be chosen from the "Select Audio File" selection box. Audio files can be added in two ways. You can upload a pre-recorded digital audio file (in the .wav format) from your local host computer file system using the provided "Upload Audio .WAV file to the DASEC server" interface (at the bottom of the page). The other option is to record the audio file using a microphone and the provided Audio record buttons. The microphone must be connected to the main microphone input jack at the back of the DASDEC. To record, provide a unique file name for the audio file (one not already used in the provided "Select Audio File" selection box, if you use an existing name, the original file by that name will be overwritten) by entering the name in the "New Audio Filename" text field. Then push the Record Audio button and speak. Click on the Stop Audio Recording button when complete. The file will appear in the Audio File selection box. It may be previewed on the DASDEC using the "Preview Selected" button. The duration of this file must be under 2 minutes. The DASDEC will automatically cut off recording at 2 minutes in order to insure this limit. Once the file is correct, select it from the Audio File selection box. In the example above, the file floodevac.wav has been selected. The selected audio file will be encoded into the EAS alert once it is sent.

The last task is to send the alert. Simply click on the "Send Alert?" button. The DASDEC will present a confirmation page with a review of the encoding details. Here is an example of that page:



At this point, the alert can be sent using the "Yes, Send Alert!" button, or the send can be canceled by using the "Cancel Alert" button. If the alert send is canceled, the DASDEC will go back to the previous page. At this point the alert information can be changed as necessary and then sent.

If the alert data is accurate, and you are ready to actually issue the EAS alert, then click on the "Yes, Send Alert!" button. The alert will be "originated", that is, played, out of the selected DASDEC audio output ports. Recall that the Originated alert audio ports are selected from the "Setup Encoder" Audio tab sub-page. During the origination time, the front panel red LED will be lit and the audio of the alert will also be played from the built-in DASDEC internal speaker. Also, for the duration of the issued alert, the DASDEC will periodically crawl the alert text across the front panel LCD. The LCD text for the alert will be preceded by the letter "O", indicating a DASDEC originated alert. Also, the details of this alert will be viewable in another status page, the "Encoder Originated Alerts" page.

A simpler way to encode and issue alerts is by using One-button alerts. This is covered next.

#### 4.9.2. One Button send alerts

The DASDEC allows Required Weekly and Monthly tests to be preconfigured in the "Setup Encoder" Required Tests page. Once these have been configured, the "Encoder Send EAS" One-Button EAS page will present a button to simply issue the alert. This makes it simple to send these test alerts, without having to select details. The alerts starting time is set to be effective immediately.

The screenshot displays the 'Encoder' section of the DASDEC web interface. At the top, it shows 'Server Name: Development DASDEC'. Below this, there are three tabs: 'Encoder' (selected), 'Decoder', and 'Setup'. Under the 'Encoder' tab, there are two radio buttons: 'Send EAS' (selected) and 'Originated Alerts'. A status bar indicates 'User: Admin', 'Server Time: Sun Jul 25 22:22:33 2004 MDT', and a 'Logout' button. The main heading is 'Encode and Send an EAS Alert'. There are two sub-sections: 'General EAS' and 'One-Button EAS'. The 'One-Button EAS' section is active and shows two test options: 'One-Button Weekly Test' and 'One-Button Monthly Test'. Each test option lists locations, duration, and a 'Send Preconfigured' button. The 'Weekly Test' is for Salt Lake, UT (049035) with a duration of 0 hours and 15 minutes. The 'Monthly Test' is for Salt Lake, UT (049035) and Summit, UT (449043) with a duration of 0 hours and 15 minutes. The audio file is 'mt.wav'.

#### 4.9.3. Originated Alert status

The Encoder section also provides a status page, organized just like the "Decoder Decoded Alerts" page, where you can look at the details of every alert originated from the DASDEC. Go to the "Encoder Originated Alerts" page. Currently active originated alerts are displayed at the top of the page, while expired originated alerts are displayed at the bottom of the page. The specific dates for expired alerts is selected using the FROM and TO date selection pulldown menus.

#### 4.10. Testing DASDEC Encoding and Decoding

A good way to test the DASDEC is to have a second sound card installed and run an audio cable between the output of the second audio card into the input of the first card. Make sure the origination audio out is set to play over the auxiliary audio output and that one decoder is operational on the Main audio input (use Setup Decoder Audio). Then run the Encoder and send the alert. The DASDEC will both send and decode the alert.

## 5. DASDEC Peripherals

The DASDEC will in time support many peripheral devices, from character generators to printers. In the first release, the DASDEC will replace a TFT-911 encoder/decoder unit for the Vela NDU 710.

### 5.6. Vela NDU

The Vela NDU 710 is a sophisticated character generator controller and general messaging system from Vela Broadcast. It comes with a complete EAS management system that controls a TFT-911 EAS encoder/decoder. The DASDEC can be connected via a Null modem cable from the NDU serial port to the DASDEC serial port. The DASDEC alert audio output must be wired to the selected NDU audio input port. After that, the NDU will run normally without further configuration. For details on the Vela NDU 701, refer to the literature at [www.vela.com](http://www.vela.com).

### 5.7. Other Character generators

Any character generator that can operate the standard TFT 911 EAS serial control protocol can use a DASDEC. A Null modem cable from the CG serial port must be connected to the DASDEC serial port.

## 6. Appendix

The DASDEC encodes the EAS messages per FCC rules for the EAS protocol. The EAS protocol from the FCC is described as follows (printed directly from the FCC ruling).

The EAS uses a four part message for an emergency activation of the EAS. The four parts are; Preamble and EAS Header Codes, audio Attention Signal, message, and, Preamble and EAS End Of Message Codes.

- The Preamble and EAS Codes must use Audio Frequency Shift Keying at a rate of 520.83 bits per second to transmit the codes. Mark frequency is 2083.3 Hz and space frequency is 1562.5 Hz. Mark and space time must be 1.92 milliseconds. Characters are ASCII seven bit characters as defined in ANSI X3.4-1977 ending with an eighth null bit (either 1 or 0) to constitute a full eight-bit byte.
- The Attention Signal must be made up of the fundamental frequencies of 853 and 960 Hz. The two tones must be transmitted simultaneously. The Attention Signal must be transmitted after the EAS header codes.
- The message may be audio, video or text.
- The ASCII dash and plus symbols are required and may not be used for any other purpose. Unused characters must be ASCII space characters. FM or TV call signs must use a slash ASCII character number 47 (/) in lieu of a dash.
- The EAS protocol, including any codes, must not be amended, extended or abridged without FCC authorization. The EAS protocol and message format are specified in the following representation. Examples are provided in FCC Public Notices.

---

[PREAMBLE]ZCZC-ORG-EEE-PSSCCC+TTTT-JJJHHMM-LLLLLLLLL-  
 (one second pause)  
 [PREAMBLE]ZCZC-ORG-EEE-PSSCCC+TTTT-JJJHHMM-LLLLLLLLL-  
 (one second pause)  
 [PREAMBLE]ZCZC-ORG-EEE-PSSCCC+TTTT-JJJHHMM-LLLLLLLLL-



(at least a one second pause)  
(transmission of 8 to 25 seconds of Attention Signal)  
(transmission of audio, video or text messages)  
(at least a one second pause)  
[PREAMBLE]NNNN  
(one second pause) [PREAMBLE]NNNN  
(one second pause) [PREAMBLE]NNNN  
(at least one second pause)

---

**[PREAMBLE]** This is a consecutive string of bits (sixteen bytes of AB hexadecimal [8 bit byte 10101011]) sent to clear the system, set AGC and set asynchronous decoder clocking cycles. The preamble must be transmitted before each header and End Of Message code.

**ZCZC-** This is the identifier, sent as ASCII characters ZCZC to indicate the start of ASCII code.

**ORG-** This is the Originator code and indicates who originally initiated the activation of the EAS. These codes are specified in paragraph (d) of this section.

**EEE-** This is the Event code and indicates the nature of the EAS activation. The codes are specified in paragraph (e) of this section. The Event codes must be compatible with the codes used by the NWS Weather Radio Specific Area Message Encoder (WRSAME).

**PSSCCC-** This is the Location code and indicates the geographic area affected by the EAS alert. There may be 31 Location codes in an EAS alert. The Location code uses the Federal Information Processing Standard (FIPS) numbers as described by the U.S. Department of Commerce in National Institute of Standards and Technology publication FIPS PUB 6-4. Each state is assigned an SS number as specified in paragraph (f) of this section. Each county and some cities are assigned a CCC number. A CCC number of 000 refers to an entire State or Territory. P defines county subdivisions as follows: 0 = all or an unspecified portion of a county, 1 = Northwest, 2 = North, 3 = Northeast, 4 = West, 5 = Central, 6 = East, 7 = Southwest, 8 = South, 9 = Southeast. Other numbers may be designated later for special applications. The use of county subdivisions will probably be rare and generally for oddly shaped or unusually large counties. Any subdivisions must be defined and agreed to by the local officials prior to use.

**+TTTT-** This indicates the valid time period of a message in 15 minute segments up to one hour and then in 30 minute segments beyond one hour; i.e., +0015, +0030, +0045, +0100, +0430 and +0600.

**JJHHMM-** This is the day in Julian Calendar days (JJJ) of the year and the time in hours and minutes (HHMM) when the message was initially released by the originator using 24 hour Universal Coordinated Time (UTC).

**LLLLLLLL-** This is the identification of the broadcast station, cable system, MDS/MMDS/ITFS station, NWS office, etc., transmitting or retransmitting the message. These codes will be automatically affixed to all outgoing messages by the EAS encoder.

**NNNN-** This is the End of Message (EOM) code sent as a string of four ASCII N characters.

**The only originator codes are:**

<u>Originator</u>	<u>ORG</u>
Code Broadcast station or cable system	EAS
Civil authorities	CIV
National Weather Service	WXR
Primary Entry Point System	PEP

**The following Event (EEE) codes are presently authorized:**

<u>Nature of Activation</u>	<u>Event Codes</u>
<b>National Codes (Required):</b>	
Emergency Action Notification	EAN (National only)
Emergency Action Termination	EAT (National only)
National Information Center	NIC
National Periodic Test	NPT
Required Monthly Test	RMT
Required Weekly Test	RWT

**State and Local Codes (Optional):**

<b>Administrative Message</b>	<b>ADR</b>
<b>Avalanche Warning</b>	<b>AVW</b>
<b>Avalanche Watch</b>	<b>AVA</b>
<b>Blizzard Warning</b>	<b>BZW</b>
<b>Child Abduction Emergency</b>	<b>CAE</b>
<b>Civil Danger Warning</b>	<b>CDW</b>
<b>Civil Emergency Message</b>	<b>CEM</b>
<b>Coastal Flood Warning</b>	<b>CFW</b>
<b>Coastal Flood Watch</b>	<b>CFA</b>
<b>Dust Storm Warning</b>	<b>DSW</b>
<b>Earthquake Warning</b>	<b>EQW</b>
<b>Evacuation Immediate</b>	<b>EVI</b>
<b>Fire Warning</b>	<b>FRW</b>
<b>Flash Flood Warning</b>	<b>FFW</b>
<b>Flash Flood Watch</b>	<b>FFA</b>
<b>Flash Flood Statement</b>	<b>FFS</b>
<b>Flood Warning</b>	<b>FLW</b>
<b>Flood Watch</b>	<b>FLA</b>
<b>Flood Statement</b>	<b>FLS</b>
<b>Hazardous Materials Warning</b>	<b>HMW</b>
<b>High Wind Warning</b>	<b>HWW</b>
<b>High Wind Watch</b>	<b>HWA</b>
<b>Hurricane Warning</b>	<b>HUW</b>
<b>Hurricane Watch</b>	<b>HUA</b>
<b>Hurricane Statement</b>	<b>HLS</b>
<b>Law Enforcement Warning</b>	<b>LEW</b>
<b>Local Area Emergency</b>	<b>LAE</b>
<b>Network Message Notification</b>	<b>NMN</b>
<b>911 Telephone Outage Emergency</b>	<b>TOE</b>
<b>Nuclear Power Plant Warning</b>	<b>NUW</b>
<b>Practice/Demo Warning</b>	<b>DMO</b>
<b>Radiological Hazard Warning</b>	<b>RHW</b>
<b>Severe Thunderstorm Warning</b>	<b>SVR</b>
<b>Severe Thunderstorm Watch</b>	<b>SVA</b>
<b>Severe Weather Statement</b>	<b>SVS</b>
<b>Shelter in Place Warning</b>	<b>SPW</b>
<b>Special Marine Warning</b>	<b>SMW</b>
<b>Special Weather Statement</b>	<b>SPS</b>
<b>Tornado Warning</b>	<b>TOR</b>
<b>Tornado Watch</b>	<b>TOA</b>
<b>Tropical Storm Warning</b>	<b>TRW</b>
<b>Tropical Storm Watch</b>	<b>TRA</b>
<b>Tsunami Warning</b>	<b>TSW</b>
<b>Tsunami Watch</b>	<b>TSA</b>
<b>Volcano Warning</b>	<b>VOW</b>
<b>Winter Storm Warning</b>	<b>WSW</b>
<b>Winter Storm Watch</b>	<b>WSA</b>

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