

*Digital Alert Systems, LLC*

## **1. Getting Started with the DASDEC**

### **1.1. Introduction**

The DASDEC is an Emergency Alert System (EAS) Digital Encoder/Decoder platform. The DASDEC is built with the latest digital PC computer technology. The DASDEC encoding/decoding technology is software based, and is built upon the Linux OS. The DASDEC core hardware is a standard PC motherboard and digital audio sound cards. The DASDEC is easy to upgrade, not requiring custom ROMS. The DASDEC also exploits the benefits of modern network technology. It is fully operable over a LAN using secure network protocols. In addition, it supports existing methods of device control using a serial port. The DASDEC is representative of the continuing advance of digital device technology into technological areas that only a few years ago required custom hardware.

### **1.2. Features**

The DASDEC provides a number of features for easier management of FCC EAS requirements. The DASDEC has been designed to improve the EAS system for radio and TV broadcasters, Cable TV headend facilities, LP1 and LP2 designated stations, and Public Safety and Emergency Service personnel.

#### **DASDEC hardware specs**

- 2x20 backlit LCD display for monitoring unit and decoder status
- Operational status LED
- Alert decoding/output LED
- Cool running, low power CPU
- Ethernet port for network access
- Base unit has one 3.5mm mini-jack audio input port that supports scanning/decoding EAS on 2 radio channels
- Hard drive or flash drive options
- 3.5mm mini-jack stereo audio output port
- 3.5mm mini-jack microphone input
- 1 RS-232 Serial port, supports TFF-911 serial control protocol

- 1 parallel port will support a variety of printers
- 4 USB ports - will support extra serial ports, printers, modems, wireless ethernet, flash drives, etc
- 2 Firewire ports
- VGA out for console or desktop GUI interface
- one NTSC/PAL video output
- standard PS/2 keyboard/mouse ports
- supports PCI expansion card, use with audio card for scanning 2 more audio inputs (total of 4 EAS audio sources)
- internal speaker for monitoring
- can be safely powered off/on without disk damage
- optional GPI input/output and balanced audio output module.

#### **DASDEC general software features/specs**

- Linux 2.4.24 operating system
- Built in multi-user, password protected Web interface for control/status/monitoring of all activity. Web interface supports SSL.
- KDE desktop available via directly connected keyboard/mouse/VGA monitor
- Supports sending email for decoded/forwarded/originated alerts
- Support SMS pager output using USB modem
- Socket based network interface for monitoring/control
- Supports WiFi wireless networking via USB
- Supports a variety of printers via USB/Parallel
- Supports operational status indication via LED and LCD
- Web interface for software update
- Support for optional GPI input to trigger actions and optional GPI output during alerts.

#### **DASDEC decoder features**

- Decodes FCC EAS codes and NOAA SAME codes.
- Automatic audio level correction for reliable operation.
- Supports fully unattended operation.
- Supports manual and selectable automatic alert auto-forwarding.
- Easy to use web interface for configuration of auto-forwarding locations and codes.
- Web interface makes it easy to review and print logs of active and expired decoded/forwarded alerts.
- Stores user configurable number of previous alerts.
- Supports multiple simultaneously active decoded alerts.
- Configurable audio output port selection for alert forwarding.
- Decoding status displayed on unit LCD and LED.

- Stores each audio section of EAS alerts into digital files.
- Supports TFT-911 serial protocol for alert alert audio playback and alert translation data transfer
- Will support scanning up to 6 input channels (depends on hardware expansion)

#### **DASDEC Encoder features**

- Easy to use Web interface for creating and sending FCC EAS alerts.
- Web interface makes it easy to configure commonly used locations and alert types.
- Web interface makes it easy to review and print logs of active and expired originated alerts.
- All audio sections of encoded alerts are stored into separate digital audio files.
- Stores user configurable number of previous originated alerts.
- Supports multiple simultaneous active originated alerts.
- Configurable audio output port selection for originated alerts
- Automatic randomized Weekly test generation
- User programmable length of 8 to 30 seconds for FCC EAS 853 Hz and 960 Hz Two-tone Attention Signal.
- Web interface upload feature for digital audio files makes it easy to encode the audio portion of EAS alerts.
- Supports direct recording of EAS alert audio into digital files.
- Audio output level control via web interface.

## **2.The Emergency Alert System**

### **2.1.Purpose**

According to the FCC, "The EAS is designed to provide the President with a means to address the American people in the event of a national emergency. Through the EAS, the President would have access to thousands of broadcast stations, cable systems and participating satellite programmers to transmit a message to the public. The EAS and its predecessors, CONELRAD and the Emergency Broadcast System (EBS), have never been activated for this purpose. But beginning in 1963, the President permitted state and local level emergency information to be transmitted using the EBS."

But the EAS system is used for much more than to support a method of communication that has never been (and hopefully never will be) used. The EAS system provides state and local officials with a method to quickly send out important local emergency information targeted to a specific area. This includes weather alerts as well as other local emergency alerts such as child abductions and disasters. The EAS system also has test alerts which are run on a weekly and monthly basis in order to insure operability.

### **2.2.Operation**

The EAS system digitally encodes data into audible audio in order to distribute messages. This information can be sent out through a broadcast station and cable system. The EAS digital signal uses the same encoding employed by that the National Weather Service (NWS) for weather alerts broadcast over NOAA Weather Radio (NWR). Broadcasters and cable operators can decode NWR alerts and then retransmit NWS weather warning messages almost immediately to their audiences. With the proper equipment and setup, EAS alerts can be handled automatically, making EAS information useful for unattended stations. Other specially equipped consumer products, built into some televisions, radios, pagers and other devices, can decode user selectable EAS messages.

The DASDEC is designed to not only encode and decode EAS alerts, and to integrate into cable and broadcast facilities, but to be especially easy to use since it is IP addressable and accessible over a LAN.

### **2.3.Management**

The FCC designed the EAS system., working in a cooperation with the broadcast, cable, emergency management, alerting equipment industry, the National Weather Service (NWS) and the Federal Emergency Management Administration (FEMA).

The FCC provides information to broadcasters, cable system operators, and other participants in the EAS regarding the requirements of this emergency

system. Additionally, the FCC ensures that EAS state and local plans developed by industry conform to the FCC EAS rules and regulations and enhance the national level EAS structure.

NWS provides emergency weather information used to alert the public of dangerous conditions. Over seventy percent of all EAS and EBS activations were a result of natural disasters and were weather related. Linking NOAA Weather Radio digital signaling with the EAS digital signaling will help NWS save lives by reaching more people with timely, site-specific weather warnings.

FEMA provides direction for state and local emergency planning officials to plan and implement their roles in the EAS.

#### **2.4. Your responsibility as a broadcaster**

Your DASDEC encoder/decoder allows your facility to decode EAS alerts originated from alert sources in your area. These sources can be radio, TV, and cable TV stations. These stations can be forwarding alerts received from a web of broadcasters, or originating alerts if designated as a primary source. To meet minimum requirements of the FCC, you must send randomized weekly tests, forward monthly tests, and forward National alerts. Your state and local EAS plan may also impose other requirements.

A good source of information is the EAS website at <http://www.fcc.gov/eb/eas/>. The FCC provides handbooks in Adobe PDF format for AM and FM radio, for TV and for Cable TV.

#### **2.5. Future of EAS and DASDEC**

As of this printing (summer 2004), the current EAS system has been in place for about ten years. While little has changed in the core EAS system in that time, an explosion of digital technology has occurred, especially in communications and with the enormous evolution of the Internet. New methods of emergency management and alerting are in the process of being built, to take advantage of the digital mediums. But the EAS system is in place and has a future for at least several more years. The new digital technologies do not replace the EAS system, they augment the system. The EAS system provides an important level of redundant backup, using reliable radio broadcast, with communication coverage for more of the United States than any other medium.

The EAS system is also in the process of evolving, with significant improvements possible, and just starting to be addressed. Bridges between EAS systems and the new digital alerting and emergency management systems will be possible with new digital LAN based EAS encoder/decoder technology. The DASDEC provides a powerful and yet economical LAN based digital platform for this bridge to the future of EAS.

## 3.DASDEC Hardware and Setup

### 3.1.Introduction

The DASDEC is a 3U rack mounted unit built with the latest digital PC computer technology. It is an embedded PC platform. The front of the DASDEC, pictured below, provides a very simple face for a very sophisticated platform. The DASDEC exposes the PC motherboard connectors and single PCI slot in the rear of the unit.



### 3.2.Front Panel

The front panel features a 2x20 character backlit LCD that indicates power-on, and realtime device status. There are also 2 LEDs, one red, one green for indicating specific types of status. Finally, a small grill provides space for audio from the internal speaker.

#### 3.2.1.LCD

The backlit green LCD provides realtime status of the DASDEC. The LCD is used for numerous purposes, all indicating system and/or encoding/decoding and active alert status. Here is a list of information available from the LCD.

- When the DASDEC is powered on, the LCD will light up, indicating power-on state.
- While the DASDEC is booting, the LCD will move through a few display states, eventually arriving at the ready state where the first line will display DASDEC:ON followed by a crawling display showing the programmed unit name, the software version number and the IP address.
- During decoding of an incoming alert, the LCD will display information about the source and the stage of the decoding.
- While decoded, forwarded or originated alerts are active on the DASDEC, the top line will repeat displaying pertinent identification for each active alert.

#### 3.2.2.Status LEDs

The DASDEC's 2 LEDs are used for a variety of status indications, making it easy to see at a glance certain important system states.

### System Status - Green LED

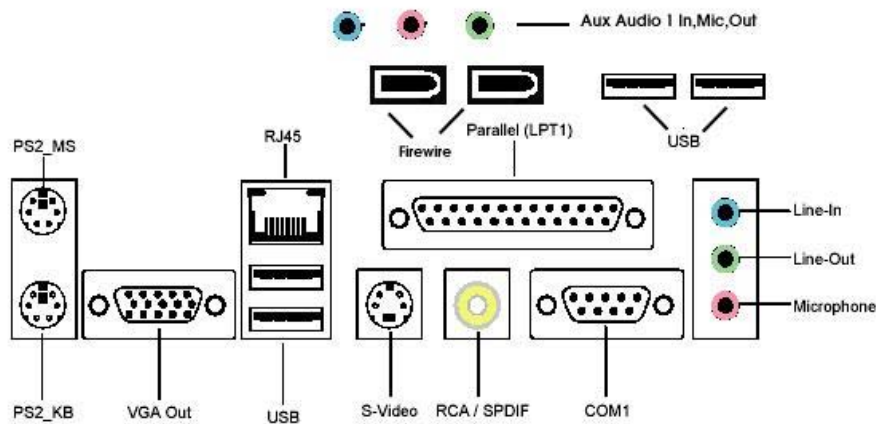
- When the DASDEC is powered on, the green LED will be dark.
- When the booting process advances far enough, the green LED will begin to blink.
- When the DASDEC nears a ready state, the green LED will blink more rapidly, until, when the DASDEC is ready, the green LED will light solid. A solid green LED indicates the DASDEC is operational.
- If the green LED starts blinking, the DASDEC server has become non-operational. This can happen during software upgrades.

### Alert status - Red LED

- When the DASDEC is powered on, the red LEDs will be dark.
- After the DASDEC becomes operational, in a ready state, with the green LED solid, the red LED will indicate decoding and alert sending status.
- If the red LED is blinking quickly, with pauses, the DASDEC server is decoding an incoming alert. If the red LED is solid, the DASDEC is sending an EAS alert.

### 3.3.Back Panel Connectors

The back of the DASDEC provides all of the connection ports. In addition to the standard PS/2 mouse and keyboard and VGA monitor ports, the DASDEC provides an RS-232 serial port (COM1), a parallel port, an RJ45 LAN port, 4 USB ports, 2 IEEE-1394 firewire ports, main audio line in, out, and microphone jacks, optional auxiliary audio line in, out, and microphone jacks, and two TV out connectors. The DASDEC currently does not have any software support for the TV out or firewire. The optional second audio sound card likely also has an unused MIDI interface port.



### **3.4.Audio Wiring**

Audio wiring on the DASDEC has some flexibility due to the option of adding a second sound card and because of built-in software control. Here are a few rules:

- EAS decoder input always uses the audio line inputs
- Every line input can be used for decoding audio provided from an external receiver or EAS decoder
- Every line input supports two (2) EAS decoders, the left side of the input is decoded separately from the right side. So two line inputs provide four (4) EAS decoders.
- EAS alerts are selectively played out of the line output ports. Software is used to select which ports are used for alert origination and forwarding.
- The main microphone input is used to record EAS audio messages.

For decoding, each side of the stereo input of any audio input can be selectively used as a single decoder source. In other words, one stereo input supports two EAS decoders. An adapter must be built to connect two separate input signals to each DASDEC line input jack.

For alert encoding an audio wire is run from a software selected line output jack into the alert audio wiring (which eventually connects to a transmitter).

### **3.5.GPIO Output relays**

The DASDEC comes with an optional unit that provides 3 General Purpose Output relays and 2 General Purpose inputs. During an alert origination or forwarding, the GPO relay 1 is closed for the duration of the alert audio envelope output.



## **4.DASDEC Operation**

### **4.1.Power Up, User Interface and Initial Setup**

The DASDEC uses a standard AC power cord. It uses a single power toggle switch to power on. NOTE:Power is supplied to the unit electronics while the external cord is plugged and supplied with power.

The DASDEC can present graphical user interface in one of three ways. The first is using a VGA monitor, keyboard and mouse connected to the correct ports on the back of the DASDEC. The keyboard and mouse should be connected prior to power on. The VGA monitor can be connected at any time.

The other two ways to get a user interface are via a network connection using a Web browser on a remote host. The DASDEC is given a default static network address of 192.168.0.1. The DASDEC can be connected directly to another computers ethernet port using a network crossover cable, or can be connected to a hub or router using a standard network cable. Network cabling can be done after power up. But the DASDEC must be fully booted before it can provide a network connection.

Once the DASDEC is correctly cabled, power up by touching the power switch or rocker on the upper left corner of the backside. The LCD screen will light up if power is applied. Allow the DASDEC time to boot. The LCD screen and the green system status LED will indicate when the DASDEC is ready.

#### **4.1.1.Using a VGA monitor, keyboard, and mouse with a DASDEC**

This is the most obvious way to start configuring the DASDEC. Connect the VGA monitor, keyboard and mouse connected to the correct ports on the back of the DASDEC. Then power up and wait for the DASDEC boot and become fully operational. Make sure the VGA monitor is powered on.

You will be presented with a login prompt on the VGA monitor. Type in the user name of "root" (without parenthesis). The default password is "dasdec1". After login, the DASDEC presents a shell prompt. At this point, if you are familiar with Linux, you may examine the DASDEC and run Linux administration from the provided shell. Keep in mind that several configuration tasks, like network configuration, should be done from the DASDEC Web browser interface. So the typical task at this point is to launch a desktop user interface. Type the command 'startx' and then touch the Return key. This will run the KDE desktop windowing user interface. Wait for the desktop to fully launch. Once the desktop is ready, run the provided DASDEC browser app by clicking the icon labeled DASDEC Web Interface. This launches a browser which will automatically access the DASDEC web server Login page. Everything you will need to do to setup the DASDEC for operation and remote network access will be available from within the Web interface. Follow the directions below for DASDEC network setup and Decoder/Encoder setup.

Note, that the desktop user interface provides access to many other Linux

applications. You may also lock the desktop from other users by selecting the proper lock menu item from the right mouse button menu popup screen.

After you are finished with the DASDEC KDE desktop, logout using the right mouse button popup screen to select "Logout". After a few seconds, the desktop will exit and you will be back at the shell prompt.

Another task that would be wise to perform is to change the default Linux root password. To change the Linux root password, type "passwd" (without the quotes) at a Linux command line prompt, then press the Enter key. Follow the prompts to enter a new password.

To logout from the shell, enter Cntrl-D or type logout and touch the Return key. **It is VERY important to logout of the shell or lock the KDE desktop when not in use. Unauthorized access can only be prevented in this way.** It is recommended that the DASDEC root password is changed even if the standard access will be by a LAN.

#### **4.1.2. Directly connecting a networked host computer**

Connect a CAT-5 network crossover cable to the RJ45 port at the back of the DASDEC and to the RJ45 port of the network interface card (NIC) of a standalone PC or notebook computer. Configure the standalone PC to use the static IP address 192.168.0.2 with a net mask of 255.255.0.0. After DASDEC power up and booting, it can be accessed via a Web browser on the host computer.

Now, launch a Web browser application and direct the URL to <http://192.168.0.1/>. The DASDEC will provide a gateway page and quickly redirect to the DASDEC login page. Follow the instructions below for logging in to the DASDEC using the Web login page. After login, the DASDEC is ready to use, although often, it would be desirable to reconfigure the network address.

#### **4.1.3. LAN connection with a networked host computer**

Connect a standard CAT-5 network cable from the RJ45 port at the back of the DASDEC into a a routing hub or other network switching device. You will likely need assistance from a network administrator to insure the DASDEC's default network address of 192.168.0.1 will be visible on the network, or will not clash with an existing node. Once the DASDEC is powered up, booted, and operational, it can be accessed via a Web browser from any remote computer on the LAN routed to see the address 192.168.0.1. Follow the instructions below for logging in to the DASDEC using the Web login page.

#### 4.2. Web Server Login

When the DASDEC successfully connects for a Web session, it will present the following page in the Web browser.



Type "Admin" (no quotes) as the default user name, and "dasdec" (again, without quotes) as the password. Press the left mouse button over the Login button. With the correct user name and password, the DASDEC will login. If the user or password is incorrect, the DASDEC will display a message indicating the problem. If the DASDEC is left unattended for 10 minutes, it will automatically logout. The DASDEC should present the following page (if this is the first login, subsequent logins will start at the page presented prior to logout).

The Setup Server page presents some basic server configuration options. These will be covered later, but at the first login, before the DASDEC can be used, you must check if the Master product key has been preconfigured or if it needs to be entered.

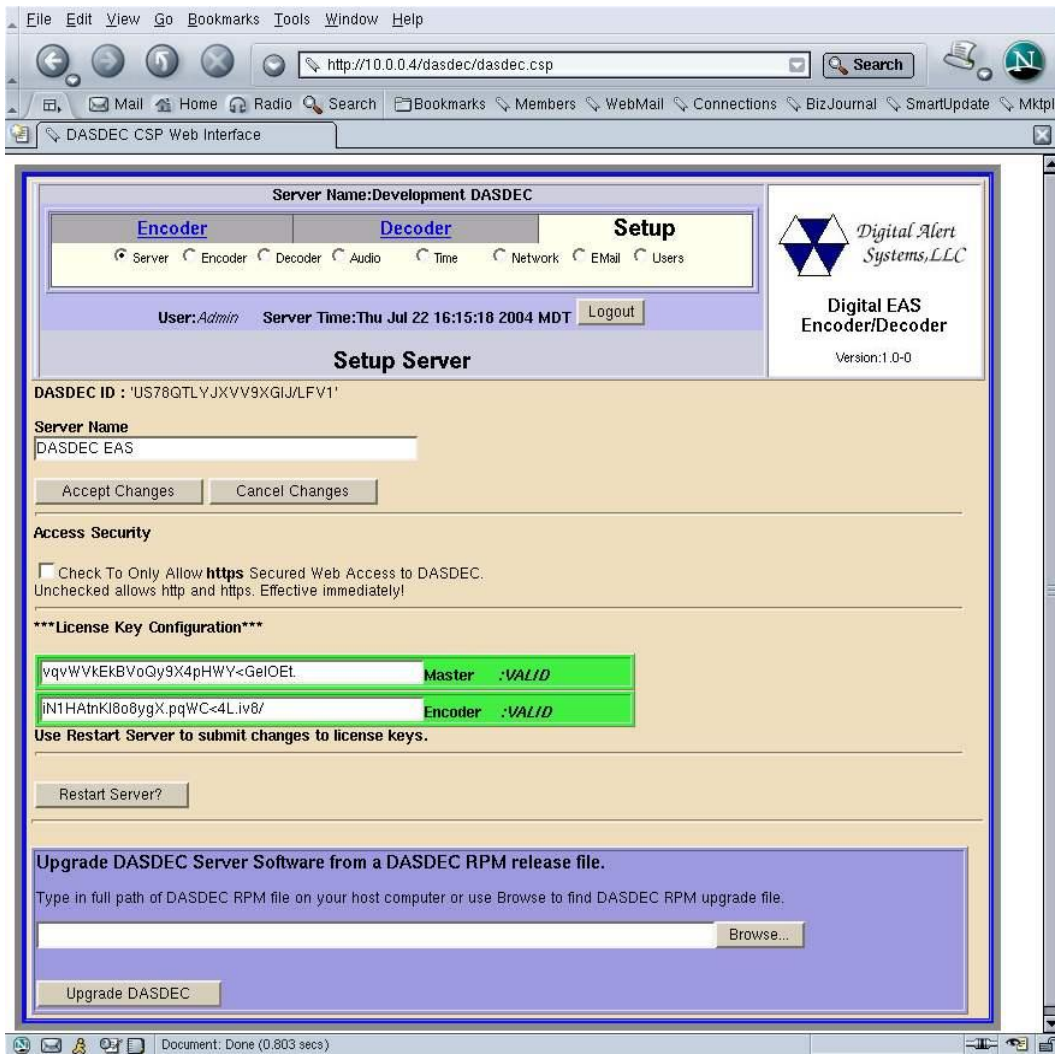
**4.2.1. Product License Key Configuration**

The core DASDEC software will only run if it has been enabled using a Master license key. If a valid key has been entered, the Setup Server page will show a green box labeled Master with the text key inside and the extra label :VALID. Check to see if this key has been preconfigured on the DASDEC. If it has not, or if an incorrect key has been entered, the Master key field will appear in red and be labeled :NOT VALID. In this case, obtain a Master key from the factory and enter as directed.

A second product key protects the Encoder functionality. Follow the same procedure for enabling the Encoder.

Once a valid Master key has been enabled, the DASDEC is ready to configure for decoding. Once a valid Encoder key has been enabled, the DASDEC's encoder can be configured.

Even without a valid Master key, you can still configure a subset of the basic DASDEC features. The network can be configured, a new server

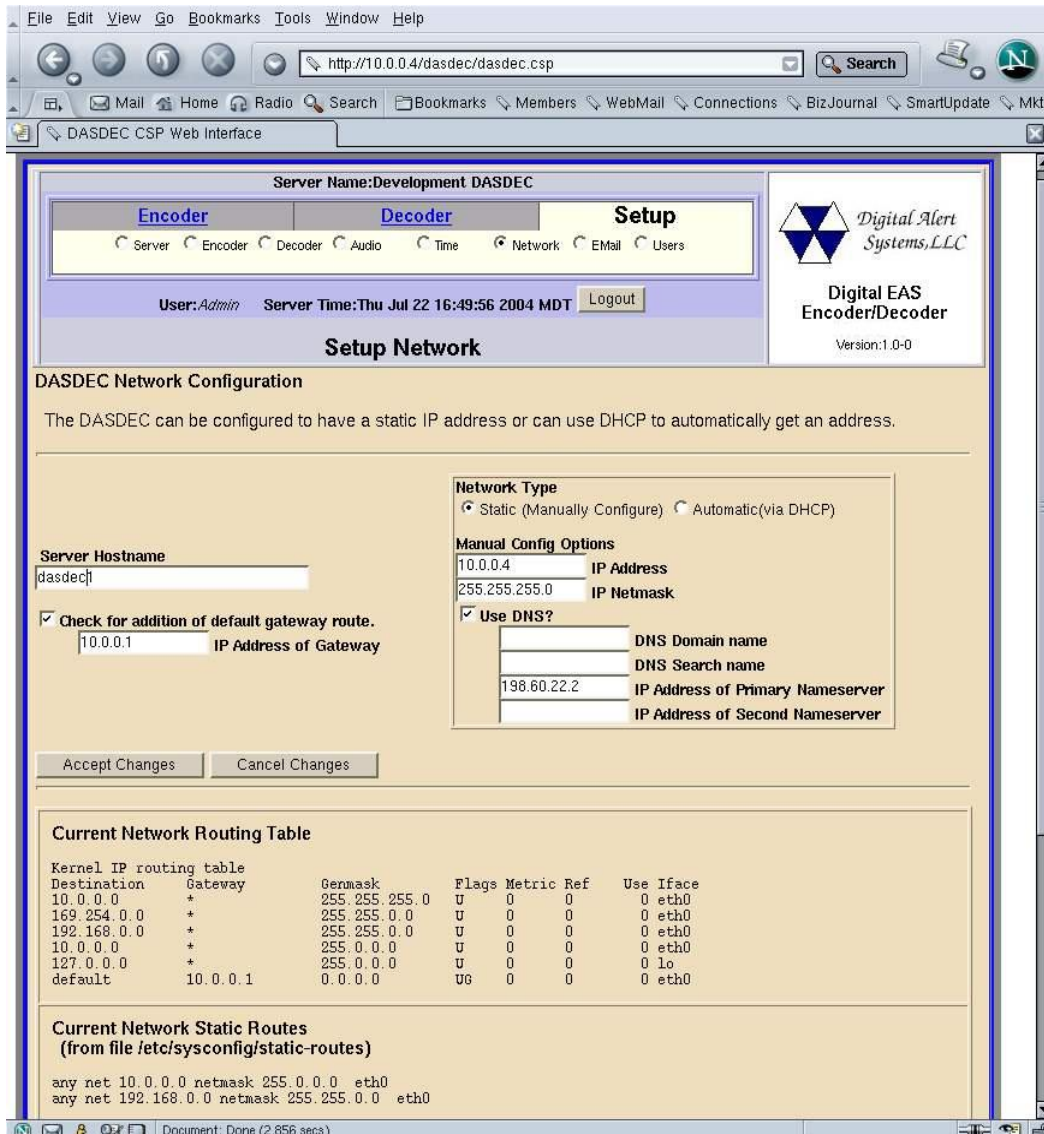


name, and security features, like the Web interface login password and forced https access, can be configured.

Enter the Network configuration page by clicking the left mouse button over the Setup-> Network radio toggle.

### 4.3. Network Configuration

The DASDEC network address information can be configured from the Setup Network page. The DASDEC can be configured for a static IP address or can be configured to use DHCP to automatically acquire an IP assignment. Other network configuration options include setting the netmask, optional DNS (domain name services), and an optional gateway value. Here is an example of the DASDEC Setup Network Web page interface.



### 4.3.1. Default network setup

The DASDEC by default is given a static IP address of 192.168.0.1. Also by default the IP netmask is set to 255.255.0.0. There is no default DNS or gateway configured.

The screenshot shows a network configuration window. On the left, there is a 'Server Hostname' field containing 'dasdec1' and a checkbox labeled 'Check for addition of default gateway route.' which is unchecked. On the right, the 'Network Type' section has 'Static (Manually Configure)' selected. Below it, the 'Manual Config Options' section shows 'IP Address' set to '192.168.0.1' and 'IP Netmask' set to '255.255.0.0'. There is also an unchecked checkbox for 'Use DNS?'. At the bottom, there are 'Accept Changes' and 'Cancel Changes' buttons.

### 4.3.2. Setting the IP address using DHCP

DHCP is a very convenient way to network a computer. It requires that your LAN be running an accessible DHCP server. When DHCP is used, the IP address, the netmask and a DNS server are automatically granted. To use DHCP on the DASDEC simply select the Network Type button to Automatic (via DHCP) and then click the Accept Changes button. See the illustration below.

The screenshot shows the same network configuration window but with 'Automatic (via DHCP)' selected under 'Network Type'. The 'Check for addition of default gateway route.' checkbox is now checked, and the 'IP Address of Gateway' field is set to '10.0.0.1'. The 'DHCP Values && optional 2nd Nameserver config' section is expanded, showing fields for 'DNS Domain name', 'DNS Search name', 'IP Address of Primary Nameserver' (set to '198.60.22.2'), and 'IP Address of Second Nameserver'. The 'Accept Changes' and 'Cancel Changes' buttons are at the bottom.

Once the DHCP setting is accepted, the DASDEC will log you off. After a few seconds wait, you can then log back in on the provided Login page, as before.

### 4.3.3. Setting the IP address manually

To set a new static IP address, select the Network type to be Static. Then fill in the values for the desired IP address and Netmask. If needed, also select Use DNS and/or Check for addition of a default gateway route, and enter the corresponding values. This example shows a new IP address of 10.0.0.4 and a netmask of 255.255.255.0, as well as a DNS and gateway configuration. See below. To set the new values select the Accept Changes button. Once the new settings are accepted, the DASDEC will log you off. After a few seconds wait, you can then log back in on the redirected address on the provided Login page, as before. **IMPORTANT! You must be CAREFUL when configuring a static network address if you are configuring from a remote host. If an address which is inaccessible to your network is accepted for the DASDEC, you will be unable to log back in from the remote host.** If this happens to you accidentally or on purpose, you will have to directly login to the DASDEC from a directly connected VGA monitor, keyboard and mouse. You can always configure the DASDEC from this direct connection.

The screenshot shows a network configuration window with the following fields and options:

- Server Hostname:** dasdec1
- Check for addition of default gateway route.**  
10.0.0.1 IP Address of Gateway
- Network Type:**  Static (Manually Configure)  Automatic (via DHCP)
- Manual Config Options:**
  - 10.0.0.4 IP Address
  - 255.255.255.0 IP Netmask
  - Use DNS?**
    - mydns.com DNS Domain name
    - DNS Search name
    - 158.60.22.2 IP Address of Primary Nameserver
    - IP Address of Second Nameserver
- Buttons:** Accept Changes, Cancel Changes



#### 4.3.4. Network status information

To view the current network routes and network address information, refer to the provided tables at the bottom of the Setup network page. Here is an example.

Current Network Routing Table							
Kernel IP routing table							
Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface
10.0.0.0	*	255.255.255.0	U	0	0	0	eth0
169.254.0.0	*	255.255.0.0	U	0	0	0	eth0
192.168.0.0	*	255.255.0.0	U	0	0	0	eth0
10.0.0.0	*	255.0.0.0	U	0	0	0	eth0
127.0.0.0	*	255.0.0.0	U	0	0	0	lo
default	10.0.0.1	0.0.0.0	UG	0	0	0	eth0

Current Network Static Routes (from file /etc/sysconfig/static-routes)			
any net	10.0.0.0	netmask 255.0.0.0	eth0
any net	192.168.0.0	netmask 255.255.0.0	eth0

Current Network Configuration	
eth0	Link encap:Ethernet HWaddr 00:40:63:D4:F8:6E inet addr:10.0.0.4 Bcast:10.0.0.255 Mask:255.255.255.0 UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1 RX packets:58324 errors:0 dropped:0 overruns:0 frame:0 TX packets:67591 errors:0 dropped:0 overruns:0 carrier:0 collisions:1281 txqueuelen:1000 RX bytes:8760886 (8.3 Mb) TX bytes:10950864 (10.4 Mb) Interrupt:11 Base address:0xdc00
lo	Link encap:Local Loopback inet addr:127.0.0.1 Mask:255.0.0.0 UP LOOPBACK RUNNING MTU:16436 Metric:1 RX packets:123844 errors:0 dropped:0 overruns:0 frame:0 TX packets:123844 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:0 RX bytes:13105973 (12.4 Mb) TX bytes:13105973 (12.4 Mb)

## 4.4. Server Configuration

### 4.4.1. Setup Server Page

This page has several basic configuration options and information.

Server Name: Development DASDEC

Encoder Decoder Setup

Server Encoder Decoder Audio Time Network EMail Users

User: Admin Server Time: Thu Jul 22 16:15:18 2004 MDT Logout

**Setup Server**

DASDEC ID : 'US78QTLYJXVV9XGIJ/LFV1'

Server Name  
DASDEC EAS

Accept Changes Cancel Changes

**Access Security**

Check To Only Allow **https** Secured Web Access to DASDEC.  
Unchecked allows http and https. Effective immediately!

**\*\*\*License Key Configuration\*\*\***

vqvWVKEKBVoQy9X4pHWY<GeIOEt. Master :VALID

iN1HAtnKI8o8ygX.pqWC<4L.iv8/ Encoder :VALID

Use Restart Server to submit changes to license keys.

Restart Server?

**Upgrade DASDEC Server Software from a DASDEC RPM release file.**

Type in full path of DASDEC RPM file on your host computer or use Browse to find DASDEC RPM upgrade file.

Browse...

Upgrade DASDEC

#### 4.4.1.1. DASDEC platform ID

This is a unique identifier for the actual DASDEC hardware. This is different for every DASDEC. It cannot be edited.

#### 4.4.1.2. Server Name

The Setup Server page allows the DASDEC server name to be edited. If changes are made to this value, save them by clicking Accept Changes.

#### 4.4.1.3. Access Security Configuration

If this checkbox is selected, web access to the DASDEC will be forced to be in 128 bit SSL secured https.

#### 4.4.1.4. Product License Key Entry

The text boxes in this section allow features to be enabled in the DASDEC.

**4.4.1.5.Restart**

This button can be clicked to restart all of the DASDEC server software. A confirmation page is displayed before the restart is actually run. USE THIS OPTION WITH CARE!

**4.4.1.6.Software Upgrade**

DASDEC software can be conveniently upgraded through the Web interface with this feature. DASDEC upgrades are done using RPM files. The RPM file must be available from or on your local host computers file system to use this feature. Simply type the path name of the file into the text box, or browse your local computers file system until you locate the RPM file, then click on the Upgrade DASDEC button. A confirmation page will allow you to continue with or cancel the upgrade. After accepting the upgrade, status will be returned about the file if it is not a correct upgrade file. Otherwise, you will be logged off the DASDEC Web interface and will be directed to log back in after a short waiting period.

**4.4.2.DASDEC Clock and NTP**

The Setup Time page allows the hardware clock on the DASDEC to be set.

Server Name:Development DASDEC

**Encoder**      **Decoder**      **Setup**

Server   Encoder   Decoder   Audio   **Time**   Network   EMail   Users

User:Admin   Server Time:Thu Jul 22 17:36:19 2004 MDT   Logout

**Setup Time**

Digital Alert Systems,LLC

Digital EAS Encoder/Decoder

Version:1.0-0

**DASDEC Date and Time Configuration**

Make changes to date and/or time and/or timezone, then press Submit button.

**Date and Time**

Jul 22 2004  
 Mon:Day:Year  
 17:36:19  
 Hrs:Min:Secs

**DASDEC Time Zone**  
 If changed, DASDEC software will restart when changes are submitted!  
 Mountain

[Official time link](#) (if your browser has Internet access).

Submit Date/Time/Timezone Changes   Cancel Changes

**Network Time Protocol (NTP) Configuration**

The DASDEC clock can be synchronized to a remote clock using NTP. Provide a valid remote NTP server name or IP address accessible from your network. If the NTP Server name is left blank, and NTP is enabled, this DASDEC can be used as an NTP master clock for other systems.

NTP Server name or IP Address (restart NTP to submit changes):http1.mainecoon.com

Check this to start/restart NTP. Uncheck to stop NTP. Changes are immediately effective!

[Public NTP Servers](#) (if your browser has Internet access).

Date, time, and timezone may be set. If Timezone is changed, the DASDEC will restart and you will be forced to log back in to the Web interface. If the time is set forward far enough, you will also be forced to log back into the DASDEC Web interface.

The DASDEC supports Network Time protocol (NTP) to synchronize its clock to another clock over a network. This can be used to synchronize the DASDEC to an atomic clock over the Internet, or to another computer running NTP on your LAN, or to another DASDEC running as an NTP server on your LAN. You must enter a name of a remote NTP server that is accessible from the DASDEC LAN. Public NTP servers can be viewed by following the provided link. **NOTE: The computer hosting the Web browser must have Internet access to follow this link. And the DASDEC must be able to contact the chosen NTP server.**

The checkbox for NTP must be checked to start NTP. If no NTP server name is entered and NTP is enabled, then the DASDEC will become an NTP server that can be pointed at from other DASDEC's over the LAN.

#### 4.4.3.Admin Password

The Setup Users page can be used to change the Web Interface password for the Admin user. Simply type in the current password and twice the new password in the provided fields. Then click on Submit Changes. The change is effective immediately.



#### 4.4.4. Email Server

To set the outgoing email server name, enter the Setup Email page. From this page you can set the name of the SMTP server for outgoing emails from the DASDEC. Once a name is entered in the text field, click on the Set & Test Mail Server Name button. The DASDEC will attempt to "ping" this email server. If it succeeds, the message "OK:Contacted Email Server" will be displayed under the name. If the ping attempt fails, the message "There is NO Mail Server configured. Email cannot be sent." will be displayed. To test if email can actually be sent via the chosen email server, type a valid email address in the To: text field and click on Send Test Email. If this works, the chosen recipient should receive an email.

The screenshot shows the 'Setup Email' configuration page in the DASDEC web interface. At the top, it displays 'Server Name: Development DASDEC'. Below this is a navigation menu with tabs for 'Encoder', 'Decoder', and 'Setup'. Under the 'Setup' tab, there are radio buttons for 'Server', 'Encoder', 'Decoder', 'Audio', 'Time', 'Network', 'Email' (which is selected), and 'Users'. The user is identified as 'Admin' and the server time is 'Fri Jul 23 17:32:29 2004 MDT'. A 'Logout' button is present. The main heading is 'Setup Email'. Below this, the section is titled 'DASDEC EMail Configuration' and contains the instruction: 'Make changes to SMTP server name, then press Set & Test Mail Server Name button.' There is a text input field for 'Outgoing Email Server Name' containing 'mail.mysmtpserver.com', followed by a 'Set & Test Mail Server Name' button. Below that is a 'To:' text input field and a 'Send Test EMail' button. On the right side of the interface, there is a logo for 'Digital Alert Systems, LLC' and text identifying the software as 'Digital EAS Encoder/Decoder Version: 1.0-0'.

### 4.4.5. Audio levels and tone testing

The audio input and output levels for the DASDEC can be configured from this page. Also, audio tones can be played through each available audio output in order to test the output and calibrate levels using audio test equipment. Every DASDEC will show the configuration interface for the Internal Speaker and for the Main Audio. If an optional PCI soundcard is placed in the DASDEC PCI expansion slot, then the Auxiliary Audio 1 interface will also appear. Configure the levels by entering numbers from 0 to 100 for any specific port. **NOTE: Most of these same levels can be viewed and reset from two other DASDEC Web interface pages. The input levels are available within the Setup Decoder Audio page. It is preferable to set the inout levels from that page. The output levels appear in both the Setup Decoder Audio page and the Setup Encoder Audio page.**

Changes do not occur until the Accept Changes button is clicked. Cancel Changes may be clicked to return the original values. Values near 70 are a good starting point for the DASDEC.

To test the Main and/or Auxiliary Audio outputs, attach speakers to the DASDEC audio device output ports and run the various tone test buttons. The Internal Speaker can simply be tested as is. These tests allow the DASDEC to play each of the two single tones that comprise the dual-tone EAS Attention Signal. The duration of the test is set per Audio device by the Test Tone Duration fields.

Server Name: Development DASDEC

Encoder Decoder Setup

Server Encoder Decoder Audio Time Network Email Users

User: Admin Server Time: Fri Jul 23 17:35:19 2004 MDT Logout

Digital Alert Systems, LLC

Digital EAS Encoder/Decoder Version: 1.0-0

### Setup Audio

Internal Speaker (/dev/mixer1)

Output Level (0..100)

Tone Test Duration (1..180 Sec)

Test 960 Hz Tone Test 853 Hz Tone

---

Main Audio (/dev/mixer0)

Output Level (0..100) L  R

Input Level (0..100) L  R

Tone Test Duration (1..180 Sec)

Test 960 Hz Tone Test 853 Hz Tone

---

Auxiliary Audio 1 (/dev/mixer2)

Output Level (0..100) L  R

Input Level (0..100) L  R

Tone Test Duration (1..180 Sec)

Test 960 Hz Tone Test 853 Hz Tone

Accept Changes Cancel Changes



### 4.5.Decoder Setup

By default, a DASDEC will run two EAS decoders from the Main audio device. It will decode EAS out of the box, once the Master license key is valid. But it is important that the decoder be configured to information important to it's specific location. The Decoder Setup page has three tabbed sub-pages. The FIPS ID sub-page is used to set the location code for the DASDEC. The Auto Forwarding sub-page is used to setup EAS alert automatic forwarding, and the Audio page is used to configure the EAS decoders.

#### 4.5.1.Station FIPS ID

Set this to the FIPS location code for the geographical location of the DASDEC. The top popdown menu selects the State or territory, the second popdown menu selects the County or County equivalent area.



### 4.5.2.Decoder Auto-Forwarding Setup

This tabbed sub-page of the DASDEC Decoder Setup allows for configuration of automatic alert "forwarding". Forwarding is when a decoded EAS is relayed out an audio output of the DASDEC, presumably into a broadcast audio signal. This sub-page contains configuration of two important identity settings, and also for selecting EAS alerts that are automatically forwarded.

#### 4.5.2.1.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 decoder forwards an EAS. This code is used for both manually forwarded alerts and automatically forwarded alerts.



#### **4.5.2.2.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 both manually forwarded alerts and automatically forwarded alerts.

#### **4.5.2.3.Auto-Forward EAS Types Setup**

The DASDEC must be configured for the types of EAS alerts that are to be automatically forwarded. Simply choose each EAS code type from the popdown menu and click on the Add button. Those codes selected for automatic forwarding 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.

#### **4.5.2.4.Auto-Forward FIPS Locations Setup**

The DASDEC must also be configured for the FIPS locations that are to be automatically forwarded. Simply choose each FIPS location code for both the State or Territory and the County or County Equivalent from the two popdown menus and click on the Add button. Those FIPS locations selected for automatic forwarding will appear in the selection box on the right side. To remove any location from the auto-forward list, select from the auto-forward selection list and click Remove Selected. All operations are immediate.

### 4.5.3. Audio Input Configuration

Each DASDEC EAS decoder channel can be independently tuned for input sensitivity, and also can be enabled and disabled. The Setup Decoder Audio tabbed sub-page allows the decoder channels to be configured. The audio output channels and their levels used during alert forwarding are also configured from this sub-page. These same channel levels can also be set from the Setup Audio page, but this interface does not include the decoder channel context, so it takes an advanced user to set inout levels from that page.

**FIPS ID** | **Auto Forwarding** | **Audio**

#### Alert Detection Audio Configuration

Main Audio (/dev/mixer0)  
Left Level: 73  Check to Enable Left Channel EAS Decoder  
Right Level: 72  Check to Enable Right Channel EAS Decoder

Auxiliary Audio 1 (/dev/mixer2)  
Left Level: 73  Check to Enable Left Channel EAS Decoder  
Right Level: 72  Check to Enable Right Channel EAS Decoder

Select Decoder Audio to Monitor: None, Main Left  
Decoder Audio Monitor Output: None, Main Audio, Internal Audio, Aux 1 Audio

#### Alert Forwarding Audio Configuration

Main Audio (/dev/mixer0)  
Output Level (0..100): L 88 R 88  Enable Decoder Alert Forwarding on Main Audio Output

Auxiliary Audio 1 (/dev/mixer2)  
Output Level (0..100): L 67 R 62  Enable Decoder Alert Forwarding on Aux 1 Audio Output

Accept Changes | Cancel Changes