

CAP-DEC 1 User Guide

5.10.2012

v2.23 3-27-2012

The CAP-DEC 1 Intermediary Device

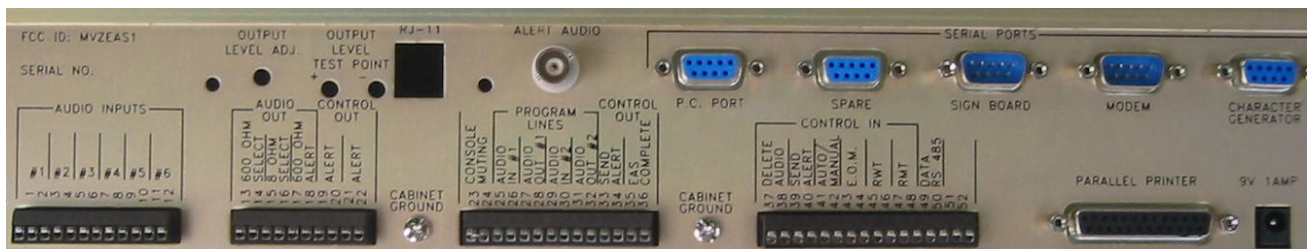
The FCC classifies Common Alerting Protocol (CAP) equipment into three categories: integrated devices, universal intermediary devices and component intermediary devices.

The Gorman-Redlich CAP-DEC 1 unit is set to operate as a universal intermediary device. This means that it will transform valid CAP alerts into EAS messages and output them as bursts of FSK data, attention tone, message audio and EOM which can be input to a variety of EAS encoder/decoder devices. The *CAP-DEC 1c* unit operates as a component intermediary device. This means that the unit will transform valid CAP alerts into EAS messages and output them by means of a specialized data packet to a compatible Gorman-Redlich EAS1 unit.

In most cases, users will have a CAP-DEC 1 universal intermediary device which is connected to their EAS unit via an audio cable and requires no special updates for their EAS encoder/decoder. In sections of this user guide where the differentiation is made between universal and component intermediary devices, users should ensure that the appropriate set of instructions are followed.



Gorman-Redlich CAP-DEC 1 rear panel



Gorman-Redlich EAS1 Encoder/Decoder rear panel

Hardware Connections

Connections for Setup

Prior to using the CAP-DEC 1 unit, some minor initial setup must be performed to ensure proper operation. This setup requires your interaction with the unit via normal PC interface hardware (e.g. keyboard, mouse, monitor).

1. Connect a mouse using either a PS/2 connection to the MOUSE port or a USB connection to any of the available USB ports on the rear of the CAP-DEC 1 unit.
2. Connect a keyboard using either a PS/2 connection to the KEYBOARD port or a USB connection to any of the available USB ports on the rear of the CAP-DEC 1 unit.
3. Connect a monitor using a VGA cable to the VGA PORT on the rear of the CAP-DEC 1 unit.
4. Connect a network-attached ethernet cable to the RJ45 LAN port on the rear of the CAP-DEC 1 unit.
5. Power on the CAP-DEC 1 unit by attaching the 12V 5A AC adapter (labeled CAP-DEC 1 power supply) to the power jack (labeled 12V 5A) on the rear of the CAP-DEC 1 unit and plug it in to the power source.

Unit Setup

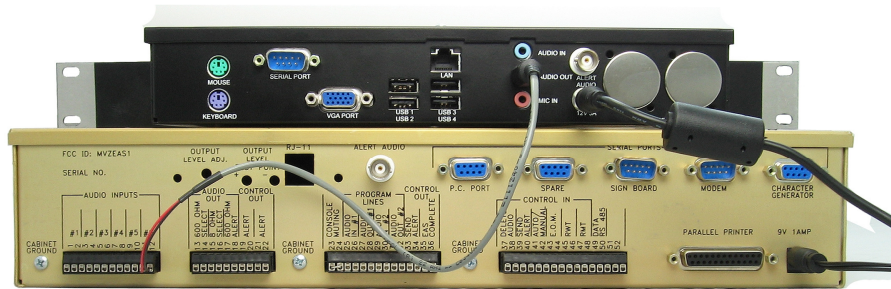
Once the unit is powered up with the above connections, the CAP-DEC 1 unit may be configured as desired to station-specific preferences including network setup, printer installation, monitoring and interface options (e.g. logging devices), USB peripherals (e.g. flash drives), etc. (*see Software Setup section below*).

Due to the varied nature of such setup from one station to another, it is impossible to cover all possible setup procedures. Manufacturer's instructions should be followed for installation and use of devices such as printers, USB drives, USB-to-RS232 adapters, logging devices or software, etc.

The CAP-DEC 1 unit must be configured for connectivity with your station's specific network setup. Again, due to the varied nature of such systems, it is impossible to cover all possibilities here. The steps necessary to ensure CAP-DEC 1 connectivity mirror those required for any PC on your network. This includes opening/unblocking ports for HTTP requests (default: 80) and SMTP activity if email functionality is desired (default: 25). The CAP-DEC 1 executable (software) should be allowed access through station firewall and other network protection. If your station's network utilizes dynamic host control protocol (DHCP), simply attaching the CAP-DEC 1 to the network should provide connectivity. If static IP addressing is required, such settings may be entered by navigating to START | Control Panel and searching for the View Network Connections option. Right-mouse-click the connection to be used and choose Properties. Contact your station's network technician for station-specific setup details.

Connections for Operation

Once the unit has been properly configured for operation, interface devices such as a keyboard, mouse and monitor are not required for normal operation although they may be left attached for monitoring, testing or further setup. The network cable must remain attached so that the unit is able to receive CAP alerts and the power cable must remain attached. The following connections must be made to ensure delivery of CAP-converted EAS alerts between the CAP-DEC 1 unit and the EAS decoder.



Connected Gorman-Redlich CAP-DEC 1 and EAS1 units
(universal intermediary device configuration)

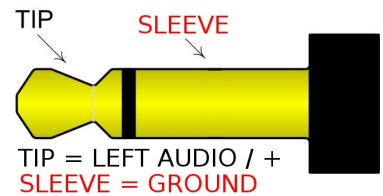
Use as a Universal Intermediary Device

(With any certified EAS encoder/decoder, including Gorman-Redlich EAS1 products)

1. Connect the 1/8" TRS plug of the audio cable to the green AUDIO OUT port on the rear of the CAP-DEC 1 unit. Install the red and black wires of the audio cable into the EAS unit on a channel capable of monitoring for and parsing frequency shift keyed (FSK) EAS headers (see encoder/decoder manufacturer documentation for details).

For Gorman-Redlich EAS1 units, the CAP-DEC 1 should be connected to the next available, unscanned audio input. For example, if your EAS1 currently scans 5 inputs, the audio cable should be connected to audio input #6 (terminals 11 and 12) as shown above.

NOTE: Unlike the Gorman Redlich EAS1, some other manufacturers do not use a transformer isolated balanced audio input. In the event the CAP-DEC 1 will be connected to an encoder-decoder unit with an unbalanced input, check your audio interconnect cable to make certain which of the conductors is connected to the ground on the audio plug that you insert into the audio out receptacle on the CAP-DEC 1.



Use as a Component Intermediary Device

(With Gorman-Redlich EAS1 encoder/decoder units with software v9.7 and above)

1. Connect the female end of the RS232 cable to the SERIAL PORT on the rear of the CAP-DEC 1 unit and the male end to the SPARE port on the rear of the EAS1 unit.
2. Connect the 1/8" TRS plug of the audio cable to the green AUDIO OUT port on the rear of the CAP-DEC 1 unit. Install the red and black wires of the audio cable into the appropriate AUDIO INPUT terminals (1-12) on the rear of the EAS1 unit (see EAS setup below for details on choosing the correct audio input channel).

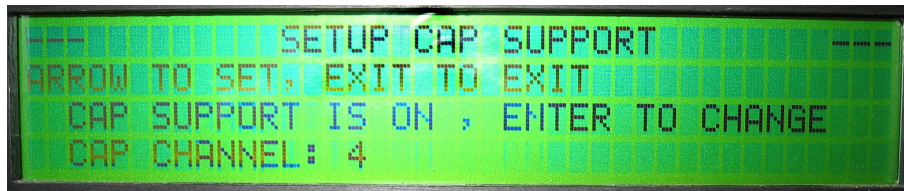
EAS1 Setup

Universal Intermediary Device Configuration

In the universal intermediary device configuration, the EAS encoder/decoder simply needs to be configured to monitor the audio input channel into which the CAP-DEC 1 audio output is connected. For Gorman-Redlich EAS1 encoder/decoders, this is achieved as follows:

1. Press the [MENU] key on the front panel of the EAS1 unit (button 7).
2. Enter the four-digit technician password.
3. At the Utility Menu screen, press the [DOWN ARROW] key to navigate to menu item 4 (SET SCANNING) and press [ENTER].
4. Ensure that the audio channel to which the CAP-DEC 1 audio output is connected is being scanned.
5. Press the [EXIT/0] key to return to the utility menu, press the [UP ARROW] key to navigate to menu item 3 (SET INPUT LEVEL) and press [ENTER].
6. Navigate to the audio channel to which the CAP-DEC 1 audio cable is connected and press [ENTER].
7. Set the input level to 75 using the arrow keys and then press the [EXIT/0] key until you return to the main screen with the clock displayed.

Component Intermediary Device Configuration



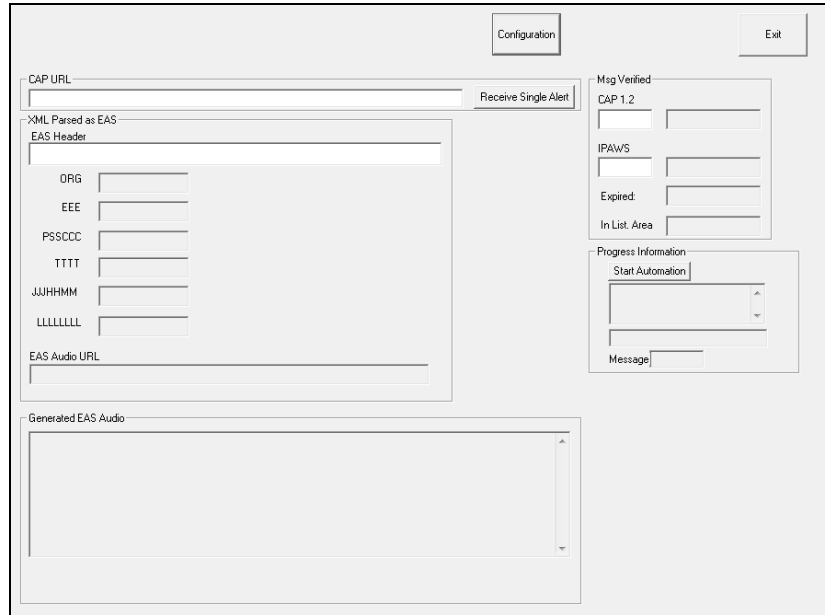
Gorman-Redlich EAS1 encoder/decoder display panel

Some setup is required of the EAS unit in order to receive CAP-translated EAS messages from the CAP-DEC 1 via RS232. *Note: These steps are not required when operating the CAP-DEC 1 as a universal intermediary device (AFSK tones). For universal intermediary device operation, CAP support should be set to OFF.*

1. Press the [MENU] key on the front panel of the EAS1 unit (button 7).
2. Enter the four-digit technician password.
3. At the Utility Menu screen, press the [DOWN ARROW] key to navigate to menu item 14 (CAP SETUP) and press [ENTER]. The menu above will be displayed.
4. Pressing [ENTER] here will toggle CAP-DEC 1 support ON or OFF. Ensure that CAP support is ON.
5. The CAP channel will also be displayed. This channel corresponds to the AUDIO INPUT channel to which the audio cable should be connected.
6. Press the [EXIT/0] key until you return to the main screen with the clock displayed.

Software Setup

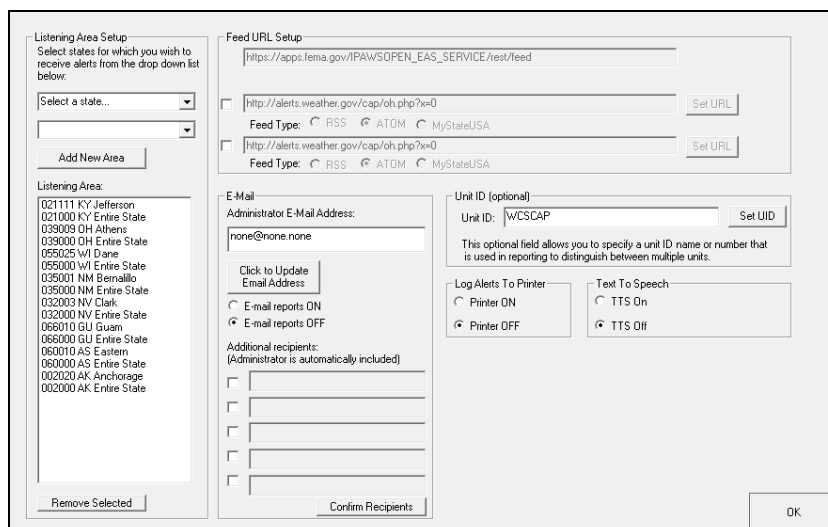
The CAP-DEC 1 software begins automatically once the unit has completed the boot-up process. The software consists of two dialogs: the main software dialog and the configuration dialog.



CAP-DEC 1 Main Software Dialog

The main software dialog contains information about and results from message processing as well as the button to open the configuration interface.

The bulk of the CAP-DEC 1 software configuration is accomplished in the configuration dialog, which may be reached by clicking the “configuration” button at the top of the main CAP-DEC 1 software dialog.



CAP-DEC 1 Software Configuration Dialog

CAP Feed URLs – For Automated Operation

Depending on your state plan, you may be required to monitor more than one CAP alert server. The Gorman-Redlich CAP-DEC 1 unit makes it easy for you to monitor one or more CAP alert server URLs. These URLs and their options are setup in the “Feed URL Setup” area of the configuration dialog.

Enter the URL of the CAP feed that you wish to monitor into the first text box and click the button marked “Set URL” to set the URL. Select the type of CAP alert feed that the URL is pointing to.

1. RSS – Select this option if the URL is for a Really Simple Syndication (RSS) feed.
2. ATOM – Select this option if the URL is for an ATOM feed.
3. MyStateUSA – Select this option to poll MyStateUSA feeds. MyStateUSA feeds should be entered in the format:
`http://mystateusa.com/CapService.svc/GetEasFromStartDate/?username=USER&password=PASS`
where USER and PASS represent the username and password provided to you by MyStateUSA.

The first URL, set to monitor the FEMA IPAWS message aggregator feed, is enabled by default and is not user-editable. Enable a second or third CAP alert URL by marking the check-box next to the URL entry field, entering a feed URL and clicking the “Set URL” button and selecting the feed type.



Feed URL Setup Controls

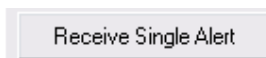
NOTE: If you know the URL(s) that you are required to monitor enter them on the programming sheet on the website and the unit's URLs will be preconfigured upon arrival.

Alert URL – Single Alert Operation

The CAP-DEC 1 is capable of being operated manually in manner which allows it to receive a single message at a time. This functionality is achieved from the main software dialog.



1. Enter the web address (URL) of the single CAP alert to be retrieved and translated.
2. Click the Receive Single Alert button on the interface to begin processing of the alert.



Under most circumstances, users will not utilize this feature.

Listening Area Setup

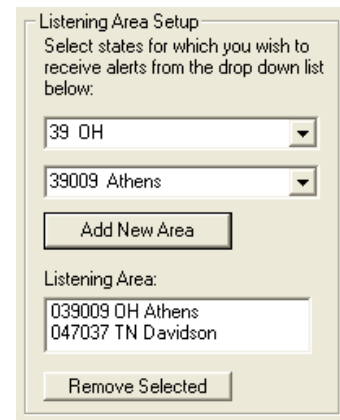
The listening area for the device should be set up using the controls in the “Listening Area Setup” area of the configuration dialog.

To set up area filtering, first select the state for which you wish to receive alerts from the drop-down menu. Next, select the county you wish to add to the listening area and click the “Add New Area” button to move that state code to the list. You may add up to 50 individual counties to the listening area list.

When a county from a new state is added to the CAP-DEC 1 listening area, you will notice that an area called “Entire State” will also be added to the listening area. See note below for more details on the “entire state” location code as well as the CAP-DEC 1 listening area and how it behaves and how it differs from the EAS encoder/decoder listening area.

To remove a state code from the filter list, highlight the code by clicking on it in the Listening Area list and click the “Remove Selected” button below.

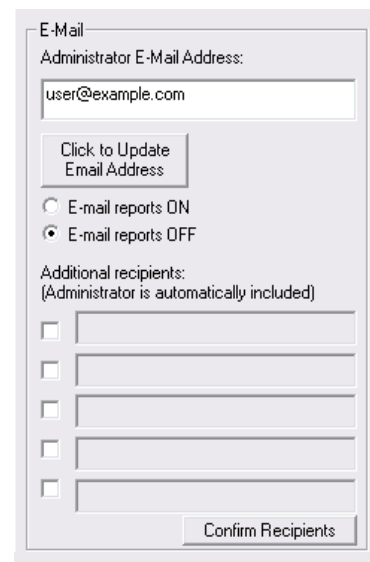
Note on CAP-DEC 1 Listening Area – The CAP-DEC 1 listening area is not necessarily the same as the listening area of an EAS encoder/decoder. The CAP-DEC 1 will trigger on any valid (properly formatted, non-expired) CAP message in its listening area and translate it into EAS header data and audio that is sent to a certified EAS encoder/decoder where it is filtered for message validity and location as usual. The “Entire State” location code (comprised of the state FIPS prefix with a 000 county code) does not mean that the CAP-DEC 1 will trigger on alert messages addressed to any county in that state. Rather, for a message to be translated and forwarded under this code, the message must be specifically addressed to the entire state by inclusion of the entire state location code as might be the case for a statewide governor-generated message.



Email Setup

If you wish to receive emailed reports of the CAP alerts received by the unit:

1. Enter the email address you wish to use in the box marked “Administrator E-Mail Address” and click the button labeled “Update Email Address”. This email address will appear as both the sender and the recipient of generated emails.
2. Mark the radio button for E-mail reports ON to enable email alerts.
3. To enable additional email recipients, mark the check-box next to the first available address entry field and enter the e-mail address at which you wish to receive reports. Click the “Confirm Recipients” button to set the addresses as recipients.



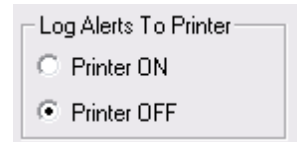
To turn off email alerts:

1. Mark the radio button for E-mail reports OFF or enter none@none.none in the administrator email address field and click Update Email Address. Uncheck the box next to additional recipients to whom you no longer wish to send reports.

NOTE: To help ensure that emails are received, be sure to add the administrator email address to your email client’s “trusted senders” list.

Print Setup

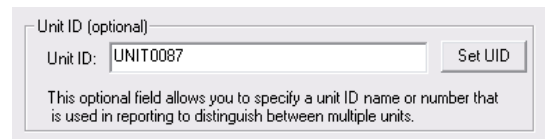
The option to have CAP alert reports logged to a printer is turned on or off via radio buttons located in the Log Alerts to Printer group box in the display. The default option is to not log alerts to a printer. For this option to function correctly a printer must be correctly installed as *specified as the default printer. The CAP-to-EAS Decoder unit has built in support for thousands of USB printers; however, to ensure proper operation of your printer, be sure to follow printer manufacturer's instructions for correct installation and setup.*



NOTE To ensure printer compatibility with the CAP-DEC 1 unit, please ensure that your USB printer is Microsoft Windows 7 compatible.

Unit ID Setup

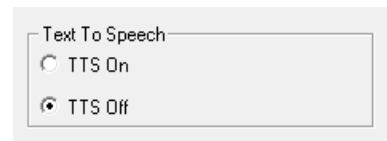
The optional Unit ID field allows you to specify a name or number to identify a particular CAP-DEC 1 unit. The unit identification appears in the printed and emailed reports to distinguish between reports from multiple CAP-DEC 1 units.



To specify a Unit ID, type the desired identification information into the Unit ID field and click the "Set UID" button.

Text to Speech Setup

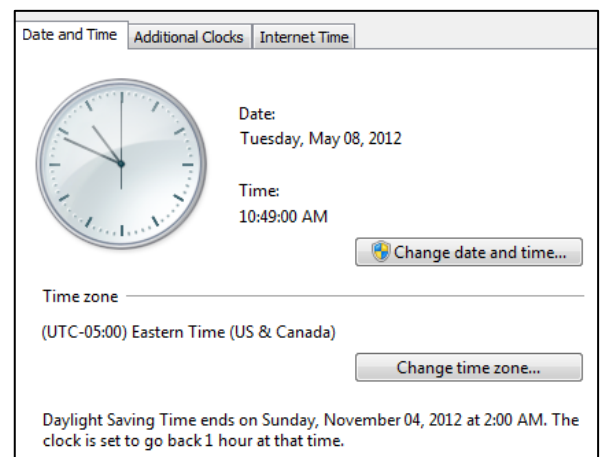
The FCC Fifth Report and Order temporarily prohibited the use of text-to-speech (TTS) technology on the receiving end of CAP alert messages. This prohibition has since been reversed and the use of TTS is now allowed.



Due to the initial uncertainty regarding the use of TTS, the CAP-DEC 1 interface allows the use of TTS to be toggled on or off. As the prohibition has been lifted, TTS should remain ON.

Time Setup

To ensure correct calculation of alert expiration dates and valid time periods, it must be ensured that the unit is properly configured with the correct date, time and time zone settings. To do this, left mouse click on the clock in the lower right of the CAP-DEC 1 display and choose "Change date and time settings..." From within the resulting display (shown at right), ensure that the correct date, time and time zone are set. After the initial setting, the unit will automatically sync via the internet to ensure that the clock stays accurate.



Operation

Once the unit is properly configured as described above, the keyboard, video monitor and mouse used for configuration is no longer required. These items, however, may remain connected for monitoring, future configuration and local log access purposes. Monitoring and configuration may also be achieved by use of an optional KVM switch or VNC technology (may require additional setup and/or hardware). Operation begins automatically upon unit power-on and boot.

The CAP-DEC 1 will poll the specified CAP alert servers and attempt to process new alerts as described below at a periodic interval. Alert summary logs, original XML CAP alert files and attached resource files are stored locally in the CAPEAS directory of the storage device. Upon successful conversion from CAP to EAS, the unit may print and/or email an alert report based on the unit's settings. *Note that these printed reports may not satisfy EAS logging requirements.*

Message Processing

Once an alert has been received (either from the feed during automated operation or from a specific alert address), the CAP-DEC 1 will verify the alert's validity. First, the unit will verify that the message conforms to Common Alerting Protocol v1.2 specifications IPAWS Profile specifications and EAS-CAP Implementation Guide (ECIG) specifications. If the alert message passes this verification step, the message expiration date is checked to ensure that the alert is current. Finally, the targeted area of the alert is checked against the listening area list. The results of these checks are displayed in the *Msg Verified* group box on the user interface. If the message is invalid for any reason, the first reason for failure will be displayed.



Msg Verified	
CAP 1.2	<input type="text"/>
IPAWS	<input type="text"/>
Expired:	<input type="text"/>
In List. Area	<input type="text"/>

Message Success

If the message passes all of the above checks and it is not a duplicate message, it is then translated into an Emergency Alert System (EAS) header as per the ECIG and transmitted, either as RS232 data (for component intermediary device operation) or FSK data tones for universal intermediary device operation) from the audio jack, along with any associated message audio. If no message audio file is associated with the CAP alert and TTS is turned ON, the CAP-DEC 1 will render the CAP "enhanced text" as the audio portion of the message.

The message information is then recorded to the CAP log file. The EAS header, along with the individual fields of the header and the "enhanced text" are displayed on the user interface as shown below.

XML Parsed as EAS	
EAS Header	
CIV-SVR-039009-032003+0200-0891735-CAPALERT-	
ORG	CIV
EEE	SVR
PSSCCC	039009-032003
TTTT	0200
JJHHMM	0891735
LLLLLLL	
EAS Audio URL	
NO ATTACHED AUDIO	

Generated EAS Audio

a civil authority has issued a severe thunderstorm warning until 15 35 eastern daylight time on thursday march 29 2012 for athens, ohio, clark, nevada. message from gorman redlich. this is an example alert for demonstration purposes at 13 35 on thursday, march 29.. please enjoy your visit to the 2012 national association of broadcasters show in las vegas, nevada..

CAP to EAS message conversion information, including the constructed CAP “enhanced text”

Message Failure

If the alert message fails the CAP conformity test, the unit will not attempt to verify IPAWS conformity and this fact will be recorded in the log file. If it passes the CAP verification but fails to create an EAS header, this will be displayed in the EAS alert information area of the user interface as well as noted in the log file.

EAS Header	
CONVERSION FAILED! No header to display	
ORG	EAS FAIL
EEE	HMW
PSSCCC	EAS FAIL
TTTT	0200
JJHHMM	1031119
LLLLLLL	

Logging

In addition to the email and print summary logging capabilities described above in the setup section, the CAP-DEC 1 maintains comprehensive local logs of its alert message activity. Logs are stored on the unit’s main storage device in the *CAPEAS* directory. These logs may be accessed locally on the unit via connected keyboard, display and mouse interfaces or over your local network from a PC connected to your LAN (as network setups may vary, contact your station IT personnel to set up network file sharing access). Navigate to *C:\CAPEAS* to access these files.

Summary Log

The main *CAPEAS* directory contains a file named *log.txt* which contains details about each message received. These details include the CAP-DEC 1 unit ID (useful if you are maintaining logs for multiple units), alert source, whether the alert passed CAP 1.2 and IPAWS Profile constraints, the unique alert identifier, whether the alert is within the unit’s listening area, whether the alert is current or expired and additional message details. The log also contains the path to a local copy of the original XML formatted CAP message and any attached audio. If the message meets all constraints and is successfully converted into an EAS message, the resulting EAS header string is also included in the log file entry.

Original Message Files

Within the main *CAPEAS* directory is a sub-directory named *log*. The *log* directory holds all of the original XML formatted CAP messages that the unit receives regardless of the success or failure of converting them to an EAS message. If the message includes an attached EAS audio file, it is also stored in this directory. Each entry in the summary log file contains the path to its associated XML alert file and attached audio file (if present) in this directory.

Backing Up and Clearing Log Files

From time to time, it may be desirable to back up log files for long term storage or to clear log files to save space on the local storage device. *Please note that it is the user's responsibility to be aware of record keeping and message log requirements and ensure compliance with them.*

Users may find the log files as described above by navigating to the `C:\CAPEAS\` directory on the unit's local storage device using an attached keyboard, display and mouse or via the network from a PC connected to the station's LAN (note that network access and permissions setup is required for this option). Logs may also be accessed remotely via optional VNC interface or a KVM switch (these options may require additional setup and/or hardware).

To backup log files, select the `log.txt` file and the `log` directory and copy/paste them to your desired storage device, such as a USB jump-drive, external hard drive or network location.

To clear log files once backup copies are made, first open the `log.txt` file by double-clicking the file icon. Once the file is open in the text editor, select `Edit | Select All` from the menu bar or press the `ctrl+A` keystroke combination to select the entire contents of the file. Press `delete` to remove the contents and then select `File | Save` from the menu bar or press the `ctrl+S` keystroke combination to save the file. The `log.txt` file may now be closed. Next, navigate to the `C:\CAPEAS\log\` directory. Select `Organize | Select All` from the menu bar or press the `ctrl+A` keystroke combination to select all files within the directory. Press the `delete` key to delete these files, answering "yes" to the dialog window when asked if you are sure that you want to delete the selected files. If the unit has received and logged a very large number of alerts, selection and manipulation of log entries may experience some delay.



GORMAN REDLICH
257 West Union St.
Athens, Ohio 45701
Ph: 740-593-3150
www.gorman-redlich.com