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## **CAP-DEC 1 (CP) User Guide**

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### **CAP-DEC 1 Common Alerting Protocol – Canadian Profile Decoder (CAP-DEC 1 (CP))**

The CRTC requires Canadian broadcasters to fully participate in Canada's National Public Alerting System. As of 31 March 2015, most broadcasters in Canada are required to alert listeners and viewers of imminent threats to life. Campus, community and Native radio and television broadcasters, as well as radiocommunication distribution undertakings, will be required to do so by 31 March 2016.

The Gorman-Redlich CAP-DEC 1 (CP) unit is a purpose-built device meant to help Canadian broadcasters and cable operators meet this alerting requirement. This unit will interface with online alert feeds to retrieve specially formatted alert files, process them, and render them in a format suitable for broadcasters to air in either automated or manned station environments and/or provide the necessary information for station personnel to read the alert information on air.

Alert details are compiled into a "script" that is displayed on screen and saved to an on-board log as well as optionally being printed to a networked or attached printer and emailed to station personnel to be read on air. This script may also be read by the included multilingual text-to-speech (TTS) engine. Audio loop-through functionality can automatically interrupt program audio with the alert audio and TTS message for automated installations. Visual display can be achieved through a number of options, including interface with popular character generators and LED signboard equipment.



*Gorman-Redlich CAP-DEC 1 (CP) rear panel*

# Hardware Connections

## **Connections for Setup**

Prior to using the CAP-DEC 1 (CP) 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, and monitor). Remote control is possible using third party tools (not included).

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 (CP) 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 (CP) unit.
4. Connect a network-attached ethernet cable to the RJ45 LAN port on the rear of the CAP-DEC 1 (CP) unit.
5. Power on the CAP-DEC 1 (CP) unit by attaching the 12VAC 5A adapter (labeled CAP-DEC 1 power supply) to the power jack (labeled 12V 5A) on the rear of the CAP-DEC 1 (CP) unit and plug it in to the power source.
6. If using the automatic program audio interrupt feature, loop analog program audio #1 and/or #2 through the IN/OUT connections indicated on the rear panel (1-8).
7. If using the dry contact closure feature to control external equipment, connect to pins 9 and 10 as indicated on the rear panel.

## **Unit Setup**

Once the unit is powered up with the above connections, the CAP-DEC 1 (CP) 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 installation 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 (CP) 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 (CP) 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 (CP) 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 (CP) 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.

The CAP-DEC 1 (CP) software starts automatically when the unit boots up and the interface will be displayed after a brief initialization period. It may be necessary to restart the software following system changes such as network settings in order for those changes to take effect.

## 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. Program audio loop-through, relay contact closure connections, serial data connections to external video-display equipment, and other station-specific connections should also remain connected as required.

## Software Setup

The CAP-DEC 1 (CP) software begins automatically once the unit has completed the boot-up process.

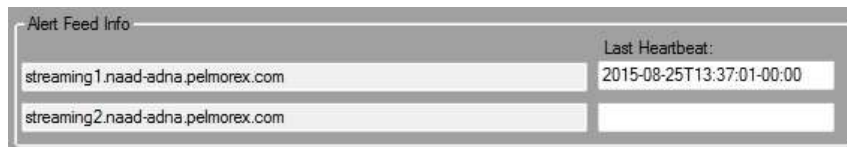
*CAP-DEC 1 (CP) Main Software Dialog*

The main software dialog (shown above) contains information about and results from message processing as well as the bulk of the configuration settings for normal unit operation. If a unit-setup form was submitted to Gorman-Redlich, your unit will arrive pre-configured.

### **CAP Feed URLs**

The CAP-DEC 1 (CP) unit is preconfigured to poll the Pelmorex CAP-CP alert message feeds. There are two available feeds: a primary feed located in Oakville and a secondary feed located in Montreal. These feed URLs are not user-editable.

These alert feeds will “push” out alert information to the CAP-DEC 1 (CP) unit. “Heartbeat” messages are sent out every 60 seconds and broadcast-intrusive alerts are sent as they are available. The timestamp of the last received heartbeat message is displayed beside the active feed’s URL.

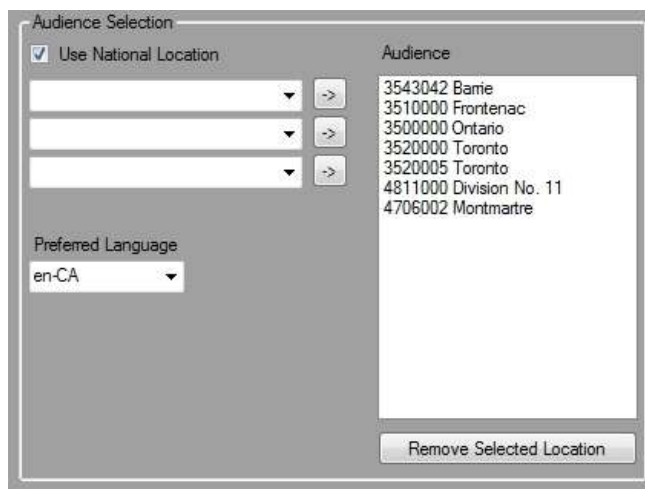


Feed URL Setup Controls

### Audience and Language Setup

The audience area for the device should be set up using the controls in the “Audience Selection” area of the software display. Areas are added as Standardized Geographic Codes (SGC).

To set up area filtering, first select the Province or Territory for which you wish to receive alerts from the top drop-down menu. Census Divisions within that province or territory may be selected from the second dropdown menu. Census Sub-Divisions within that Census Division may be selected from the third drop-down menu.



Location codes at any level may be added by clicking the arrow button next to the area you wish to add.

Locations may be removed from the list by selecting it from the Audience list and clicking the “Remove Selected Location” button.

To enable the use of the “All-of-Canada” national location code, mark the checkbox to receive messages addressed to the entire country.

Four text-to-speech voices are included by default. Choose the Preferred Language by selecting from the drop-down menu English (Canadian) (en-CA); French (Canadian) (fr-CA); English (US) (en-US); or French (France) (fr-FR). If an alert message contains information in the selected language, that information will be given preference during message processing.

### Email Setup

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

1. Enter the email setup information for the device administrator (username, password, email server address, port number). *Passwords are stored on the device as AES encrypted data and are not stored in plain text.*
2. Mark the “Enable Email” checkbox to turn on email notification of processed alerts, device errors, etc.
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.

4. Click the “Apply Email Settings” button to apply the settings you have entered.
5. To ensure that email settings have been entered correctly, click the “Send Test Email” button to send a test email that should be delivered to the administrator and all additional recipients.



To turn off email alerts:

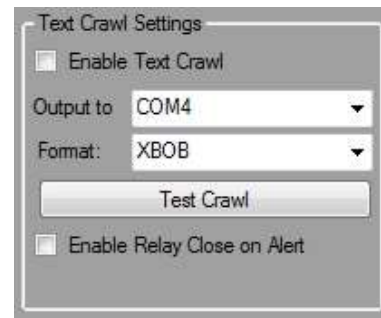
1. Uncheck the “Enable Email” checkbox.

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

### ***Text Crawl and Relay Closure Setup***

The CAP-DEC 1 (CP) has the ability to provide a visual text crawl of the generated alert information (the same text that is read by the text-to-speech feature).

To enable this feature, mark the “Enable Text Crawl” checkbox. **Note:** output port and format settings cannot be modified while the feature is enabled.



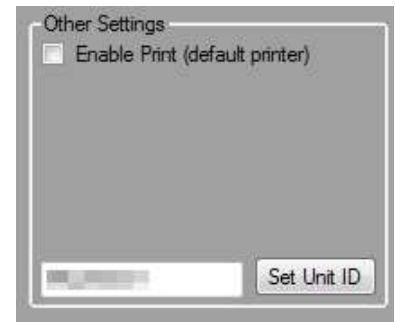
Users have the ability to select one of the available output formats (XBOB, VDS, CODI, Evertz) to send to the selected COM serial port. Selected COM ports may be one of the physical serial ports built in to the unit or a virtual serial port provided by a USB-to-RS232 adapter. Care should be taken to select the correct port to ensure proper operation of the visual text crawl feature.

A “Test Crawl” feature will send a short text crawl message in the selected format to the selected port to test the entered settings.

This area of the software display also contains the setting to enable/disable the relay contact closure opening/closing upon alert processing. This feature allows users to control external devices by triggering them when a received message is processed.

## Other Settings (Printer, Unit ID)

The option to have CAP alert reports logged to a printer is turned on or off via a checkbox located in the Other Settings 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 and *specified as the default printer*. *The CAP-DEC 1 (CP) 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.

The device's Unit ID may also be specified in this area by entering it into the text box and clicking the "Set Unit ID" button. The Unit ID is included in print, email, and on-board logs to help identify which unit created the log. This is most useful in environments in which multiple units are in operation.

## 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 after a brief initialization period upon unit power-on and boot.

The CAP-DEC 1 (CP) will receive push alerts from the CAP alert servers and attempt to process new alerts as described below. Alert summary logs, original XML CAP alert files and attached resource files are stored locally in the CAPCP directory of the storage device. Upon successful processing, the unit may print and/or email an alert report based on the unit's settings.

## Message Processing

Once an alert has been received, the CAP-DEC 1 (CP) will verify the alert's validity. First, the unit will verify that the message conforms to Common Alerting Protocol v1.2 and CAP-CP specifications. If the alert message passes this verification step, the message is checked to ensure that the alert is current. Finally, the targeted area of the alert is checked against the audience area list. The results of these checks are displayed on screen.

The screenshot displays a software interface titled "Received Alert Information". It is divided into several sections:

- Alert Information (TTS Script):** A text area containing a human-readable summary of an alert. The text reads: "cap-pac@ec.gc.ca has issued a airQuality message on Tuesday, August 25, 2015 at 7:34 . Poor air quality over Southern Alberta. Forest fire smoke travelling in from the Northwestern United States is expected to reduce visibilities and create poor air quality over much of Southern Alberta today and overnight. Individuals living in or travelling in this area are advised to be aware of potential health concerns that can be associated with current air conditions. In the current conditions, even healthy individuals may experience temporary irritation of eyes and throat, and possibly shortness of breath. To reduce exposure to the current air conditions, all individuals can: reduce presence of smoke in indoor environments: close and lock all outside windows and doors, including attached garage doors. Turn down furnace thermostats and furnace fans to the minimum setting. Do not attempt to extinguish pilot light. If you have an air-conditioner, keep the".
- Raw Alert Content:** A text area showing the raw XML of the alert. The XML is: 

```
<?xml version="1.0" encoding="UTF-8"?><alert xmlns="um:oasis.names.tc.emergency:cap:1.2" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="um:oasis.names.tc.emergency:cap:1.2 http://docs.oasis-open.org/emergency/cap/v1.2/CAP-v1.2.xsd"><identifier>32164C4A54FE40158E4E71250FEE8B5C</identifier><sender>NAADS-Heartbeat</sender><sent>2015-08-25T13:37:01-00:00</sent><status>System</status><msg Type>Alert</msg Type><source>NAADS-1</source><scope>Public</scope><code>profile:CAP-CP:0.3</code><references>cap-
```
- Configuration Options:** A series of checkboxes and text fields on the right side:
  - Valid CAP v1.2: YES (checked)
  - Valid CAP-CP: YES (checked)
  - Sent Time: 2015-08-25T11:34:00-00:00
  - Event Code: airQuality
  - Broadcast Immediate: NO

## Message Success

If the message passes all of the above checks, relevant elements of the alert's raw XML (which is displayed on screen and stored on-board) are extracted. Those elements are used to generate a human-readable block of text which may include information such as event type, event description, effected areas, and more. This text is displayed on screen and is read using text-to-speech (preceded by an attention tone) from the device's audio out ports.

The message information is then recorded to the CAP log file.

## Message Failure

If the alert message fails the CAP conformity test, the unit will not attempt to verify CAP-CP conformity. If it is not in the audience area, or is otherwise invalid, it will not be processed or logged and no audio or visual output will be rendered.

## Unresponsive Software

If, for any reason, the software becomes unresponsive, or if the connection to the alert feed is lost or reset (as indicated by heartbeat timestamps more than several minutes out of date), the software can be restarted. The user may do this by clicking the red [X] icon in the upper right corner of the software dialog to close the software and then double-clicking the Gorman-Redlich CAP-DEC 1 (CP) software icon on the desktop to restart the software.

Under normal circumstances, periodic loss of connectivity to the primary and/or secondary alert feeds may occur due to network issues or other causes. Such connectivity issues will be noted in the on-board text log. If connectivity to the primary feed is lost but the unit still has connectivity with the secondary feed, normal operation will continue as the unit receives alerts from the secondary feed until connection with the primary feed is automatically re-established. If the connection to both feeds is lost, the unit will attempt to re-establish the connections every few seconds. If a prolonged connectivity issue is experienced, please check your network settings.

## Logging

In addition to the email and print summary logging capabilities described above in the setup section, the CAP-DEC 1 (CP) maintains comprehensive local logs of its alert message activity. Logs are stored on the unit's main storage device in the *CAPCP* 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:\CAPCP* to access these files.

### Summary Log

The main *CAPCP* directory maintains a log file for each month which contains details about each message received. These details include the CAP-DEC 1 (CP) unit ID (useful if you are maintaining logs for multiple units), the unique alert identifier, whether the alert is within the unit's listening area, 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.

This log file also contains message about errors in processing received XML data, feed connectivity issues, and more.

### Original Message Files

Within the main *CAPCP* directory is a sub-directory named *log*. The *log* directory holds all of the original XML formatted CAP messages that the unit has received. If the message includes an attached audio file, it is also stored in this directory. Each alert-processed 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:\CAPCP\ directory on the unit's local solid-state 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 – not included).

To backup log files, select the monthly text log file(s) 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, simply select the monthly log file(s) you wish to delete and press [delete] to move them to the recycle bin or [shift]+[delete] to permanently delete them. Next, navigate to the C:\CAPCP\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.



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