

PUBLIC ALERT: Delivers Emergency All-Hazard Warnings, Everywhere, All the Time





Public Alert

In November 2002, the National Oceanic and Atmospheric Administration (NOAA) and National Weather Service (NWS) contacted the Consumer Electronics Association (CEA) to determine if CEA had any interest in joining with NWS in developing a national standard for NOAA Weather Radio (NWR) receivers. In February 2003, the CEA and NWS convened a discovery group of interested parties to investigate the need for a new standard for NWR receivers. By the end of February 2003, CEA's R3 committee had approved the development of a voluntary industry standard defining minimum performance criteria for consumer electronics products designed to receive Specific Area Message Encoding (SAME) alert signals broadcast by the NWR network and Environment Canada's Meteorological Service of Canada Weatheradio network.

In December 2003, the CEA Standard, *Receiver Performance Specification for Public Alert Receivers*, (CEA-2009), was approved by the Audio Systems Committee. A CEA Special Interest Group – an alliance of interested manufacturers and government agencies – created the corresponding Public Alert™ Certification and Logo Program and identified April 5, 2004 as the official launch date for the initiative. Members of the alliance include manufacturers and marketers of Public Alert devices, NOAA, NWS, Environment Canada and the CEA.

The purpose of the Public Alert program is to draw attention to new and existing devices and establish standards to improve public confidence in those devices. The CEA Public Alert Certification logo will appear on products at retail stores beginning in April 2004. The certification and technical standards for industry-defined Public Alert devices have been approved by key federal agencies in the U.S. and Canada.

PUBLIC ALERT DEFINITION

CEA defines Public Alert as a consumer electronics product providing direct access to government emergency information 24-hours-a-day, with the ability to automatically prompt users with various types of audio and visual cues. The products are sophisticated enough to recognize specific alerts for specific geographic regions, while monitoring emergency conditions at the state and



- 2 national levels. All CEA-2009 certified Public Alert devices meet the CEA standard for compatibility and certification, and receive free public broadcasts from NOAA Weather Radio network and Environment Canada's Meteorological Service of Canada Weatheradio network.

PUBLIC ALERT FEATURES & BENEFITS

- To awaken people, Public Alert devices can provide audible alarms 24-hours-a-day as soon as an alert is issued.
- Public Alert broadcasts are commercial-free providing on-demand, local, 24-hour weather information in addition to alerts.
- Public Alert devices can be tailored to respond to alerts for any of the thousands of specific areas in the U.S. and Canada.
- Public Alert devices can provide a variety of alert options, including lights, text messages, voice information, sirens and/or means to activate peripheral alerting mechanisms. The variety of alarms available is particularly important for individuals with disabilities.
- Tests of the government transmission networks can be received by Public Alert devices without the annoyance or the public perception of "false" alarms.
- Public Alert devices are triggered by warnings received directly from government sources. Emergency Alert Systems (EAS) used by AM, FM and television broadcasters can experience delays in transmission.
- Public Alert certified devices are capable of responding to the most recent event codes proposed by the FCC in February 2002, all the codes established by the National Weather Service, and all codes being implemented by Environment Canada in June 2004.
- Public Alert certified devices must meet minimum requirements for reception sensitivity ensuring a consistently high level of performance and the delivery of quality products to consumers.

Public Alert Advantages

The American and Canadian public receive government alerts in a variety of ways. In many areas, local authorities issue alerts by activating outdoor sirens that are designed to warn people in the immediate vicinity of the alert.

Citizens that are inside buildings or not close to a siren can receive alerts either directly from a Public Alert device or indirectly from commercial broadcast media, which in the U.S. relies primarily on EAS.

EAS has evolved from two earlier warning systems known as the Control of Electronic Radiation (CONELRAD) and the Emergency Broadcast System (EBS) over the last 50 years. Although it is mandated for all radio, television and cable stations by the Federal Communications Commission (FCC) and operated under the auspices of a state level EAS organization, it is completely controlled by local and network broadcasters. With the single exception of mandatory activation for national security warnings, activation for other alerts is voluntary and controlled by local broadcast station management.

A citizen relying on commercial broadcast media for alerts must be tuned into a radio or television station that has chosen to broadcast the particular alert at the precise moment it is transmitted. In addition, the citizen must be awake and aware at the time of transmission.

Public Alert devices, on the other hand, receive alert messages directly on dedicated radio frequencies from the government sources (both in Canada and the U.S.) responsible for issuing alerts of impending life threatening events. Government-owned networks are dedicated to delivering alerts without commercials. These network broadcasts can be received on special consumer radios, televisions, and other electronic devices capable of automatically triggering alarms 24-hours-a-day. The network in the U.S. is called NWR, and in Canada is called the Weatheradio network. Public Alert devices certified by CEA are among those receiving these direct government network transmissions.

The primary advantage of owning a Public Alert device is the peace of mind that comes from knowing that all alert messages will auto-



matically activate the device and prompt some kind of immediate life-saving alert. The devices can even provide alerts when a household is asleep. In the case of devices integrated into other electronics, Public Alert-equipped devices provide visual and/or audible alarms that allow the user to also play video games, watch a DVD disc or VHS tape, listen to the radio or watch television.

Public Alert devices come in a wide variety of models, with many options and functions, including adjustable sirens, visual readouts, silent visual modes, chimes, and voice information. Public Alert devices are based on digital data decoding technologies, which allows alerts to be triggered through alert-capable bedside radios, home security systems, televisions, and phones. The list of current and potential Public Alert integrated products continues to grow.

The devices provide alerts in all 50 states and all U.S. territories. Some models are customized for coverage in Canada, or operate in both countries.

Colored warning indicators show whether the alert is an advisory message or statement, a watch, or an immediate warning. Public Alert devices also allow users to instantly monitor local weather forecasts 24-hours-a-day from the commercial-free NWS or Environment Canada transmissions.

Unlike EAS, these transmitted alerts provide digital data directly to the consumer reception device instantly triggering Public Alert devices that are listening for their specific local alerts. Public Alert devices often receive alerts minutes before TV and radio broadcasters choose to relay an alert to their broadcast area.

Combined with almost 900 transmitters throughout the 50 states and U.S. territories, and over 180 in Canada, an estimated 95 percent of the public is now covered by the government operated public network. Public Alert devices receive alerts directly from the government transmitter, the same official sources that often provide the alert information to the media.

Exhibit 1 (see page 3) compares the level of protection offered by each method:





EXHIBIT 1 PUBLIC ALERT VS. EAS

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	Relying on broadcast media which depends on the EAS system	Relying on a Public Alert device
Is the consumer always able to monitor alerts?	NO. Only when listening to stations participating in alerts at the time. Few cable or satellite stations provide local emergency coverage.	YES. Monitors emergency channels directly and independently. Commercial free coverage is dedicated to alert information as a first priority.
Capable of triggering an alert even when in a silent mode (i.e. "off" and in stand-by).	NO.	YES. Capable of "turning on" to issue an alert.
Managed and operated by government personnel.	NO. Volunteer and media personnel re-issue alerts.	YES. All information and alerts issued directly by government personnel.
Operates 24-hours-a-day.	NO. Only during operational times of specific participating station or media outlet.	YES. Monitors 24/7.
Mandatory broadcast interrupt.	NO.	YES.
Can be set to trigger alerts by selecting specific areas of coverage (like counties).	NO. Designed to pass on alerts for an entire coverage area of the commercial station or media.	YES. Allows alert triggering by county or counties. Even monitors multiple alerts simultaneously.
All information passed on.	NO. Stations can choose to ignore all but a single national threat warning, and either delay announcement or avoid issuing all others.	YES. 100 percent of information received, and options to tailor and customize alert choices are available on most models.
Selectable alerting method.	NO. Audio only.	YES. User can choose audio and/ or visual display. Many models allow for optional strobe light and/or vibration alerts for hearing impaired.
Allows activation at levels other than Warnings.	NO.	YES. User can program to receive choice of alerts for watches and advisory statements.
Warning signal remains visible until expiration.	NO.	YES.
Active national field management personnel.	NO.	YES.
Number of alert events capable of being decoded (including optional messages).	49	62 (as shown below, plus optional codes)
Receivers under single technical standard.	NO.	YES. Certification under CEA 2009.



EVENTS RECOGNIZED BY PUBLIC ALERT DEVICES

As of the date of this document, CEA Public Alert certified devices have the ability to recognize the following messages:

- 911 Telephone Outage Emergency
- Avalanche Warning
- Avalanche Watch
- Biological Hazard Warning
- Blizzard Warning
- Boil Water Warning
- Chemical Hazard Warning
- Child Abduction Emergency
- Civil Danger Warning
- Civil Emergency Message
- Coastal Flood Warning
- Coastal Flood Watch
- Contagious Disease Warning
- Dam Break Warning
- Dam Watch
- Dust Storm Warning
- Earthquake Warning
- Emergency Action Notification
- Emergency Action Termination
- Evacuation Watch
- Fire Warning
- Flash Flood Watch
- Flash Flood Statement
- Flash Flood Warning
- Flash Freeze Warning
- Flood Statement
- Flood Warning
- Flood Watch
- Food Contamination Warning
- Freeze Warning
- Hazardous Materials Warning
- Hurricane Statement
- Hurricane Warning
- Hurricane Watch
- High Wind Warning
- High Wind Watch
- Iceberg Warning
- Immediate Evacuation
- Industrial Fire Warning
- Land Slide Warning
- Law Enforcement Warning
- Local Area Emergency
- Nuclear Power Plant Warning
- Power Outage Advisory
- Radiological Hazard Warning
- Shelter In-Place Warning
- Special Marine Warning
- Special Weather Statement
- Severe Thunderstorm Warning
- Severe Thunderstorm Watch
- Severe Weather Statement
- Tornado Warning
- Tornado Watch
- Tropical Storm Warning
- Tropical Storm Watch
- Tsunami Warning
- Tsunami Watch
- Volcano Warning
- Wild Fire Warning
- Wild Fire Watch
- Winter Storm Warning
- Winter Storm Watch





SOURCES FOR PUBLIC ALERT

6 NWR in the U.S.

Public broadcasting of weather information, including severe weather warnings, had its inception in the 1950s when the Weather Bureau operated two stations broadcasting aviation weather. By 1976, there were 112. Between 1976 and 1979, federal funding was made available and 220 additional stations were added to establish what is currently known as NWR.

Although federal funding was terminated in the late 1970s, the network grew to about 400 stations by 1994 as a result of station donations by private interest groups. By October 2000, over 160 new stations had been added to the network through NWS public / private partnerships. Today, there are 884 stations broadcasting on the NWR network covering about 97 percent of the population.

During this period, NWS implemented SAME on the NWR network to allow automatic triggering of NWR receiver alarms in homes and the EAS on all radio and TV broadcasts for specifically defined, user selected, preprogrammed locales and events.

The NWS estimates that nearly 100 additional NWR stations are required to meet the goal of at least 95 percent population coverage in every state. There are currently 14 states with less than 95 percent coverage.

The NOAA/NWS/NWR infrastructure for collecting and disseminating alerts is the only currently available telecommunications infrastructure capable of effectively supporting a national warning network. In 2003, Federal Emergency Management Agency (FEMA) designated NWR as an "All-Hazards" network for alerts.





Public Alerting in Canada

In 1976, Environment Canada Weatheradio's service was launched and expanded to 30 locations in roughly 10 years. In the early-1990s, increased government investment permitted major expansion of the network to the present size of 185 sites.

In 1992, the network added the functionality of transmitting a data burst that was embedded in the audio signal. This service was called Weathercopy and focused on clients who required hard copies of weather warnings or desired hard copy custom weather products. In addition, the Weathercopy receivers were addressable and could be targeted to receive special weather forecast products and graphics. Dissemination technology evolved and similar, faster, delivery solutions were available to key clients, thus leading to the Weathercopy service being decommissioned in 2003.

Currently, there are six major weather offices in Canada that share the responsibility to ensure that all weather forecasts and warnings are broadcasting at each Weatheradio location. The Weatheradio network has 185 transmitter sites and approximately 92 percent of Canadians can access the Weatheradio signal.

In January 2004, the Minister of Environment Canada announced the Weatheradio network would add SAME functionality. The entire network conversion is expected to take one year but selected sites will begin broadcasting the codes by fall 2004. Environment Canada is partnering with Industry Canada to develop the protocol for the delivery of non-weather alert messaging, which will be established by 2005.

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About CEA:

The Consumer Electronics Association (CEA) is the preeminent trade association promoting growth in the consumer technology industry through technology policy, events, research, promotion and the fostering of business and strategic relationships. CEA represents more than 1,500 corporate members involved in the design, development, manufacturing, distribution and integration of audio, video, mobile electronics, wireless and landline communications, information technology, home networking, multimedia and accessory products, as well as related services that are sold through consumer channels. Combined, CEA's members account for more than \$90 billion in annual sales. CEA's resources are available online at www.CE.org, the definitive source for information about the consumer electronics industry.

CEA also sponsors and manages the International CES – Defining Tomorrow's Technology. All profits from CES are reinvested into industry services, including technical training and education, industry promotion, engineering standards development, market research and legislative advocacy.

About CEA's Public Alert Special Interest Group:

Formed in 2003, the CEA Public Alert Special Interest Group is working to promote the life-saving benefits of Public Alert-equipped devices. CEA thanks the members of the Public Alert Special Interest Group for their assistance in producing this white paper.





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