

Federal Communications Commission

§ 11.31

and shall renew this identifying information on a yearly basis or as required by any revision of the EAS Participant's State EAS Plan filed pursuant to this section.

(b) The Local Area plan contains procedures for local officials or the NWS to transmit emergency information to the public during a local emergency using the EAS. Local plans may be a part of the State plan. A Local Area is a geographical area of contiguous communities or counties that may include more than one state.

(c) The FCC Mapbook is based on the consolidation of the data table required in each State EAS plan with the identifying data contained in the ETRS. The Mapbook organizes all EAS Participants according to their State, EAS Local Area, and EAS designation.

[72 FR 62134, Nov. 2, 2007, as amended at 77 FR 16700, Mar. 22, 2012; 80 FR 37174, June 30, 2015]

EFFECTIVE DATE NOTE: At 80 FR 37174, June 30, 2015, § 11.21(a) was revised. This paragraph contains information collection and record-keeping requirements and will not become effective until approval has been given by the Office of Management and Budget.

Subpart B—Equipment Requirements

§ 11.31 EAS protocol.

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

(1) The Preamble and EAS Codes must use Audio Frequency Shift Keying at a rate of 520.83 bits per second to transmit the codes. Mark frequency is 2083.3 Hz and space frequency is 1562.5 Hz. Mark and space time must be 1.92 milliseconds. Characters are ASCII seven bit characters as defined in ANSI X3.4-1977 ending with an eighth null bit (either 0 or 1) to constitute a full eight-bit byte.

(2) The Attention Signal must be made up of the fundamental frequencies of 853 and 960 Hz. The two tones must be transmitted simultaneously. The Attention Signal must be transmitted after the EAS header codes.

(3) The message may be audio, video or text.

(b) The ASCII dash and plus symbols are required and may not be used for any other purpose. Unused characters must be ASCII space characters. FM or TV call signs must use a slash ASCII character number 47 (/) in lieu of a dash.

(c) The EAS protocol, including any codes, must not be amended, extended or abridged without FCC authorization. The EAS protocol and message format are specified in the following representation.

Examples are provided in FCC Public Notices.

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

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

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

(transmission of 8 to 25 seconds of Attention Signal)

(transmission of audio, video or text messages)

(at least a one second pause)

[PREAMBLE]NNNN (one second pause)

[PREAMBLE]NNNN (one second pause)

[PREAMBLE]NNNN (at least one second pause)

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

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

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

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

§ 11.31

PSSCCC—This is the Location code and indicates the geographic area affected by the EAS alert. There may be 31 Location codes in an EAS alert. The Location code uses the codes described in the American National Standards Institute (ANSI) standard, ANSI INCITS 31-2009 (“Information technology—Codes for the Identification of Counties and Equivalent Areas of the United States, Puerto Rico, and the Insular Areas”). Each state is assigned an SS number as specified in paragraph (f) of this section. Each county and some cities are assigned a CCC number. A CCC number of 000 refers to an entire State or Territory. P defines county subdivisions as follows: 0 = all or an unspecified portion of a county, 1 = Northwest, 2 = North, 3 = Northeast, 4 = West, 5 = Central, 6 = East, 7 = Southwest, 8 = South, 9 = Southeast. Other numbers may be designated later for special applications. The use of county subdivisions will probably be rare and generally for oddly shaped or unusually large counties. Any subdivisions must be defined and agreed to by the local officials prior to use.

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

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

LLLLLLLL—This is the identification of the EAS Participant, NWS office, etc., transmitting or retransmitting the message. These codes will be automatically affixed to all outgoing messages by the EAS encoder.

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

(d) The only originator codes are:

| Originator | ORG code |
|----------------------------------|----------|
| EAS Participant | EAS |
| Civil authorities | CIV |
| National Weather Service | WXR |
| Primary Entry Point System | PEP |

47 CFR Ch. I (10–1–15 Edition)

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

| Nature of activation | Event codes |
|---|--------------------|
| National Codes (Required): | |
| Emergency Action Notification (National only) | EAN. |
| National Information Center | NIC |
| National Periodic Test | NPT. |
| Required Monthly Test | RMT. |
| Required Weekly Test | RWT. |
| State and Local Codes (Optional): | |
| Administrative Message | ADR. |
| Avalanche Warning | AVW ¹ . |
| Avalanche Watch | AVA ¹ . |
| Blizzard Warning | BZW. |
| Child Abduction Emergency | CAE ¹ . |
| Civil Danger Warning | CDW ¹ . |
| Civil Emergency Message | CEM. |
| Coastal Flood Warning | CFW ¹ . |
| Coastal Flood Watch | CFA ¹ . |
| Dust Storm Warning | DSW ¹ . |
| Earthquake Warning | EQW ¹ . |
| Evacuation Immediate | EVI. |
| Fire Warning | FRW ¹ . |
| Flash Flood Warning | FFW. |
| Flash Flood Watch | FFA. |
| Flash Flood Statement | FFS. |
| Flood Warning | FLW. |
| Flood Watch | FLA. |
| Flood Statement | FLS. |
| Hazardous Materials Warning | HMW ¹ . |
| High Wind Warning | HWV. |
| High Wind Watch | HWA. |
| Hurricane Warning | HUW. |
| Hurricane Watch | HUA. |
| Hurricane Statement | HLS. |
| Law Enforcement Warning | LEW ¹ . |
| Local Area Emergency | LAE ¹ . |
| Network Message Notification | NMN ¹ . |
| 911 Telephone Outage Emergency | TOE ¹ . |
| Nuclear Power Plant Warning | NUW ¹ . |
| Practice/Demo Warning | DMO. |
| Radiological Hazard Warning | RHW ¹ . |
| Severe Thunderstorm Warning | SVR. |
| Severe Thunderstorm Watch | SVA. |
| Severe Weather Statement | SVS. |
| Shelter in Place Warning | SPW ¹ . |
| Special Marine Warning | SMW ¹ . |
| Special Weather Statement | SPS. |
| Tornado Warning | TOR. |
| Tornado Watch | TOA. |
| Tropical Storm Warning | TRW ¹ . |
| Tropical Storm Watch | TRA ¹ . |
| Tsunami Warning | TSW. |
| Tsunami Watch | TSA. |
| Volcano Warning | VOW ¹ . |
| Winter Storm Warning | WSW. |
| Winter Storm Watch | WSA. |

¹ Effective May 16, 2002, analog radio and television broadcast stations, analog cable systems and wireless cable systems may upgrade their existing EAS equipment to add these event codes on a voluntary basis until the equipment is replaced. All models of EAS equipment manufactured after August 1, 2003 must be capable of receiving and transmitting these event codes. EAS Participants that install or replace their EAS equipment after February 1, 2004 must install equipment that is capable of receiving and transmitting these event codes.

(f) The All U.S., State, Territory and Offshore (Marine Area) ANSI number codes (SS) are as follows. County ANSI numbers (CCC) are contained in the State EAS Mapbook.

Federal Communications Commission

§ 11.31

| | ANSI No. |
|--|----------|
| All U.S. | 00 |
| State: | |
| AL | 01 |
| AK | 02 |
| AZ | 04 |
| AR | 05 |
| CA | 06 |
| CO | 08 |
| CT | 09 |
| DE | 10 |
| DC | 11 |
| FL | 12 |
| GA | 13 |
| HI | 15 |
| ID | 16 |
| IL | 17 |
| IN | 18 |
| IA | 19 |
| KS | 20 |
| KY | 21 |
| LA | 22 |
| ME | 23 |
| MD | 24 |
| MA | 25 |
| MI | 26 |
| MN | 27 |
| MS | 28 |
| MO | 29 |
| MT | 30 |
| NE | 31 |
| NV | 32 |
| NH | 33 |
| NJ | 34 |
| NM | 35 |
| NY | 36 |
| NC | 37 |
| ND | 38 |
| OH | 39 |
| OK | 40 |
| OR | 41 |
| PA | 42 |
| RI | 44 |
| SC | 45 |
| SD | 46 |
| TN | 47 |
| TX | 48 |
| UT | 49 |
| VT | 50 |
| VA | 51 |
| WA | 53 |
| WV | 54 |
| WI | 55 |
| WY | 56 |
| Terr.: | |
| AS | 60 |
| FM | 64 |
| GU | 66 |
| MH | 68 |
| MH | 68 |
| PR | 72 |
| PW | 70 |
| UM | 74 |
| VI | 78 |
| Offshore (Marine Areas): ¹ | |
| Eastern North Pacific Ocean, and along U.S. West Coast from Canadian border to Mexican border | 57 |
| North Pacific Ocean near Alaska, and along Alaska coastline, including the Bering Sea and the Gulf of Alaska | 58 |
| Central Pacific Ocean, including Hawaiian waters | 59 |
| South Central Pacific Ocean, including American Samoa waters | 61 |
| Western Pacific Ocean, including Mariana Island waters | 65 |
| Western North Atlantic Ocean, and along U.S. East Coast, from Canadian border south to Currituck Beach Light, N.C. | 73 |
| Western North Atlantic Ocean, and along U.S. East Coast, south of Currituck Beach Light, N.C., following the coastline into Gulf of Mexico to Bonita Beach, FL., including the Caribbean | 75 |

| | ANSI No. |
|---|----------|
| Gulf of Mexico, and along the U.S. Gulf Coast from the Mexican border to Bonita Beach, FL | 77 |
| Lake Superior | 91 |
| Lake Michigan | 92 |
| Lake Huron | 93 |
| Lake St. Clair | 94 |
| Lake Erie | 96 |
| Lake Ontario | 97 |
| St. Lawrence River above St. Regis | 98 |

¹ Effective May 16, 2002, analog radio and television broadcast stations, analog cable systems and wireless cable systems may upgrade their existing EAS equipment to add these marine area location codes on a voluntary basis until the equipment is replaced. All models of EAS equipment manufactured after August 1, 2003, must be capable of receiving and transmitting these marine area location codes. EAS Participants that install or replace their EAS equipment after February 1, 2004, must install equipment that is capable of receiving and transmitting these location codes.

[59 FR 67092, Dec. 28, 1994, as amended at 60 FR 55999, Nov. 6, 1995; 61 FR 54952, Oct. 23, 1996; 63 FR 29663, June 1, 1998; 67 FR 18508, Apr. 16, 2002; 67 FR 77174, Dec. 17, 2002; 69 FR 72031, Dec. 10, 2004; 70 FR 71033, Nov. 25, 2005; 77 FR 16701, Mar. 22, 2012; 80 FR 37174, June 30, 2015]

§ 11.32 EAS Encoder.

(a) EAS Encoders must at a minimum be capable of encoding the EAS protocol described in § 11.31 and providing the EAS code transmission requirements described in § 11.51. EAS encoders must additionally provide the following minimum specifications:

(1) *Encoder programming.* Access to encoder programming shall be protected by a lock or other security measures and be configured so that authorized personnel can readily select and program the EAS Encoder with Originator, Event and Location codes for either manual or automatic operation.

(2) *Inputs.* The encoder shall have at least one input port used for audio messages and at least one input port used for data messages.

(3) *Outputs.* The encoder shall have at least one audio output port and at least one data output port.

(4) *Calibration.* EAS Encoders must provide a means to comply with the modulation levels required in § 11.51(f).

(5) *Day-Hour-Minute and Identification Stamps.* The encoder shall affix the JJJHHMM and LLLLLLLL codes automatically to all initial messages.

(6) *Program Data Retention.* Program data and codes shall be retained even with the power removed.

(7) *Indicator.* An aural or visible means that it activated when the Preamble is sent and deactivated at the End of Message code.

(8) *Spurious Response.* All frequency components outside 200 to 4000 Hz shall be attenuated by 40 dB or more with respect to the output levels of the mark or space frequencies.

(9) *Attention Signal generator.* The encoder must provide an attention signal that complies with the following:

(i) *Tone Frequencies.* The audio tones shall have fundamental frequencies of 853 and 960 Hz and not vary over ± 0.5 Hz.

(ii) *Harmonic Distortion.* The total harmonic distortion of each of the audio tones may not exceed 5% at the encoder output terminals.

(iii) *Minimum Level of Output.* The encoder shall have an output level capability of at least + 8 dBm into a 600 Ohm load impedance at each audio tone. A means shall be provided to permit individual activation of the two tones for calibration of associated systems.

(iv) *Time Period for Transmission of Tones.* The encoder shall have timing circuitry that automatically generates the two tones simultaneously for a time period of 8 seconds.

(v) *Inadvertent activation.* The switch used for initiating the automatic generation of the simultaneous tones shall be protected to prevent accidental operation.

(vi) *Indicator Display.* The encoder shall be provided with a visual and/or aural indicator which clearly shows that the Attention Signal is activated.

(b) *Operating Temperature and Humidity.* Encoders shall have the ability to operate with the above specifications within an ambient temperature range of 0 to + 50 degrees C and a range of relative humidity of up to 95%.