

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-JJHHMM-LLLLLLLLL-(one second pause)

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

[PREAMBLE]ZCZC-ORG-EEE-PSSCCC
+ TTTT-JJHHMM-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

47 CFR Ch. I (10–1–15 Edition)

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

(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 JJJHMM 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%.

(c) *Primary Supply Voltage Variation.* Encoders shall be capable of complying with the requirements of this section during a variation in primary supply voltage of 85 percent to 115 percent of its rated value.

(d) *Testing Encoder Units.* Encoders not covered by §11.34(e) of this part shall be tested in a 10 V/m minimum RF field at an AM broadcast frequency and a 0.5 V/m minimum RF field at an FM or TV broadcast frequency to simulate actual working conditions.

[59 FR 67092, Dec. 28, 1994, as amended at 77 FR 16703, Mar. 22, 2012]

§ 11.33 EAS Decoder.

(a) An EAS Decoder must at a minimum be capable of providing the EAS monitoring functions described in §11.52, decoding EAS messages formatted in accordance with the EAS Protocol described in §11.31, and converting Common Alerting Protocol (CAP)-formatted EAS messages into EAS alert messages that comply with the EAS Protocol, in accordance with §11.56(a)(2), with the exception that the CAP-related monitoring and conversion requirements set forth in §§11.52(d)(2) and 11.56(a)(2) can be satisfied via an Intermediary Device, as specified in §11.56(b), provided that all other requirements set forth in this part are met. An EAS Decoder also must be capable of the following minimum specifications:

(1) *Inputs.* Decoders must have the capability to receive at least two audio inputs from EAS monitoring assignments, and at least one data input. The data input(s) may be used to monitor other communications modes such as Radio Broadcast Data System (RBDS), NWR, satellite, public switched telephone network, or any other source that uses the EAS protocol.

(2) *Valid codes.* There must be a means to determine if valid EAS header codes are received and to determine if preselected header codes are received.

(3) *Storage.* Decoders must provide the means to:

(i) Record and store, either internally or externally, at least two minutes of audio or text messages. A decoder manufactured without an internal means to record and store audio or text must be

equipped with a means (such as an audio or digital jack connection) to couple to an external recording and storing device.

(ii) Store at least ten preselected event and originator header codes, in addition to the seven mandatory event/originator codes for tests and national activations, and store any preselected location codes for comparison with incoming header codes. A non-preselected header code that is manually transmitted must be stored for comparison with later incoming header codes. The header codes of the last ten received valid messages which still have valid time periods must be stored for comparison with the incoming valid header codes for later messages. These last received header codes will be deleted from storage as their valid time periods expire.

(4) *Display and logging.* For received alert messages formatted in both the EAS Protocol and Common Alerting Protocol, a visual message shall be developed from any valid header codes for tests and national activations and any preselected header codes received. The message shall at a minimum include the Originator, Event, Location, the valid time period of the message and the local time the message was transmitted. The message shall be in the primary language of the EAS Participant and be fully displayed on the decoder and readable in normal light and darkness. The visual message developed from received alert messages formatted in the Common Alerting Protocol must conform to the requirements in §§11.51(d), (g)(3), (h)(3), and (j)(2) of this part. All existing and new models of EAS decoders manufactured after August 1, 2003 must provide a means to permit the selective display and logging of EAS messages containing header codes for state and local EAS events. Effective May 16, 2002, analog radio and television broadcast stations, analog cable systems and wireless cable systems may upgrade their decoders on an optional basis to include a selective display and logging capability for EAS messages containing header codes for state and local events. EAS Participants that install or replace their decoders after February 1, 2004 must install decoders that

§ 11.34

provide a means to permit the selective display and logging of EAS messages containing header codes for state and local EAS events.

(5) *Indicators.* EAS decoders must have a distinct and separate aural or visible means to indicate when any of the following conditions occurs:

(i) Any valid EAS header codes are received as specified in § 11.33(a)(10).

(ii) Preprogrammed header codes, such as those selected in accordance with § 11.52(d)(2) are received.

(iii) A signal is present at each audio input that is specified in § 11.33(a)(1).

(6) *Program Data Retention.* The program data must be retained even with power removed.

(7) *Outputs.* Decoders shall have at least one data port where received valid EAS header codes and received preselected header codes are available, at least one audio port that is capable of monitoring each decoder audio input, and an internal speaker to enable personnel to hear audio from each input.

(8) *Decoder Programming.* Access to decoder 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 Decoder with preselected Originator, Event and Location codes for either manual or automatic operation.

(9) *Reset.* There shall be a method to automatically or manually reset the decoder to the normal monitoring condition. Operators shall be able to select a time interval, not less than two minutes, in which the decoder would automatically reset if it received an EAS header code but not an end-of-message (EOM) code. Messages received with the EAN Event codes shall disable the reset function so that lengthy audio messages can be handled. The last message received with valid header codes shall be displayed as required by paragraph (a)(4) of this section before the decoder is reset.

(10) *Message Validity.* An EAS Decoder must provide error detection and validation of the header codes of each message to ascertain if the message is valid. Header code comparisons may be accomplished through the use of a bit-by-bit compare or any other error de-

47 CFR Ch. I (10–1–15 Edition)

tection and validation protocol. A header code must only be considered valid when two of the three headers match exactly. Duplicate messages must not be relayed automatically.

(11) A header code with the EAN Event code specified in § 11.31(c) that is received through any of the audio or data inputs must override all other messages.

(b) Decoders shall be capable of operation within the tolerances specified in this section as well as those in § 11.32 (b), (c) and (d).

[59 FR 67092, Dec. 28, 1994, as amended at 60 FR 55999, Nov. 6, 1995; 67 FR 18510, Apr. 16, 2002; 70 FR 71033, Nov. 25, 2005; 77 FR 16703, Mar. 22, 2012]

§ 11.34 Acceptability of the equipment.

(a) An EAS Encoder used for generating the EAS codes and the Attention Signal must be Certified in accordance with the procedures in part 2, subpart J, of this chapter. The data and information submitted must show the capability of the equipment to meet the requirements of this part as well as the requirements contained in part 15 of this chapter for digital devices.

(b) Decoders used for the detection of the EAS codes and receiving the Attention Signal must be Certified in accordance with the procedures in part 2, subpart J, of this chapter. The data and information submitted must show the capability of the equipment to meet the requirements of this part as well as the requirements contained in part 15 of this chapter for digital devices.

(c) The functions of the EAS decoder, Attention Signal generator and receiver, and the EAS encoder specified in §§ 11.31, 11.32 and 11.33 may be combined and Certified as a single unit provided that the unit complies with all specifications in this rule section.

(d) Manufacturers must include instructions and information on how to install, operate and program an EAS Encoder, EAS Decoder, or combined unit and a list of all State and county ANSI numbers with each unit sold or marketed in the U.S.

(e) Waiver requests of the Certification requirements for EAS Encoders or EAS Decoders which are constructed for use by an EAS Participant, but are not offered for sale will be considered

on an individual basis in accordance with part 1, subpart G, of this chapter.

(f) Modifications to existing authorized EAS decoders, encoders or combined units necessary to implement the new EAS codes specified in § 11.31 and to implement the selective displaying and logging feature specified in § 11.33(a)(4) will be considered Class I permissive changes that do not require a new application for and grant of equipment certification under part 2, subpart J of this chapter.

(g) All existing and new models of EAS encoders, decoders and combined units manufactured after August 1, 2003 must be capable of generating and detecting the new EAS codes specified in § 11.31 in order to be certified under part 2, subpart J of this chapter. All existing and new models of EAS decoders and combined units manufactured after August 1, 2003 must have the selective displaying and logging capability specified in § 11.33(a)(4) in order to be certified under part 2, subpart J of this chapter.

[59 FR 67092, Dec. 28, 1994, as amended at 60 FR 56000, Nov. 6, 1995; 67 FR 18510, Apr. 16, 2002; 70 FR 71034, Nov. 25, 2005; 77 FR 16703, Mar. 22, 2012]

§ 11.35 Equipment operational readiness.

(a) EAS Participants are responsible for ensuring that EAS Encoders, EAS Decoders, Attention Signal generating and receiving equipment, and Intermediate Devices used as part of the EAS to decode and/or encode messages formatted in the EAS Protocol and/or the Common Alerting Protocol are installed so that the monitoring and transmitting functions are available during the times the stations and systems are in operation. Additionally, EAS Participants must determine the cause of any failure to receive the required tests or activations specified in § 11.61(a)(1) and (2). Appropriate entries indicating reasons why any tests were not received must be made in the broadcast station log as specified in §§ 73.1820 and 73.1840 of this chapter for all broadcast streams and cable system records as specified in §§ 76.1700, 76.1708, and 76.1711 of this chapter. All other EAS Participants must also keep records indicating reasons why any

tests were not received and these records must be retained for two years, maintained at the EAS Participant's headquarters, and made available for public inspection upon reasonable request.

(b) If an EAS Encoder, EAS Decoder or Intermediary Device used as part of the EAS to decode and/or encode messages formatted in the EAS Protocol and/or the Common Alerting Protocol becomes defective, the EAS Participant may operate without the defective equipment pending its repair or replacement for 60 days without further FCC authority. Entries shall be made in the broadcast station log, cable system records, and records of other EAS Participants, as specified in paragraph (a) of this section, showing the date and time the equipment was removed and restored to service. For personnel training purposes, the required monthly test script must still be transmitted even though the equipment for generating the EAS message codes, Attention Signal and EOM code is not functioning.

(c) If repair or replacement of defective equipment is not completed within 60 days, an informal request shall be submitted to the Regional Director of the FCC field office serving the area in which the EAS Participant is located, or in the case of DBS and SDARS providers to the Regional Director of the FCC field office serving the area where their headquarters is located, for additional time to repair the defective equipment. This request must explain what steps have been taken to repair or replace the defective equipment, the alternative procedures being used while the defective equipment is out of service, and when the defective equipment will be repaired or replaced.

[70 FR 71034, Nov. 25, 2005, as amended at 77 FR 16704, Mar. 22, 2012; 80 FR 53750, Sept. 8, 2015]

Subpart C—Organization

§ 11.41 Participation in EAS.

All EAS Participants specified in § 11.11 are categorized as Participating National (PN) sources, and must have