TFT MODEL EAS911+

Emergency Alert System

Encoder/Decoder

FCC Part 11

Compliance Tests

TFT, Inc.
San Jose, California
March 5, 2013
Edition 4

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ATTACHMENTS:

     USER'S MANUAL
     PRODUCT LITERATURE
     EAS ENCODER/DECODER PART 15 COMPLIANCE TESTS
     LETTER OF AUTHORIZATION

1.   GENERAL INFORMATION

1.1   Product Description

The TFT Model EAS911+ encodes and decodes messages in accordance with the newly established Emergency Alert System (EAS) as described in FCC Report and Order and Further Notice of Proposed Rule Making FCC 94-288 that was adopted on November 10, 1994. The TFT Model EAS911+ is self contained in a 19" wide *by 5"* high rack mount enclosure and is intended to allow radio, television, and cable broadcasters the ability to send the receive EAS message as required by the FCC.

2.   TEST FACILITIES

2.1   List of Specific Test Equipment

All equipment maintained by regularly scheduled calibration to meet manufacturer's equipment specifications using manufacturer approved calibration lab practices.

TEST EQUIPMENT	MANUFACTURER	MODEL NUMBER	FREQ. RANGE
Spectrum Analyzer	Signal Hound	USB-SA44	10 Hz – 1 GHz
Oscilloscope	Hewlett Packard	54602B	0 Hz - 150 MHz
Printer	Brother	HL-2040	
Multimeter	Fluke	8050A	
Lap top Computer	Dell	Inspiron 600M	
Desk top PC	Dell	Dimension 8300	
EAS Encoder/Decoder	TFT	EAS911	
Temperature and Humidity Chamber	Tenney	40	
AM Field Str. Meter	Potomac Instruments	FIM-21 AM FIELD SET	
FM Field Str. Meter	Potomac Instruments	FIM-71 FM FIELD SET	
Camera	Mino1ta	AF-DL	
Variac	Technipower	W5MT3A	50 Hz - 60 Hz
Storage Oscilloscope	Tektronix	TDS2024	

2.2   Lab Test Facility
The laboratory test site collecting data for all tests except field susceptibility is located at:

TFT, Inc.   TEL: (408) 943-9323
1953 Concourse Drive   FAX: (408) 432-9218
San Jose CA 95131

All testing performed with 120 VAC, 60Hz wall outlet unfiltered power facilities with ground traceable to central building earth ground.

2.3 Field Test Facilities

AM field testing performed at antenna site of: FM field testing performed at antenna site of:
KFAX/AM   KXSC/FM
KTRB/AM   San Jose, CA
Hayward, CA

2.4 Temperature and Humidity Test Facility

Quanta Labs
Address: 3190 De La Cruz Blvd.,
Santa Clara, CA 95054

3. EAS ENCODER COMPLIANCE TESTS

3.1 EAS Encoder Protocol Verification

3.1.1 Test Objective

The objective of this test is to verify encoding the EAS protocol as described in §11.31 as required in §11.32(a):

> *§11.32(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.*

3.1.2 Test Block Diagrams

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┌─────────────────┐         ┌─────────────────┐
│ TFT Model       │         │ TFT Model       │
│ EAS 911+        │─────────│ EAS911+         │
│ Encoder         │         │ Decoder         │
└─────────────────┘         └─────────────────┘
```

3.1.3 Test Methodology

This test consists of encoding the 10 examples FCC EAS messages by following the encoder procedure in the installation and operation manual. Verification employs the TFT Model EAS 911+ for confirmation.

Print outs of both the encoder and decoder are attached to the data sheets.

Note: **This session show the sample of EAS protocol meeting 11.31(c) requirement are met.**
11.31(a)&(b) define what can and what cannot be in an EAS protocol message.
If 11.31(c), which shows the actual construction of a complete EAS protocol message, is
proved, then 11.31(a)&(b) must be met.

Note: The test and test example #1 from page 7 thru page 10 were deleted.
Therefore the test example number will be from Test example #2 to #11.

The page 7 to page 11 are intentionally omitted

2. Verification of decode of EAN (Emergency Action Notification) event from PEP originator.

STIMULUS	EXPECTED RESPONSE	OBSERVED RESPONSE
Channel 1: [PREAMBLE] ZCZC-PEP-EAN-000000 +0100-2412214- WAAA/FM - (repeated two more times with 1 second pauses) 8 second two tone Channel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Open squelch to pass channel 1 after 2nd packet received and verified. Touch screen display: THE EMERGENCY ACTION NOTIFICATION NETWORK HAS ISSUED A NATIONAL EMERGENCY ACTION NOTIFICATION FOR THE FOLLOWING COUNTIES/AREAS: UNITED STATES AT 6:14PM ON AUG 28, 2012 EFFECTIVE UNTIL 7:14 PM. MESSAGE RECEIVED AT 18:15 ON AUG 28, 2012 FROM WAAA/ FM. ON CHANNEL 1. EAS PROTOCOL TEXT: ZCZC-PEP-EAN-000000+0100-2412214-WAAA/FM- MESSAGE WAITING key: Flashing. MESSAGE ALERT Relay: Activated after 2nd packet received and verified. ON-AIR Relay: Activated after 2nd packet received and verified. LEFT and RIGHT AUDIO OUTPUT: One second of silence after ON-AIR Relay activates, followed by: [PREAMBLE] ZCZC-PEP-EAN-000000+0100-2412214-KAAA/AM- (repeated two more times with 1 second pauses) 8 second two tone. Followed by patch through of CH1 audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen display: √ MESSAGE WAITING key: Flashing MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT and RIGHT PROGRAM AUDIO OUTPUT: √
Channel 1: [PREAMBLE]NNNN (repeated two more times with 1 second pauses) Channel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Patch through of CH1 audio. OFF after first packet decoded. Touch screen display: Displays message and EOM received. MESSAGE WAITING key: Remains Flashing. MESSAGE ALERT Relay: Deactivates after sending EOM. ON-AIR RELAY: Deactivates after sending EOM. LEFT and RIGHT PROGRAM AUDIO OUTPUT: Goes silent after sending EOM.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen display: √ MESSAGE WAITING key LED: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT and RIGHT PROGRAM AUDIO OUTPUT: √

Note: 1. Local time is Eastern Standard   Note 2. Local station is KAAA/AM.
Note: 3   Local is in AUTO FORWARD mode

TESTED BY: _D. C._   DATE: _8/28/12_

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CERTIFIED REPORT OF MEASUREMENT FOR TFT, INC.
FCC PART 11 TESTING
TFT MODEL EAS911+
EAS-CAP
FCC ID: BIOEAS911PLUS

COMPLIANCE TEST NUMBER: 3.1 and 4.1

Example Message 2

COMPLIANCE TEST RESULTS - SEE THE FOLLOWING __3__ PAGES.

J. C. 8/28/12

STATION WAAA_FM TRANSMIT LOG MESSAGE:

A NATIONAL EMERGENCY ACTION NOTIFICATION HAS BEEN ISSUED FOR THE FOLLOWING
COUNTIES/AREAS:
UNITED STATES
AT 6:14 PM
ON AUG 28, 2012
EFFECTIVE
UNTIL 7:14 PM.
MESSAGE FROM WAAA_FM.

MESSAGE ISSUED BY A PRIMARY ENTRY POINT AND TRANSMITTED
AT 18:14
ON AUG 28, 2012
BY WAAA_FM.

EAS PROTOCOL TEXT:
ZCZC-PEP-EAN-000000+0100-2412214-WAAA_FM -

PRINTED ON TUESDAY AUGUST 28, 2012 AT 18:15

Decoder

STATION KAAA_AM RECEIVE LOG MESSAGE:

A NATIONAL EMERGENCY ACTION NOTIFICATION HAS BEEN ISSUED FOR THE FOLLOWING
COUNTIES/AREAS:
UNITED STATES
AT 6:14 PM
ON AUG 28, 2012
EFFECTIVE
UNTIL 7:14 PM.
MESSAGE FROM WAAA_FM.

MESSAGE ISSUED BY A PRIMARY ENTRY POINT AND RECEIVED
AT 18:15
ON AUG 28, 2012
FROM WAAA_FM
ON CHANNEL 1.

EAS PROTOCOL TEXT:
ZCZC-PEP-EAN-000000+0100-2412214-WAAA_FM -
EOM RECEIVED

PRINTED ON TUESDAY AUGUST 28, 2012 AT 18:16

15

1

decoder

STATION KAAA_AM TRANSMIT LOG MESSAGE:

A NATIONAL EMERGENCY ACTION NOTIFICATION HAS BEEN ISSUED FOR THE FOLLOWING
COUNTIES/AREAS:
UNITED STATES
AT 6:14 PM
ON AUG 28, 2012
EFFECTIVE
UNTIL 7:14 PM.
MESSAGE FROM KAAA_AM.

MESSAGE ISSUED BY A PRIMARY ENTRY POINT AND TRANSMITTED
AT 18:15
ON AUG 28, 2012
BY KAAA_AM.

EAS PROTOCOL TEXT:
ZCZC-PEP-EAN-000000+0100-2412214-KAAA_AM -

PRINTED ON TUESDAY AUGUST 28, 2012 AT 18:16

3. Verification of decode of RMT (Required Monthly Test) event from EAS originator.

STIMULUS	EXPECTED RESPONSE	OBSERVED RESPONSE
Channel 1: [PREAMBLE] ZCZC-EAS-RMT-000000 +0100-2421607-WAAA/FM- (repeated two more times with 1 second pauses) 8 second two tone Channel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Open squelch to pass channel 1 after 2nd packet received and verified. Touch screen display: A REQUIRED MONTHLY TEST HAS BEEN ISSUED FOR THE FOLLOWING COUNTIES/AREAS: UNITED STATE AT 12:07 PM ON AUG 29. 2012 EFFECTIVE UNTIL 1:07 PM. MESSAGE FROM WAAA/FM. MESSAGE ISSUED BY A BROADCAST STATION OR CABLE SYSTEM AND RECEIVED AT 12:06 ON AUG 29, 2012 FROM WAAA FM ON CHANNEL 1. EAS PROTOCOL TEXT: ZCZC-EAS-RMT-000000+0100-2421607-WAAA/FM- MESSAGE WAITING key: Flashing. MESSAGE ALERT Relay: Activated after 2nd packet received and verified. ON-AIR Relay: No response. LEFT and RIGHT PROGRAM AUDIO OUTPUT: No audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen display: √ MESSAGE WAITING key: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT and RIGHT PROGRAM AUDIO OUTPUT: √
Channel 1: [PREAMBLE] NNNN (repeated two more times with 1 second pauses) Chanel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Squelched ON after first packet decoded. Touch screen Display: Displays message and EOM RECEIVED. MESSAGE WAITING key: Remains Flashing. MESSAGE ALERT Relay: Deactivates on first EOM packet received. ON-AIR RELAY: No response. LEFT AND RIGHT AUDIO OUTPUT: No audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen Display: √ MESSAGE WAITING key: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT AND RIGHT PROGRAM AUDIO OUTPUT: √

Note: 1. Local time is Eastern Standard   2. Local station is KAAA/AM.

TESTED BY: _S. C._   DATE: _8/29/12_

CERTIFIED REPORT OF MEASUREMENT FOR TFT, INC.
FCC PART 11 TESTING
TFT MODEL EAS911+
EAS-CAP
FCC ID: BIOEAS911PLUS

COMPLIANCE TEST NUMBER: 3.1 and 4.1

Example message 3

COMPLIANCE TEST RESULTS - SEE THE FOLLOWING ___2___ PAGES.

D. C₁ 8/29/12

Example Message 3

Encoder

STATION WAAA_FM TRANSMIT LOG MESSAGE:

A REQUIRED MONTHLY TEST HAS BEEN ISSUED FOR THE FOLLOWING COUNTIES/AREAS:
UNITED STATES
AT 12:07 PM
ON AUG 29, 2012
EFFECTIVE
UNTIL 1:07 PM.
MESSAGE FROM WAAA_FM.

MESSAGE ISSUED BY A BROADCAST STATION OR CABLE SYSTEM AND TRANSMITTED
AT 12:07
ON AUG 29, 2012
BY WAAA_FM.

EAS PROTOCOL TEXT:
ZCZC-EAS-RMT-000000+0100-2421607-WAAA_FM -

PRINTED ON WEDNESDAY AUGUST 29, 2012 AT 12:12

Decoder

STATION KAAA_AM RECEIVE LOG MESSAGE:

A REQUIRED MONTHLY TEST HAS BEEN ISSUED FOR THE FOLLOWING COUNTIES/AREAS:
UNITED STATES
AT 12:07 PM
ON AUG 29, 2012
EFFECTIVE
UNTIL 1:07 PM.
MESSAGE FROM WAAA_FM.

MESSAGE ISSUED BY A BROADCAST STATION OR CABLE SYSTEM AND RECEIVED
AT 12:06
ON AUG 29, 2012
FROM WAAA_FM
ON CHANNEL 1.

EAS PROTOCOL TEXT:
ZCZC-EAS-RMT-000000+0100-2421607-WAAA_FM -
EOM RECEIVED

PRINTED ON WEDNESDAY AUGUST 29, 2012 AT 12:07

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4. Verification of decode of RMT (Required Monthly Test) event from CIV originator.

STIMULUS	EXPECTED RESPONSE	OBSERVED RESPONSE
Channel 1: [PREAMBLE] ZCZC-CIV-RMT-000000 +0100-2421614-WAAA/FM- (repeated two more times with 1 second pauses) 8 second two tone Channel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Open squelch to pass channel 1 after 2nd packet received and verified. Touch screen display: A CIVIL AUTHORITY HAS ISSUED A REQUIRED MONTHLY TEST FOR THE FOLLOWING COUNTIES/AREAS: UNITED STATE AT 12:14 PM ON AUG 29. 2012 EFFECTIVE UNTIL 1:14 PM. MESSAGE FROM WAAA/FM. MESSAGE ISSUED BY A BROADCAST STATION OR CABLE SYSTEM AND RECEIVED AT 12:14 ON AUG 29, 2012 FROM WAAA FM ON CHANNEL 1. EAS PROTOCOL TEXT: ZCZC-CIV-RMT-000000+0100-2421614-WAAA/FM- MESSAGE WAITING key: Flashing. MESSAGE ALERT Relay: Activated after 2nd packet received and verified. ON-AIR Relay: No response. LEFT and RIGHT PROGRAM AUDIO OUTPUT: No audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen display: √ MESSAGE WAITING key: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT and RIGHT PROGRAM AUDIO OUTPUT: √
Channel1: [PREAMBLE] NNNN (repeated two more times with 1 second pauses) Chanel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Squelched ON after first packet decoded. Touch screen Display: Displays message and EOM RECEIVED. MESSAGE WAITING key: Remains Flashing. MESSAGE ALERT Relay: Deactivates on first EOM packet received. ON-AIR RELAY: No response. LEFT AND RIGHT AUDIO OUTPUT: No audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen Display: √ MESSAGE WAITING key: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT AND RIGHT PROGRAM AUDIO OUTPUT: √

Note: 1. Local time is Eastern Standard   2. Local station is KAAA/AM.

TESTED BY: _2. C.._   DATE: _8/29/12_

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CERTIFIED REPORT OF MEASUREMENT FOR TFT, INC.
FCC PART 11 TESTING
TFT MODEL EAS911+
EAS-CAP
FCC ID: BIOEAS911PLUS

COMPLIANCE TEST NUMBER: 3.1 and 4.1
Example Message 4
COMPLIANCE TEST RESULTS - SEE THE FOLLOWING ___2___ PAGES.

J.C. 8/29/12

Encoder

STATION WAAA_FM TRANSMIT LOG MESSAGE:

A CIVIL AUTHORITY HAS ISSUED A REQUIRED MONTHLY TEST FOR THE FOLLOWING COUNTIES/AREAS:
UNITED STATES
AT 12:14 PM
ON AUG 29, 2012
EFFECTIVE
UNTIL 1:14 PM.

MESSAGE TRANSMITTED
AT 12:14
ON AUG 29, 2012
BY WAAA_FM.

EAS PROTOCOL TEXT:
ZCZC-CIV-RMT-000000+0100-2421614-WAAA_FM -

PRINTED ON WEDNESDAY AUGUST 29, 2012 AT 12:15

decoder

STATION KAAA_AM RECEIVE LOG MESSAGE:

A CIVIL AUTHORITY HAS ISSUED A REQUIRED MONTHLY TEST FOR THE FOLLOWING COUNTIES/AREAS:
UNITED STATES
AT 12:14 PM
ON AUG 29, 2012
EFFECTIVE
UNTIL 1:14 PM.

MESSAGE RECEIVED
AT 12:14
ON AUG 29, 2012
FROM WAAA_FM
ON CHANNEL 1.

EAS PROTOCOL TEXT:
ZCZC-CIV-RMT-000000+0100-2421614-WAAA_FM -
EOM RECEIVED

PRINTED ON WEDNESDAY AUGUST 29, 2012 AT 12:19

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5. Verification of decode of RWT (Required Weekly Test) event from EAS originator.

STIMULUS	EXPECTED RESPONSE	OBSERVED RESPONSE
Channel1: [PREAMBLE] ZCZC-CIV-RWT-000000 +0015-2421630-WAAA/FM- (repeated two more times with 1 second pauses) 8 second two tone Channel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Open squelch to pass channel 1 after 2nd packet received and verified. Touch screen display: A CIVIL AUTHORITY HAS ISSUED A REQUIRED MONTHLY TEST FOR THE FOLLOWING COUNTIES/AREAS: UNITED STATE AT 12:30 PM ON AUG 29, 2012 EFFECTIVE UNTIL 12:45 PM. MESSAGE FROM WAAA/FM. MESSAGE ISSUED BY A BROADCAST STATION OR CABLE SYSTEM AND RECEIVED AT 12:30 ON AUG 29, 2012 FROM WAAA FM ON CHANNEL 1. EAS PROTOCOL TEXT: ZCZC-CIV-RWT-000000+0015-2421630-WAAA/FM- MESSAGE WAITING key: Flashing. MESSAGE ALERT Relay: Activated after 2nd packet received and verified. ON-AIR Relay: No response. LEFT and RIGHT PROGRAM AUDIO OUTPUT: No audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen display: √ MESSAGE WAITING key: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT and RIGHT PROGRAM AUDIO OUTPUT: √
Channel1: [PREAMBLE] NNNN (repeated two more times with 1 second pauses) Chanel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Squelched ON after first packet decoded. Touch screen Display: Displays message and EOM RECEIVED. MESSAGE WAITING key: Remains Flashing. MESSAGE ALERT Relay: Deactivates on first EOM packet received. ON-AIR RELAY: No response. LEFT AND RIGHT AUDIO OUTPUT: No audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen Display: √ MESSAGE WAITING key: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT AND RIGHT PROGRAM AUDIO OUTPUT: √

Note: 1. Local time is Eastern Standard   2. Local station is KAAA/AM.

TESTED BY: T.C.   DATE: 8/29/12

CERTIFIED REPORT OF MEASUREMENT FOR TFT, INC.
FCC PART 11 TESTING
TFT MODEL EAS911+
EAS-CAP
FCC ID: BIOEAS911PLUS

COMPLIANCE TEST NUMBER: 3.1 and 4.1

Example Message 5

COMPLIANCE TEST RESULTS - SEE THE FOLLOWING ___2___ PAGES.

J. C. 8/29/12

Example Message 5

Encoder

STATION WAAA_FM TRANSMIT LOG MESSAGE:

A CIVIL AUTHORITY HAS ISSUED A REQUIRED WEEKLY TEST FOR THE FOLLOWING COUNTIES/AREAS:
UNITED STATES
AT 12:30 PM
ON AUG 29, 2012
EFFECTIVE
UNTIL 12:45 PM.

MESSAGE TRANSMITTED
AT 12:30
ON AUG 29, 2012
BY WAAA_FM.

EAS PROTOCOL TEXT:
ZCZC-CIV-RWT-000000+0015-2421630-WAAA_FM -

PRINTED ON WEDNESDAY AUGUST 29, 2012 AT 12:31

decoder

STATION KAAA_AM RECEIVE LOG MESSAGE:

A CIVIL AUTHORITY HAS ISSUED A REQUIRED WEEKLY TEST FOR THE FOLLOWING COUNTIES/AREAS:
UNITED STATES
AT 12:30 PM
ON AUG 29, 2012
EFFECTIVE
UNTIL 12:45 PM.

MESSAGE RECEIVED
AT 12:30
ON AUG 29, 2012
FROM WAAA_FM
ON CHANNEL 1.

EAS PROTOCOL TEXT:
ZCZC-CIV-RWT-000000+0015-2421630-WAAA_FM -
EOM RECEIVED

PRINTED ON WEDNESDAY AUGUST 29, 2012 AT 12:30

6. Verification of decode of RWT (Required Weekly Test) event from CIV originator.

STIMULUS	EXPECTED RESPONSE	OBSERVED RESPONSE
Channel1: [PREAMBLE] ZCZC-CIV-RWT-000000 +0015-2422223-WAAA/FM- (repeated two more times with 1 second pauses) 8 second two tone Channel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Open squelch to pass channel 1 after 2nd packet received and verified. Touch screen display: A CIVIL AUTHORITY HAS ISSUED A REQUIRED MONTHLY TEST FOR THE FOLLOWING COUNTIES/AREAS: UNITED STATE AT 6:23 PM ON AUG 29, 2012 EFFECTIVE UNTIL 6:38 PM. MESSAGE FROM WAAA/FM. MESSAGE ISSUED BY A BROADCAST STATION OR CABLE SYSTEM AND RECEIVED AT 18:22 ON AUG 29, 2012 FROM WAAA FM ON CHANNEL 1. EAS PROTOCOL TEXT: ZCZC-CIV-RWT-000000+0015-2422223-WAAA/FM- MESSAGE WAITING key: Flashing. MESSAGE ALERT Relay: Activated after 2nd packet received and verified. ON-AIR Relay: No response. LEFT and RIGHT PROGRAM AUDIO OUTPUT: No audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen display: √ MESSAGE WAITING key: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT and RIGHT PROGRAM AUDIO OUTPUT: √
Channel1: [PREAMBLE] NNNN (repeated two more times with 1 second pauses) Chanel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Squelched ON after first packet decoded. Touch screen Display: Displays message and EOM RECEIVED. MESSAGE WAITING key: Remains Flashing. MESSAGE ALERT Relay: Deactivates on first EOM packet received ON-AIR RELAY: No response. LEFT AND RIGHT AUDIO OUTPUT: No audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen Display: √ MESSAGE WAITING key: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT AND RIGHT PROGRAM AUDIO OUTPUT: √

Note: 1. Local time is Eastern Standard   2. Local station is KAAA/AM.

TESTED BY: T.C.   DATE: 8/29/12

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CERTIFIED REPORT OF MEASUREMENT FOR TFT, INC.
FCC PART 11 TESTING
TFT MODEL EAS911+
EAS-CAP
FCC ID: BIOEAS911PLUS

COMPLIANCE TEST NUMBER: 3.1 and 4.1

Example messge 6

COMPLIANCE TEST RESULTS - SEE THE FOLLOWING __2__ PAGES.

J. C, 8/29/12

STATION WAAA_FM TRANSMIT LOG MESSAGE:

A CIVIL AUTHORITY HAS ISSUED A REQUIRED WEEKLY TEST FOR THE FOLLOWING COUNTIES/AREAS:
UNITED STATES
AT 6:23 PM
ON AUG 29, 2012
EFFECTIVE
UNTIL 6:38 PM.

MESSAGE TRANSMITTED
AT 18:23
ON AUG 29, 2012
BY WAAA_FM.

EAS PROTOCOL TEXT:
ZCZC-CIV-RWT-000000+0015-2422223-WAAA_FM -

PRINTED ON WEDNESDAY AUGUST 29, 2012 AT 18:23

Decoder

STATION KAAA_AM RECEIVE LOG MESSAGE:

A CIVIL AUTHORITY HAS ISSUED A REQUIRED WEEKLY TEST FOR THE FOLLOWING COUNTIES/AREAS:
UNITED STATES
AT 6:23 PM
ON AUG 29, 2012
EFFECTIVE
UNTIL 6:38 PM.

MESSAGE RECEIVED
AT 18:22
ON AUG 29, 2012
FROM WAAA_FM
ON CHANNEL 1.

EAS PROTOCOL TEXT:
ZCZC-CIV-RWT-000000+0015-2422223-WAAA_FM -
EOM RECEIVED

PRINTED ON WEDNESDAY AUGUST 29, 2012 AT 18:56

7. Verification of decode of RMT (Required Monthly Test) event from EAS originator.

STIMULUS	EXPECTED RESPONSE	OBSERVED RESPONSE
Channel 1: [PREAMBLE] ZCZC-EAS-RMT-000000 +0100-2422226-WAAA/FM- (repeated two more times with 1 second pauses) 8 second two tone Channel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Open squelch to pass channel 1 after 2nd packet received and verified. Touch screen display: A REQUIRED MONTHLY TEST HAS BEEN ISSUED FOR THE FOLLOWING COUNTIES/AREAS: UNITED STATE AT 6:26 PM ON AUG 29. 2012 EFFECTIVE UNTIL 7:26 PM. MESSAGE FROM WAAA/FM. MESSAGE ISSUED BY A BROADCAST STATION OR CABLE SYSTEM AND RECEIVED AT 18:25 ON AUG 29, 2012 FROM WAAA FM ON CHANNEL 1. EAS PROTOCOL TEXT: ZCZC-EAS-RMT-000000+0100-2422226-WAAA/FM- MESSAGE WAITING key: Flashing. MESSAGE ALERT Relay: Activated after 2nd packet received and verified. ON-AIR Relay: No response. LEFT and RIGHT PROGRAM AUDIO OUTPUT: No audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen display: √ MESSAGE WAITING key: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT and RIGHT PROGRAM AUDIO OUTPUT: √
Channel1- [PREAMBLE] NNNN (repeated two more times with 1 second pauses) Chanel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Squelched ON after first packet decoded. Touch screen Display: Displays message and EOM RECEIVED. MESSAGE WAITING key: Remains Flashing. MESSAGE ALERT Relay: Deactivates on first EOM packet received. ON-AIR RELAY: No response. LEFT AND RIGHT AUDIO OUTPUT: No audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen Display: √ MESSAGE WAITING key: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT AND RIGHT PROGRAM AUDIO OUTPUT: √

Note: 1. Local time is Eastern Standard   2. Local station is KAAA/AM.
Note: 3. Local station in MANUAL mode.

TESTED BY: _Di Cu_   DATE: _8/29/12_

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CERTIFIED REPORT OF MEASUREMENT FOR TFT, INC.
FCC PART 11 TESTING
TFT MODEL EAS911+
EAS-CAP
FCC ID: BIOEAS911PLUS

COMPLIANCE TEST NUMBER: 3.1 and 4.1
Example message 7
COMPLIANCE TEST RESULTS - SEE THE FOLLOWING ___2___ PAGES.

J. C. 8/29/12

Example Message 7

Encoder

STATION WAAA_FM TRANSMIT LOG MESSAGE:

A REQUIRED MONTHLY TEST HAS BEEN ISSUED FOR THE FOLLOWING COUNTIES/AREAS:
UNITED STATES
AT 6:26 PM
ON AUG 29, 2012
EFFECTIVE
UNTIL 7:26 PM.
MESSAGE FROM WAAA_FM.

MESSAGE ISSUED BY A BROADCAST STATION OR CABLE SYSTEM AND TRANSMITTED
AT 18:26
ON AUG 29, 2012
BY WAAA_FM.

EAS PROTOCOL TEXT:
ZCZC-EAS-RMT-000000+0100-2422226-WAAA_FM -

PRINTED ON WEDNESDAY AUGUST 29, 2012 AT 18:31

Decoder

STATION KAAA_AM RECEIVE LOG MESSAGE:

A REQUIRED MONTHLY TEST HAS BEEN ISSUED FOR THE FOLLOWING COUNTIES/AREAS:
UNITED STATES
AT 6:26 PM
ON AUG 29, 2012
EFFECTIVE
UNTIL 7:26 PM.
MESSAGE FROM WAAA_FM.

MESSAGE ISSUED BY A BROADCAST STATION OR CABLE SYSTEM AND RECEIVED
AT 18:25
ON AUG 29, 2012
FROM WAAA_FM
ON CHANNEL 1.

EAS PROTOCOL TEXT:
ZCZC-EAS-RMT-000000+0100-2422226-WAAA_FM -
EOM RECEIVED

PRINTED ON WEDNESDAY AUGUST 29, 2012 AT 18:26

8. Verification of decode of TOR (Tornado Warning) event from WXR originator.

STIMULUS	EXPECTED RESPONSE	OBSERVED RESPONSE
Channel 1: [PREAMBLE] ZCZC-WXR-TOR-000000 +0030-2422237-WAAA/FM- (repeated two more times with 1 second pauses) 8 second two tone Channel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Open squelch to pass channel 1 after 2nd packet received and verified. Touch screen display: THE NATIONAL WEATHER SERVICE HAS ISSUED A TORNADO WARNING FOR THE FOLLOWING COUNTIES/AREAS: UNITED STATE AT 6:37 PM ON AUG 29. 2012 EFFECTIVE UNTIL 7:07 PM. MESSAGE FROM WAAA/FM. MESSAGE ISSUED BY A BROADCAST STATION OR CABLE SYSTEM AND RECEIVED AT 18:37 ON AUG 29, 2012 FROM WAAA FM ON CHANNEL 1. EAS PROTOCOL TEXT: ZCZC-WXR-TOR-000000+0030-2422237-WAAA/FM- MESSAGE WAITING key: Flashing. MESSAGE ALERT Relay: Activated after 2nd packet received and verified. ON-AIR Relay: No response. LEFT and RIGHT PROGRAM AUDIO OUTPUT: No audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen display: √ MESSAGE WAITING key: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT and RIGHT PROGRAM AUDIO OUTPUT: √
Channel1: [PREAMBLE] NNNN (repeated two more times with 1 second pauses) Chanel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Squelched ON after first packet decoded. Touch screen Display: Displays message and EOM RECEIVED. MESSAGE WAITING key: Remains Flashing. MESSAGE ALERT Relay: Deactivates on first EOM packet received. ON-AIR RELAY: No response. LEFT AND RIGHT AUDIO OUTPUT: No audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen Display: √ MESSAGE WAITING key: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT AND RIGHT PROGRAM AUDIO OUTPUT: √

Note: 1. Local time is Eastern Standard   2. Local station is KAAA/AM.

TESTED BY: 𝒪, 𝒞ₗ   DATE: 8/29/12

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CERTIFIED REPORT OF MEASUREMENT FOR TFT, INC.
FCC PART 11 TESTING
TFT MODEL EAS911+
EAS-CAP
FCC ID: BIOEAS911PLUS

COMPLIANCE TEST NUMBER: 3.1 and 4.1

Example Message 8

COMPLIANCE TEST RESULTS - SEE THE FOLLOWING __2__ PAGES.

J.C. 8/29/12

STATION WAAA_FM TRANSMIT LOG MESSAGE:

THE NATIONAL WEATHER SERVICE HAS ISSUED A TORNADO WARNING FOR THE FOLLOWING
COUNTIES/AREAS:
UNITED STATES
AT 6:37 PM
ON AUG 29, 2012
EFFECTIVE
UNTIL 7:07 PM.

MESSAGE TRANSMITTED
AT 18:37
ON AUG 29, 2012
BY WAAA_FM.

EAS PROTOCOL TEXT:
ZCZC-WXR-TOR-000000+0030-2422237-WAAA_FM -

PRINTED ON WEDNESDAY AUGUST 29, 2012 AT 18:37

decoder

STATION KAAA_AM RECEIVE LOG MESSAGE:

THE NATIONAL WEATHER SERVICE HAS ISSUED A TORNADO WARNING FOR THE FOLLOWING
COUNTIES/AREAS:
UNITED STATES
AT 6:37 PM
ON AUG 29, 2012
EFFECTIVE
UNTIL 7:07 PM.

MESSAGE RECEIVED
AT 18:37
ON AUG 29, 2012
FROM WAAA_FM
ON CHANNEL 1.

EAS PROTOCOL TEXT:
ZCZC-WXR-TOR-000000+0030-2422237-WAAA_FM -
EOM RECEIVED

PRINTED ON WEDNESDAY AUGUST 29, 2012 AT 18:42

9. Verification of decode of C E M (Civil Emergency) event from CIV originator.

STIMULUS	EXPECTED RESPONSE	OBSERVED RESPONSE
Channel 1: [PREAMBLE] ZCZC-CIV-CEM-000000 +0030-2422245-WAAA/FM- (repeated two more times with 1 second pauses) 8 second two tone Channel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Open squelch to pass channel 1 after 2nd packet received and verified. Touch screen display: A CIVIL AUTHORITY HAS ISSUED A REQUIRED MONTHLY TEST FOR THE FOLLOWING COUNTIES/AREAS: UNITED STATE AT 6:45 PM ON AUG 29. 2012 EFFECTIVE UNTIL 7:15 PM. MESSAGE FROM WAAA/FM. MESSAGE ISSUED BY A BROADCAST STATION OR CABLE SYSTEM AND RECEIVED AT 18:44 ON AUG 29, 2012 FROM WAAA FM ON CHANNEL 1. EAS PROTOCOL TEXT: ZCZC-CIV-CEM-000000+0030-2422245-WAAA/FM- MESSAGE WAITING key: Flashing. MESSAGE ALERT Relay: Activated after 2nd packet received and verified. ON-AIR Relay: No response. LEFT and RIGHT PROGRAM AUDIO OUTPUT: No audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen display: √ MESSAGE WAITING key: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT and RIGHT PROGRAM AUDIO OUTPUT: √
Channel1: [PREAMBLE] NNNN (repeated two more times with 1 second pauses) Chanel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Squelched ON after first packet decoded. Touch screen Display: Displays message and EOM RECEIVED. MESSAGE WAITING key: Remains Flashing. MESSAGE ALERT Relay: Deactivates on first EOM packet received. ON-AIR RELAY: No response. LEFT AND RIGHT AUDIO OUTPUT: No audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen Display: √ MESSAGE WAITING key: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT AND RIGHT PROGRAM AUDIO OUTPUT: √

Note: 1. Local time is Eastern Standard   2. Local station is KAAA/AM.

TESTED BY: _J. C._   DATE: _8/29/12_

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CERTIFIED REPORT OF MEASUREMENT FOR TFT, INC.
FCC PART 11 TESTING
TFT MODEL EAS911+
EAS-CAP
FCC ID: BIOEAS911PLUS

COMPLIANCE TEST NUMBER: 3.1 and 4.1 *Example Message 9*
COMPLIANCE TEST RESULTS - SEE THE FOLLOWING _2_ PAGES.

J. C. 8/29/12

Example Message 9

Encoder

STATION WAAA_FM TRANSMIT LOG MESSAGE:

A CIVIL AUTHORITY HAS ISSUED A CIVIL EMERGENCY MESSAGE FOR THE FOLLOWING
COUNTIES/AREAS:
UNITED STATES
AT 6:45 PM
ON AUG 29, 2012
EFFECTIVE
UNTIL 7:15 PM.

MESSAGE TRANSMITTED
AT 18:45
ON AUG 29, 2012
BY WAAA_FM.

EAS PROTOCOL TEXT:
ZCZC-CIV-CEM-000000+0030-2422245-WAAA_FM -

PRINTED ON WEDNESDAY AUGUST 29, 2012 AT 18:45

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decoder

STATION KAAA_AM RECEIVE LOG MESSAGE:

A CIVIL AUTHORITY HAS ISSUED A CIVIL EMERGENCY MESSAGE FOR THE FOLLOWING
COUNTIES/AREAS:
UNITED STATES
AT 6:45 PM
ON AUG 29, 2012
EFFECTIVE
UNTIL 7:15 PM.

MESSAGE RECEIVED
AT 18:44
ON AUG 29, 2012
FROM WAAA_FM
ON CHANNEL 1.

EAS PROTOCOL TEXT:
ZCZC-CIV-CEM-000000+0030-2422245-WAAA_FM -
EOM RECEIVED

PRINTED ON WEDNESDAY AUGUST 29, 2012 AT 18:45

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10. Verification of decode of C E M (Civil Emergency) event from EAS originator.

STIMULUS	EXPECTED RESPONSE	OBSERVED RESPONSE
Channel 1: [PREAMBLE] ZCZC-EAS-CEM-000 000 +0045-2422247-WAAA/FM- (repeated two more times with 1 second pauses) 8 second two tone Channel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Open squelch to pass channel 1 after 2nd packet received and verified. Touch screen display: A CIVIL AUTHORITY HAS ISSUED A REQUIRED MONTHLY TEST FOR THE FOLLOWING COUNTIES/AREAS: UNITED STATE AT 6:47 PM ON AUG 29. 2012 EFFECTIVE UNTIL 7:32 PM. MESSAGE FROM WAAA/FM. MESSAGE ISSUED BY A BROADCAST STATION OR CABLE SYSTEM AND RECEIVED AT 18:47 ON AUG 29, 2012 FROM WAAA FM ON CHANNEL 1. EAS PROTOCOL TEXT: ZCZC-EAS-CEM-000000+0045-2422247-WAAA/FM- MESSAGE WAITING key: Flashing. MESSAGE ALERT Relay: Activated after 2nd packet received and verified. ON-AIR Relay: No response. LEFT and RIGHT PROGRAM AUDIO OUTPUT: No audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen display: √ MESSAGE WAITING key: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT and RIGHT PROGRAM AUDIO OUTPUT: √
Channel1: [PREAMBLE] NNNN (repeated two more times with 1 second pauses) Chanel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Squelched ON after first packet decoded. Touch screen Display: Displays message and EOM RECEIVED. MESSAGE WAITING key: Remains Flashing. MESSAGE ALERT Relay: Deactivates on first EOM packet received. ON-AIR RELAY: No response. LEFT AND RIGHT AUDIO OUTPUT: No audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen Display: √ MESSAGE WAITING key: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT AND RIGHT PROGRAM AUDIO OUTPUT: √

Note: 1. Local time is Eastern Standard   2.   Local station is KAAA/AM.

TESTED BY: _____   DATE: _8/29/12_

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CERTIFIED REPORT OF MEASUREMENT FOR TFT, INC.
FCC PART 11 TESTING
TFT MODEL EAS911+
EAS-CAP
FCC ID: BIOEAS911PLUS

COMPLIANCE TEST NUMBER: 3.1 and 4.1

Example message 10

COMPLIANCE TEST RESULTS - SEE THE FOLLOWING _2_ PAGES.

J. C. 8/29/12

STATION WAAA_FM TRANSMIT LOG MESSAGE:

A CIVIL EMERGENCY MESSAGE HAS BEEN ISSUED FOR THE FOLLOWING COUNTIES/AREAS:
UNITED STATES
AT 6:47 PM
ON AUG 29, 2012
EFFECTIVE
UNTIL 7:32 PM.
MESSAGE FROM WAAA_FM.

MESSAGE ISSUED BY A BROADCAST STATION OR CABLE SYSTEM AND TRANSMITTED
AT 18:47
ON AUG 29, 2012
BY WAAA_FM.

EAS PROTOCOL TEXT:
ZCZC-EAS-CEM-000000+0045-2422247-WAAA_FM -

PRINTED ON WEDNESDAY AUGUST 29, 2012 AT 18:48

1

decoder

STATION KAAA_AM RECEIVE LOG MESSAGE:

A CIVIL EMERGENCY MESSAGE HAS BEEN ISSUED FOR THE FOLLOWING COUNTIES/AREAS:
UNITED STATES
AT 6:47 PM
ON AUG 29, 2012
EFFECTIVE
UNTIL 7:32 PM.
MESSAGE FROM WAAA_FM.

MESSAGE ISSUED BY A BROADCAST STATION OR CABLE SYSTEM AND RECEIVED
AT 18:47
ON AUG 29, 2012
FROM WAAA_FM
ON CHANNEL 1.

EAS PROTOCOL TEXT:
ZCZC-EAS-CEM-000000+0045-2422247-WAAA_FM -
EOM RECEIVED

PRINTED ON WEDNESDAY AUGUST 29, 2012 AT 18:48

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11. Verification of decode of TOR (Tornado Warning) event from WXR originator.

STIMULUS	EXPECTED RESPONSE	OBSERVED RESPONSE
Channel 1: [PREAMBLE] ZCZC-WXR-TOR-000000 +0100-2422250-WAAA/FM- (repeated two more times with 1 second pauses) 8 second two tone Channel 2: (idle)	Channel 1 indicator= ON while FSK transmitting. Channel 2 indicator= OFF. Speaker: Open squelch to pass channel 1 after 2nd packet received and verified. Touch screen display: THE NATIONAL WEATHER SERVICE HAS ISSUED A TORNADO WARNING FOR THE FOLLOWING COUNTIES/AREAS: UNITED STATE AT 6:50 PM ON AUG 29, 2012 EFFECTIVE UNTIL 7:50 PM. MESSAGE FROM WAAA/FM. MESSAGE ISSUED BY A BROADCAST STATION OR CABLE SYSTEM AND RECEIVED AT 18:49 ON AUG 29, 2012 FROM WAAA FM ON CHANNEL 1. EAS PROTOCOL TEXT: ZCZC-WXR-TOR-000000+0100-2422250-WAAA/FM- MESSAGE WAITING key: Flashing. MESSAGE ALERT Relay: Activated after 2nd packet received and verified. ON-AIR Relay: No response. LEFT and RIGHT PROGRAM AUDIO OUTPUT: No audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen display: √ MESSAGE WAITING key: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT and RIGHT PROGRAM AUDIO OUTPUT: √
Channel1: [PREAMBLE] NNNN (repeated two more times with 1 second pauses) Chanel 2: (idle)	Channel 1 indicator: ON while FSK transmitting. Channel 2 indicator: OFF. Speaker: Squelched ON after first packet decoded. Touch screen Display: Displays message and EOM RECEIVED. MESSAGE WAITING key: Remains Flashing. MESSAGE ALERT Relay: Deactivates on first EOM packet received. ON-AIR RELAY: No response. LEFT AND RIGHT AUDIO OUTPUT: No audio.	Channel 1 indicator: √ Channel 2 indicator: √ Speaker: √ Touch screen Display: √ MESSAGE WAITING key: √ MESSAGE ALERT Relay: √ ON-AIR Relay: √ LEFT AND RIGHT PROGRAM AUDIO OUTPUT: √

Note: 1. Local time is Eastern Standard 2. Local station is KAAA/AM.

TESTED BY: J. C.   DATE: 8/29/12

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CERTIFIED REPORT OF MEASUREMENT FOR TFT, INC.
FCC PART 11 TESTING
TFT MODEL EAS911+
EAS-CAP
FCC ID: BIOEAS911PLUS

COMPLIANCE TEST NUMBER: 3.1 and 4.1

Example message 11

COMPLIANCE TEST RESULTS - SEE THE FOLLOWING __2__ PAGES.

D. C. 8/29/12

STATION WAAA_FM TRANSMIT LOG MESSAGE:

THE NATIONAL WEATHER SERVICE HAS ISSUED A TORNADO WARNING FOR THE FOLLOWING
COUNTIES/AREAS:
UNITED STATES
AT 6:50 PM
ON AUG 29, 2012
EFFECTIVE
UNTIL 7:50 PM.

MESSAGE TRANSMITTED
AT 18:50
ON AUG 29, 2012
BY WAAA_FM.

EAS PROTOCOL TEXT:
ZCZC-WXR-TOR-000000+0100-2422250-WAAA_FM -

PRINTED ON WEDNESDAY AUGUST 29, 2012 AT 18:50

Decoder

STATION KAAA_AM RECEIVE LOG MESSAGE:

THE NATIONAL WEATHER SERVICE HAS ISSUED A TORNADO WARNING FOR THE FOLLOWING
COUNTIES/AREAS:
UNITED STATES
AT 6:50 PM
ON AUG 29, 2012
EFFECTIVE
UNTIL 7:50 PM.

MESSAGE RECEIVED
AT 18:49
ON AUG 29, 2012
FROM WAAA_FM
ON CHANNEL 1.

EAS PROTOCOL TEXT:
ZCZC-WXR-TOR-000000+0100-2422250-WAAA_FM -
EOM RECEIVED

PRINTED ON WEDNESDAY AUGUST 29, 2012 AT 18:50

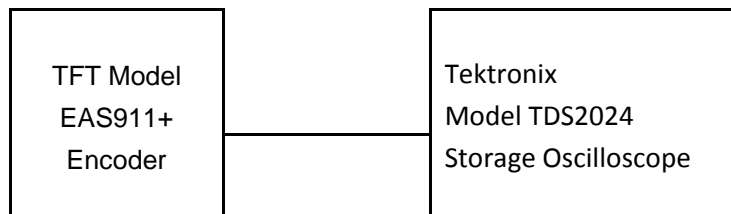3.1A   EAS Protocol Verification for *§11.32(a)(1)*

3.1A.1 Test Objective

The objective of this test is to verify the EAS Protocol which consists of a four part message for an emergency activation of the EAS. :
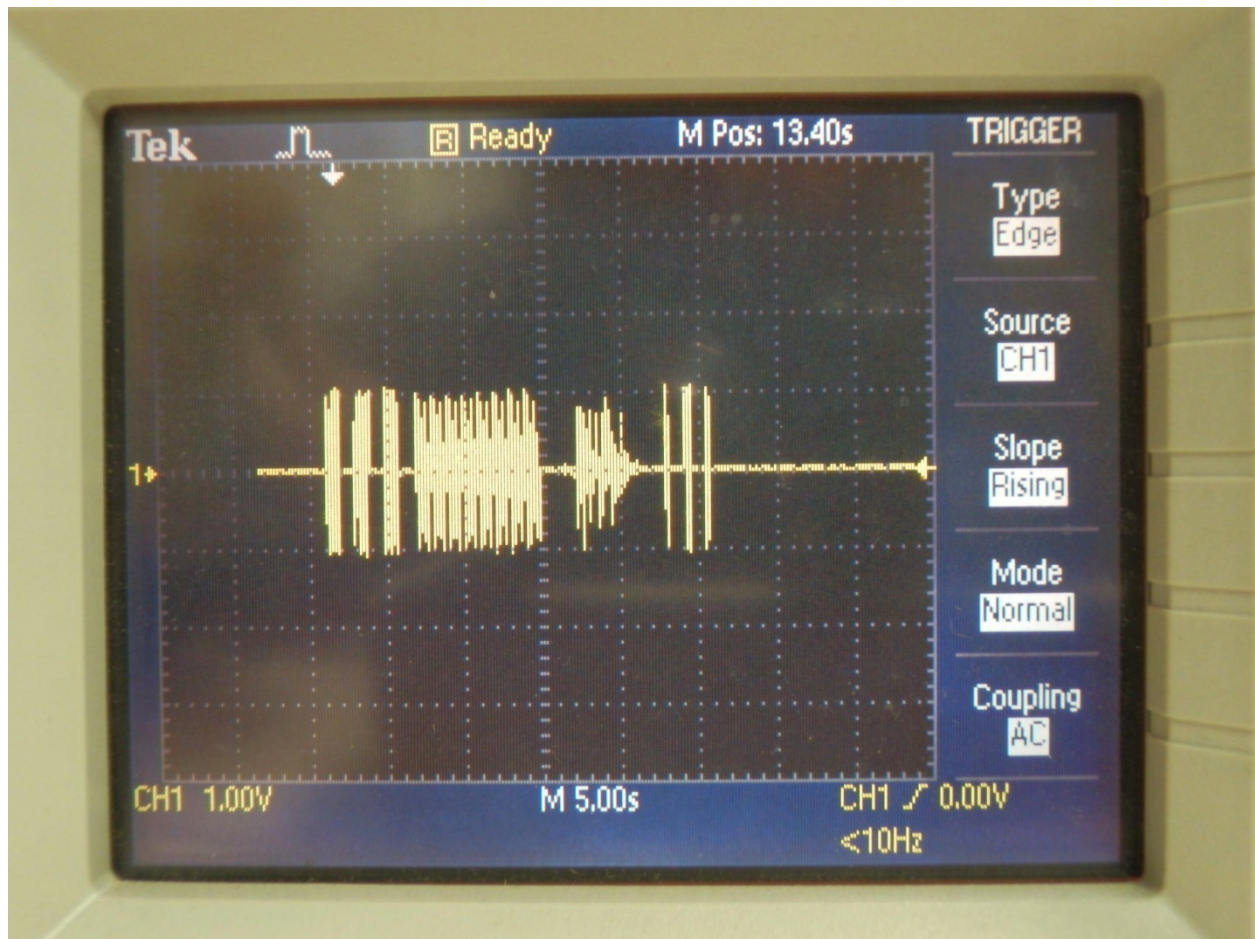
> *§11.32(a)(1):*
> *The Preamble and EAS Codes must use Audio Frequency Shift keying at a rate of 520.83 bits per second to transmit the codes. Mark frequency is 2083.3 Hz and space frequency is 1562.5 Hz. Mark and space time must be 1.92 milliseconds. Characters are ASCII seven bits as defined to ANSI X3.4-1977 ending with an eighth null bit (either 0 or 1) to constitute a full eight-bit byte.*

3.1A.2   Test Block Diagrams

```
┌─────────────────┐          ┌─────────────────────┐
│  TFT Model       │          │  Tektronix           │
│  EAS911+         │──────────│  Model TDS2024       │
│  Encoder         │          │  Storage Oscilloscope│
└─────────────────┘          └─────────────────────┘
```

3.1A.3 Test Methodology

A Tektronix Storage Oscilloscope Model TDS2024 is used to capture all signal timing and duration. The display data are shown in the following 12 Pages.

EAS Message