FCC

QUALIFICATION TEST REPORT

for

EMERGENCY LOCATOR TRANSMITTER (ELT)

Model: AK-451

PER FCC CFR TITLE 47, PART 2, PART 87 AND PART 95 REQUIREMENTS

Prepared for

AMERIKING
17881 SAMPSON
HUNTINGTON BEACH, CA 29668

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DATE: FEBRUARY 23, 2007

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GENERAL REPORT SUMMARY

Compatible Electronics Inc. generates this electromagnetic emission test report, which is an independent testing and consulting firm. The test report is based on testing performed by Compatible Electronics personnel according to the measurement procedures described in the test specifications given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced in any form unless done so in full with the written permission of Compatible Electronics.

This report must not be used to claim product endorsement by NVLAP, NIST, or any other agency of the U.S. Government or other governments.

Device Tested: Emergency Locator Transmitter (ELT)
Model: AK-451
S/N: E1

Product Description: The EUT is a personal locator beacon.

Modifications: The EUT was not modified during the testing.

Manufacturer: Ameriking
17881 Sampson
Huntington Beach, CA 29668

Test Date: December 29, 2006, January 10, 2007 and March 8, 2007.

Test Deviations: The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	TEST DATE	RESULTS
1	Radiated RF Emissions, Fundamental Emissions-Peak Effective Radiated Power	12-29-06	Complies with the limits specified by CFR Title 47, Part 2, Subpart N, Section §2.1511.
2	Radiated RF Emissions, Spurious Emissions.	3-7-07	Complies with the limits specified by CFR Title 47, Part 2, Subpart N, Section §2.1511.
3	Measurement of modulation characteristics	1-10-07	Complies with the limits specified by CFR 47, Part 2, Subpart N, Section 2.513
4	Spectral Measurement	1-10-07	Complies with the limits specified by CFR 47, Part 2, Subpart N, Section 2.1515.

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on Emergency Locator Transmitter (ELT) Model: AK-451. The EMI measurements were performed according to the measurement procedures described in Code of Federal Regulations Title 47, Part 2 Subpart N Sections §2.1511 "Measurements of Radiated Emissions, §2.1513 "Measurements of Modulation Characteristics" and §2.1515 "Spectral Measurements" of the FCC rules.

1.1 FCC TITLE 47 PART 2 COMPLIANCE CROSS REFERENCE

Requirements FCC PART 2 Para.	Test Procedures FCC PART 2 Para.	TEST DATE	Description	**Test Report C61222M1, Para.**
2.1046 (a) (c)	2.1511 (a)(b)(c)	12-29-06	RF Power Output Measurement	6.1.1
2.1047 (d)	2.1513 (a)(b)(c)	01-10-07	Modulation Characteristics Measurement	6.1.2
2.1049	2.1515(b)	01-10-07	Occupied Bandwidth Measurement	6.1.3
2.1051	2.1511 (c)	03-07-07	Spurious Emission at Antenna Terminal Test	6.1.1
2.1053	2.1511 (c)	03-07-07	Field Strength of Spurious Radiation Measurement	6.1.1
2.1055	2.1055	See Doc. QTR-451, Rev. NC	Frequency Stability	See Doc. QTR-451, Rev. NC
2.1057 (a)(b)(c)(d)	2.1511 (c)	01-10-07	Frequency Spectrum to Be Investigated	6.1.1

1.2 FCC TITLE 47 PART 87 COMPLIANCE CROSS REFERENCE

Requirements FCC PART 87 Para	Test Procedures FCC PART 2 Para	Test Procedures RTCA DO-183 Para	Test Procedures RTCA DO-204 Para	TEST DATE	Description	**Test Report C61222M1, Para.**
87.131	2.1511 (a)(b)(c)	2.4.2.2	II – 1.0	12-29-06	Power and Emission	6.1.1
87.133	2.1055	2.4.2.2	II – 2.0		Frequency Stability	
87.135	2.1515 (b)	2.4.2.2		01-10-07	Bandwidth of Emission	6.1.3
87.139 (h)	2.1515(b)	2.4.2.2		12-29-07	Emission Limitations	6.1.3
87.141	2.1513 (a)(b)(c)	2.4.2.2		01-10-07	Modulation Requirement	6.1.2
87.147 (a)		2.3.1		See QTR-451, Rev. NC	Type Acceptance of Equipment Temperature	See QTR-451, Rev. NC
87.147 (b)	2.1515 (c)	2.4.2.2		01-10-07	Signal Enhancement Test	6.1.3
87.195		2.4.2.2		See Doc. QTR-451, Rev NC	Frequencies	See Doc. QTR-451, Rev NC
87.199 (a)(b)(c)(d)(e)(f)(g)				See QTR-451, Rev. NC --- See Doc. 28061-0219605, dated 7/20/07 --- See Doc. E6557-CS dated 1/25/07 and 7/4/07 Intespace Lab --- See Doc. 27183-1116713 dated 2/25/07 --- See Doc. 776-5545 Rev. A dated 2/28/07 National Tech. Sys. Inc.	Special Requirements for 406 MHz ELTs	See QTR-451, Rev. NC --- See Doc. 28061-0219605, dated 7/20/07 --- See Doc. E6557-CS dated 1/25/07 and 7/4/07 Intespace Lab --- See Doc. 27183-1116713 dated 2/25/07 --- See Doc. 776-5545 Rev. A dated 2/28/07 National Tech. Sys. Inc.

2. ADMINISTRATIVE DATA

2.1 Location of Testing

The EMI tests described herein were performed at the test facilities of Compatible Electronics, 19121 El Toro Road, Lake Forest (Silverado), California 92676 and 20621 Pascal Way, Lake Forest, California 92630.

2.2 Traceability Statement

The calibration certificates of all test equipment used during the test are on file at the location of the test. The calibration is traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

Ameriking

Keith Van	Engineer

Compatible Electronics Inc.

Eli McClure	Test Technician
Joey Madlangbayan	Test Engineer
Scott McCutchan	Lab Manager – Lake Forest (Silverado) Division

2.4 Date Test Sample was Received

The test sample was received on December 26, 2006.

2.5 Disposition of the Test Sample

The test sample was returned to Ameriking on March 8, 2007.

2.6 Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network
NVLAP	National Voluntary Laboratory Accreditation Program
CFR	Code of Federal Regulations
ELT	Emergency Locator Transmitter

3. APPLICABLE DOCUMENTS

The following documents are referenced or used in the preparation of this EMI Test Report.

SPEC	TITLE
CFR Title 47, Part 2, Subpart N, Section §2.1511	Measurements of radiated emissions
CFR Title 47, Part 2, Subpart N, Section §2.1513	Measurements of Modulation Characteristics
CFR Title 47, Part 2, Subpart N, Section §2.1515	Spectral Measurements

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration - EMI

The Emergency Locator Transmitter (ELT) Model: AK-451 (EUT) had two configurations. The first configuration is an Automatic Fixed beacon with the antenna designed to be mounted on a metal surface (aircraft fuselage) and includes the Whip Antenna 1, Whip Antenna 2, Rod Antenna and Blade Antenna. In the first configuration the EUT was connected to a counterpoise via its BNC connector, the counterpoise (6-ft. coaxial cable assembly, cable 1) is then connected to an antenna via its BNC connector. The second configuration is an Automatic Portable/Survival/Personal Locator Beacon designed to operate without a ground plane and includes the Portable Antenna. In the second configuration the EUT is connected directly to the antenna via its BNC connector. Both configurations had two modes of operation, "On" and "Arm," each test specifies which mode to test in.

For spurious emissions the second configuration was used.

4.1.1 Cable Construction and Termination

Cable 1

This is a 1-meter braid shielded cable connection the EUT to the counterpoise. There is a BNC connector at each end.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

#	EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NUMBER
1	EMERGENCY LOCATOR TRANSMITTER (ELT) (EUT)	AMERIKING	AK-451	E1

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
Analyzer Spectrum – RF Section	Hewlett Packard	8566B	2747A04757	2/15/06	2/15/07
Analyzer Spectrum – Display Section	Hewlett Packard	85662A	2648A15455	2/15/06	2/15/07
Analyzer Spectrum - Quasi-Peak Adapter	Hewlett Packard	85650A	3303A01688	2/15/06	2/15/07
Antenna, Di-Pole	Com Power				
Computer Test Station	Hewlett Packard	Pavilion 4530	US91925466	N.C.R.	N/A
Generator Comb - Radiated	Com Power	CG-520	25164	N.C.R.	N/A
Keyboard Test Station	Hewlett Packard	5183-7399	B91617825	N.C.R.	N/A
Mast Antenna	Com Power	AM-400	N/A	N.C.R.	N/A
Monitor Test Station	Sony	CPD-100ES	7862A008	N.C.R.	N/A
Mouse Test Station	Hewlett Packard	M-S34	LZC911S8069	N.C.R.	N/A

5.3 EMI/EMC Measurement and Control Software Information

LAB(S)	SOFTWARE TITLE	MANUFACTURER	VERSION
H, J	Compatible Electronics Data Capture Program	Compatible Electronics	3.1
H, J	Compatible Electronics Emissions Program	Compatible Electronics	2.3 (SR21)

6. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section.

6.1 RF Emissions

6.1.1 Radiated Emissions Test

The Commission's Rules require that the peak effective radiated power (PERP) of a Class A, B or S EPIRB not be less than 75 mW under certain specified conditions. The PERP of an EPIRB transmitter is determined by comparing its level to a reference PERP generated by a standard quarter-wave monopole antenna located on a one-wavelength minimum diameter metal ground plane. The rules also require that all spurious and harmonic emissions be attenuated by a specified amount with respect to the reference PERP. In addition, there is a limit on the PERP of radiated emissions with the switch in the test mode. These measurements are to be made in accordance with the following procedure.

(a) General set-up instructions. Measurements of radiated electromagnetic emissions (EME) are to be performed on the 30 meter open field test site described in §2.1503(a) and on one of the pair of frequencies listed in §2.1507. A receiver, tuned dipole antennas and a calibrated signal generator as described in §2.1505 are required. Its own internal battery should power the EPIRB with its standard antenna attached and deployed.

(b) Set-up for radiated EME tests.

Step (1) - Place a 121.5 MHz quarter-wave vertical antenna element at the center of the ground plane and connect the output of the calibrated signal generator to the antenna.
Step (2) - Mount the tuned dipole antenna on the antenna mast, tune the elements to 121.5 MHz and connect the antenna to the receiver.
Step (3) - After an appropriate warm up, tune the receiver to the frequency of the test unit, set the detector to peak mode and the bandwidth to 100 kHz. (Note: It is sometimes helpful to monitor the receiver audio output with a speaker. The EPIRB signal may be identified by its distinctive modulation.)

(c) Radiated EME tests.

Fundamental Emissions-Peak Effective Radiated Power

Step (1) - Turn on the signal generator and adjust the output to 75 mW at 121.5 MHz.
Step (2) - Vary the antenna height from one to four meters in both vertical and horizontal polarization. Record the highest receiver reading in dBm as the reference level.
Step (3) - Disconnect the signal generator and replace the quarter wave vertical element on the ground plane with the EPIRB under test. The EPIRB is to be positioned directly on the surface of and in the center of the metal ground plane.
Step (4) - Activate the EPIRB.
Step (5) - Vary the receive antenna height from one to four meters in both vertical and horizontal polarization. Record the highest receiver reading in dBm and the instrument settings, antenna height and direction for maximum radiation, antenna polarization and conversion factors, if any, associated with that reading.

Radiated Emissions Test (Continued)

Step (6) - Repeat step 5 with the EPIRB switch in the test position. Return the switch to the normal operation position.
Step (7) - Rotate the EPIRB 30 degrees and repeat steps 5 and 6. Repeat this step for all successive 30 degree segments of a full, 360 degree rotation of the EPIRB.
Step (8) - Repeat §2.1511(b) and steps 1 through 7 for 243 MHz.
Step (9) - Compute the peak effective radiated power for the maximum level of each measured emission using the following formula:

$PERP = 75 \text{ X } \log10^{-1} ((dBmmeas-dBmref) / 10)$

Where:

dBmmeas is the measured receiver reading in dBm, and dBmref is the reference receiver reading found in step 2 of §2.1511(c).

Step (10) - Record the PERP in mW. The FCC limit for minimum power in the normal operation mode (i.e., with the EPIRB switch in the normal operating position) is 75 mW. The FCC limit for maximum power in the test mode is 0.0001 mW.

Spurious Emissions

Step (11) - Reset the signal generator to operate at 121.5 MHz.
Step (12) - For each spurious and harmonic emission to be measured, retune the receive antenna to the appropriate frequency and repeat Steps 5 and 7.
Step (13) - Determine the FCC limit on power for spurious emissions on the frequency of each measured emission as follows:

The rules require that spurious emissions be attenuated at least 30 decibels below the transmit power level. Therefore, the maximum received power limit for a spurious emission can be calculated from the formula:

dBmspur = dBmmeas + AF121.5 - AFspur freq - 30

dBmmeas = measured receiver reading (§2.1511(c), step (5))

AF121.5= tuned dipole antenna factor at 121.5 MHz
AFspur freq = tuned dipole antenna factor at spurious freq.

Test Results:

The ELT meets the relative requirements of CFR Title 47, Part 2, Subpart N, Section §2.1511.

6.1.2 Modulation Characteristics

Step (1) - Place the EPIRB directly on a metal ground plane, such as the shielded room floor.
Step (2) - Place a suitable receiving antenna at a convenient distance from the EPIRB and connect it to the input of the spectrum analyzer or receiver to observe the radiated signal from the EPIRB.
Step (3) - Set the spectrum analyzer or receiver controls as follows:

I.F. bandwidth: 300 kHz minimum

Video filter: OFF or as wide as possible

Amplitude scale: Linear

Frequency: 121.5 MHz

Scan width: 0 Hz

Step (4) - Connect the detected output of the spectrum analyzer or receiver to the input of the storage oscilloscope.
Step (5) - Set the oscilloscope controls as necessary, to allow the demodulated waveform to be viewed. The input signal is to be DC coupled.

(b) Measurement of audio frequencies.

Step (1) - Activate the EPIRB.
Step (2) - Trigger the oscilloscope and store at least one complete cycle of the audio waveform.
Step (3) - Measure the period (T) of the waveform. The period is the time difference between the half voltage points at the beginning and end of one complete cycle of the waveform. See Figure 2.
Step (4) - Calculate the frequency (F), where: F = 1/T.
Step (5) - Repeat steps 2 through 4 until the highest and lowest audio frequencies are found. (Note: The lowest and highest frequencies may occur several cycles before or after the transition from low to high frequency.)
Step (6) - Determine the audio frequency range (Frange), where:

Frange = Fhigh - Flow

Step (7) - Record instrument settings and the lowest and highest audio frequencies. Record the audio frequency range in Hertz.
Step (8) - Repeat steps 1-8, above, for 243 MHz.

(c) Modulation factor.

Step (1) - Activate the EPIRB.
Step (2) - Trigger the oscilloscope and store at least one complete cycle of the audio waveform. The input signal is to be DC coupled or erroneous results will be obtained.
Step (3) - Measure the maximum voltage (Vmax), and the minimum voltage (Vmin) for the cycle. The modulation factor (M) is calculated from the following formula:

M = Vmax - Vmin / Vmax + Vmin

Modulation Characteristics (Continued)

Step (4) - Repeat steps 2 and 3 until the lowest modulation factor is found.
Step (5) - Record instrument settings and the lowest modulation factor, expressed as a ratio between 0 and 1.
Step (6) - Repeat the above measurements for 243 MHz.

(d) Modulation duty cycle.

Step (1) - Activate the EPIRB.
Step (2) - Trigger the oscilloscope and store at least one complete cycle of the audio waveform.
Step (3) - Measure the period (T) of the waveform. The period is the time difference between the half voltage points at the beginning and end of one cycle of the waveform. See Figure 2.
Step (4) - Measure the pulse width (tp) of the waveform. The pulse width is the time difference between the half voltage points on the rising and falling portions of the waveform. See Figure 2.
Step (5) - Calculate the duty cycle (D) as follows:

$D = tp/T$

Step (6) - Repeat steps 2 through 5 a sufficient number of times to determine the highest and lowest duty cycles.
Step (7) - Record instrument settings and the highest and lowest duty cycles in percent.
Step (8) - Repeat steps 1-7 for 243 MHz.

(e) Sweep repetition rate.

Step (1) - Connect a speaker to the detected output of the spectrum analyzer or receiver so the audio frequencies are audible. Alternatively, an FM radio tuned to 108 MHz placed in the vicinity of the EPIRB may be used.
Step (2) - Activate the EPIRB.
Step (3) - Time the number of audio sweeps (N) for a one minute interval.
Step (4) - Calculate the audio sweep rate (R) using R = N/60.
Step (5) - Record instrument settings and the sweep repetition rate in Hertz.

Test Results:

The ELT meets the relative requirements of CFR Title 47, Part 2, Subpart N, Section §2.1513.

6.1.3 Spectral Measurements

Step (1) - Place the EPIRB directly on a metal ground plane, such as the shielded room floor. The EPIRB should be powered by its own internal battery with its standard antenna attached and deployed.
Step (2) - Place a suitable receiving antenna at a convenient distance from the EPIRB and connect it to the input of the spectrum analyzer to observe the radiated signal from the EPIRB. A signal generator and frequency counter capable of operating at 121.5 and 243 MHz are also required for these tests.

(b) Occupied bandwidth test.

Step (1) - Activate the EPIRB and observe the fundamental frequency on a spectrum analyzer. Adjust location of receiving antenna and spectrum analyzer controls to obtain a suitable signal level (i.e., a level which will not overload the spectrum analyzer, but is far enough above the noise floor to allow determination of whether or not the sidebands are attenuated by at least the amount required in the rules.)
Step (2) - Set spectrum analyzer controls as follows:

I.F. bandwidth 10 kHz

Video filter: OFF or as wide as possible

Scan time: 100 ms./div.

Amplitude scale: 10 dB/div.

Scan width: 20 kHz/div.

Center frequency: 121.5 MHz

Step (3) - Record the signal level in dBm.
Step (4) - Calculate the mean power reference level by adding 10 log10 (D), where D is the modulation duty cycle determined in §2.1513(d), to the recorded signal level.
Step (5) - Set spectrum analyzer controls as follows:

I.F. bandwidth 100 Hz

Video filter: OFF or as wide as possible

Scan time: 10 sec./div.

Amplitude scale: 10 dB/div.

Scan width: 20 kHz div.

Step (6) - Check the modulation sidebands for compliance with the required attenuation below the mean power reference level specified in §80.211 of the Rules.
Step (7) - Record how the test was performed, instrument settings and the occupied bandwidth in kHz and the 3 dB bandwidth of the carrier in Hz.
Step (8) - Repeat steps 1 through 7 for the signal at 243 MHz.

(c) Signal enhancement test. The set-up specified in §2.1515(a) above is to be used in this method of measuring signal enhancement. Other methods may be used if shown to give results equivalent to or more accurate than this method.

Spectral Measurements (Continued)

Step (1) - Activate the EPIRB and locate the carrier frequency at 121.5 MHz on the spectrum analyzer. Adjust location of receiving antenna and spectrum analyzer controls to obtain a suitable signal level (i.e., a level which will not overload the analyzer, but is far enough above the noise floor to allow sidebands at least 40 dB below the carrier to be viewed).
Step (2) - Set the spectrum analyzer controls as follows:

I.F. bandwidth 10 kHz

Video filter: OFF or as wide as possible

Scan time: 100 ms. div.

Amplitude scale: 5 dB div.

Scan width: 10 kHz/div.

Center frequency: 121.5 MHz

Step (3) - Record the amplitude in dBm.

Step (4) - Calculate the total power output by adding 10 log(D), where D is the modulation duty cycle determined in §2.1513(d), to the recorded signal level.

Step (5) - Set the spectrum analyzer controls as follows:

I.F. bandwidth 60 Hz or less

Video filter: OFF or as wide as possible

Scan time: 10 sec./div.

Amplitude scale 5 dB/div.

Scan width: 20 Hz/div.

Center frequency: 121.5 MHz

Step (6) - Measure and record the carrier power in dBm as displayed on the spectrum analyzer.

Step (7) - Calculate the ratio of carrier power to total power from steps 4 and 6 using the following formula:

carrier power = log 10-1 (dBc - dBT)

total power (10)

dBc = carrier power in step 6

dBT = total power in step 4

Step (8) - Record instrument settings, sample calculation and the percent of power within ±30 Hz at 121.5 MHz or 60 Hz at 243 MHz of the carrier frequency.
Step (9) - Repeat the above measurement steps 1 through 8 for 243 MHz. For the higher frequency, the I.F. bandwidth in step 5 must be 120 Hz or less.

Spectral Measurements (Continued)

(d) Carrier frequency test. The set-up specified in §2.1515(a) above is to be used in measuring the carrier frequency.

Step (1) - Activate the EPIRB and locate the 121.5 MHz signal on the spectrum analyzer. Adjust location of receiving antenna and spectrum analyzer controls to obtain a suitable signal level.
Step (2) - Set the spectrum analyzer controls as follows:

I.F. bandwidth 100 Hz

Video filter: OFF or as wide as possible

Scan time: 10 sec./div.

Amplitude scale: 10 dB/div.

Scan width: 20 Hz/div.

Center frequency: 121.5 MHz

Step (3) - Combine the output of the signal generator with the EPIRB signal at the input to the spectrum analyzer.

Step (4) - Adjust amplitude and frequency of signal generator output to determine center of carrier frequency component.

Step (5) - Measure signal generator frequency with frequency counter with accuracy of 5 PPM or better and record as carrier frequency.

Step (6) - If applicable, change the type of modulation of the EPIRB and record the shift in carrier frequency as observed on the spectrum analyzer display. Step

(7) - Repeat the above measurement steps 1 through 6 for 243 MHz.

Test Results:

The ELT meets the relative requirements of CFR Title 47, Part 2, Subpart N, Section §2.1515.

7. CONCLUSIONS

The Emergency Locator Transmitter (ELT) Model: AK-451 meets all of the Code of Federal Regulations Title 47, Part 2 Subpart N Sections §2.1511 "Measurements of Radiated Emissions, §2.1513 "Measurements of Modulation Characteristics" and §2.1515 "Spectral Measurements" of the FCC rules.

APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

LABORATORY ACCREDITATIONS AND RECOGNITIONS

NVLAP CODES 200063-0, 200528-0, 200527-0

For US, Canada, Australia/New Zealand, Taiwan and the European Union, Compatible Electronics is currently accredited by NVLAP to ISO/IEC 17025 an ISO 9002 equivalent. Please follow the link to the NIST site for each of our facilities NVLAP certificate and scope of accreditation.

Silverado/Lake Forest Division: http://ts.nist.gov/ts/htdocs/210/214/scopes/2005270.htm
Brea Division: http://ts.nist.gov/ts/htdocs/210/214/scopes/2005280.htm
Agoura Division: http://ts.nist.gov/ts/htdocs/210/214/scopes/2000630.htm

Compatible Electronics has been accredited by ANSI and appointed by the FCC to serve as a Telecommunications Certification Body (TCB). Compatible Electronics ANSI TCB listing can be found at: http://www.ansi.org/public/ca/ansi_cp.html

Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for EMC under the US/EU Mutual Recognition Agreement (MRA). Compatible Electronics NIST US/EU CAB listing can be found at: http://ts.nist.gov/ts/htdocs/210/gsig/emc-cabs-mar02.pdf

Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for Taiwan/BSMI under the US/APEC (Asia-Pacific Economic Cooperation) Mutual Recognition Agreement (MRA). Compatible Electronics NIST US/APEC CAB listing can be found at: http://ts.nist.gov/ts/htdocs/210/gsig/apec/bsmi-cabs-may02.pdf

World Wide Market Access with Nemko

Compatible Electronics has been validated by NEMKO against ISO/IEC 17025 under the NEMKO EMC Laboratory Authorization (ELA) program to all EN standards required by the European Union (EU) EMC Directive 89/336/EEC. Please follow the link to the Compatible Electronics' web site for each of our facilities NEMKO ELA certificate and scope of accreditation. http://www.celectronics.com/certs.htm

We are also certified/listed for IT products by the following country/agency:

Compatible Electronics VCCI listing can be found at:
http://www.vcci.or.jp/vcci_e/member/tekigo/setsubi_index_id.html

Just type "Compatible Electronics" into the Keyword search box.

Compatible Electronics FCC listing can be found at:
https://gullfoss2.fcc.gov/prod/oet/index_ie.html

Just type "Compatible Electronics" into the Test Firms search box.

Industry Canada Industrie Canada

Compatible Electronics IC listing can be found at:
http://spectrum.ic.gc.ca/~cert/labs/oats_lab_c_e.html

APPENDIX B

DATA SHEETS AND PHOTOS

MEASUREMENTS OF RADIATED EMISSIONS

Report Number: C70223J2	C61222M1	
Standards:	FCC	

DATE	**12/29/2006**
MODEL	**AK-451**
TEST DIST.	**30 meters**
LAB	**M**
M/N:	**451017-1B**

COMPANY	**Ameriking**	
EUT : Emergency Locator Transmitter		
S/N	**E1**	
TEST ENGINEER Eli McClure		
ANTENNA	**Whip 1 Fixed**	
REFERENCE LEVEL READINGS		

DELTA = REF - READING

PERP MEASUREMENTS WITH AMERIKING ANTENNA					
	SIGNAL	**ANTENNA**	**REFERENCE LEVEL WITH VERTICAL DIPOLE**		
	GENERATOR		**METER**	**METER**	
FREQUENCY (MHz)	**OUTPUT (dBuV)**	**HEIGHT (inches)**	**READING (dBm)**	**READING (dBm)**	**TEST RESULTS**
121.5	80	24.3	REF: 3.9dBm with 75mW input (18.75dBm input)	REF: 2.14dBm with 50mW input (16.99dBm input)	
FREQUENCY (MHz)	**AZIMUTH (degrees)**	**HEIGHT (inches)**	**PERP READING / DELTA (dBm)**	**PERP READING / DELTA (dBm)**	
121.5	0	24.3	7 / -3.1	7 / -4.86	Pass
121.5	10	24.3	6.9 / -3	6.9 / -4.76	Pass
121.5	20	24.3	7 / -3.1	7 / -4.86	Pass
121.5	30	24.3	7 / -3.1	7 / -4.86	Pass
121.5	40	24.3	7 / -3.1	7 / -4.86	Pass
121.5	50	24.3	7 / -3.1	7 / -4.86	Pass
121.5	60	24.3	7 / -3.1	7 / -4.86	Pass
121.5	70	24.3	7 / -3.1	7 / -4.86	Pass
121.5	80	24.3	7 / -3.1	7 / -4.86	Pass
121.5	90	24.3	7 / -3.1	7 / -4.86	Pass
121.5	100	24.3	7 / -3.1	7 / -4.86	Pass
121.5	110	24.3	7 / -3.1	7 / -4.86	Pass
121.5	120	24.3	7 / -3.1	7 / -4.86	Pass
121.5	130	24.3	7 / -3.1	7 / -4.86	Pass
121.5	140	24.3	7 / -3.1	7 / -4.86	Pass
121.5	150	24.3	7 / -3.1	7 / -4.86	Pass
121.5	160	24.3	7 / -3.1	7 / -4.86	Pass
121.5	170	24.3	6.9 / -3	6.9 / -4.76	Pass
121.5	180	24.3	7 / -3.1	7 / -4.86	Pass
121.5	190	24.3	7 / -3.1	7 / -4.86	Pass
121.5	200	24.3	7 / -3.1	7 / -4.86	Pass
121.5	210	24.3	7 / -3.1	7 / -4.86	Pass
121.5	220	24.3	7 / -3.1	7 / -4.86	Pass
121.5	230	24.3	7 / -3.1	7 / -4.86	Pass
121.5	240	24.3	6.9 / -3	7 / -4.86	Pass
121.5	250	24.3	6.9 / -3	7 / -4.86	Pass
121.5	260	24.3	7 / -3.1	7 / -4.86	Pass
121.5	270	24.3	7 / -3.1	7 / -4.86	Pass
121.5	280	24.3	7 / -3.1	7 / -4.86	Pass
121.5	290	24.3	7 / -3.1	7 / -4.86	Pass
121.5	300	24.3	7 / -3.1	7 / -4.86	Pass
121.5	310	24.3	6.9 / -3	6.9 / -4.76	Pass
121.5	320	24.3	6.9 / -3	6.9 / -4.76	Pass
121.5	330	24.3	6.8 / -2.9	6.8 / -4.66	Pass
121.5	340	24.3	6.8 / -2.9	6.8 / -4.66	Pass
121.5	350	24.3	6.9 / -3	6.9 / -4.76	Pass

Report Number: C70223J2	C61222M1	
Standards: FCC		

MEASUREMENTS OF RADIATED EMISSIONS

COMPANY	Ameriking	
EUT : Emergency Locator Transmitter		
S/N	E1	
TEST ENGINEER Eli McClure		
ANTENNA	Whip 2 Fixed	
REFERENCE LEVEL READINGS		

DATE	12/29/2006
MODEL	AK-451
TEST DIST.	30 meters
LAB	M
M/N:	451017-1A

DELTA = REF - READING

PERP MEASUREMENTS WITH AMERIKING ANTENNA					
	SIGNAL GENERATOR	ANTENNA	REFERENCE LEVEL WITH VERTICAL DIPOLE		
FREQUENCY (MHz)	OUTPUT (dBuV)	HEIGHT (inches)	METER READING (dBm)	METER READING (dBm)	TEST RESULTS
121.5	80	24.3	REF: 3.9dBm with 75mW input (18.75mW input)	REF: 2.14dBm with 50mW input (16.99dBm input)	
FREQUENCY (MHz)	AZIMUTH (degrees)	HEIGHT (inches)	PERP READING / DELTA (dBm)	PERP READING / DELTA (dBm)	
121.5	0	24.3	5 / -1.1	5 / -2.86	Pass
121.5	10	24.3	4.9 / -1	4.9 / -2.76	Pass
121.5	20	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	30	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	40	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	50	24.3	5.2 / -1.3	5.2 / -3.06	Pass
121.5	60	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	70	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	80	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	90	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	100	24.3	5 / -1.1	5 / -2.86	Pass
121.5	110	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	120	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	130	24.3	4.8 / -0.9	4.8 / -2.66	Pass
121.5	140	24.3	5 / -1.1	5 / -2.86	Pass
121.5	150	24.3	4.8 / -0.9	4.8 / -2.66	Pass
121.5	160	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	170	24.3	4.7 / -0.8	4.7 / -2.56	Pass
121.5	180	24.3	5 / -1.1	5 / -2.86	Pass
121.5	190	24.3	4.9 / -1	4.9 / -2.76	Pass
121.5	200	24.3	4.8 / -0.9	4.8 / -2.66	Pass
121.5	210	24.3	5 / -1.1	5 / -2.86	Pass
121.5	220	24.3	5 / -1.1	5 / -2.86	Pass
121.5	230	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	240	24.3	5 / -1.1	5 / -2.86	Pass
121.5	250	24.3	5.2 / -1.3	5.2 / -3.06	Pass
121.5	260	24.3	5 / -1.1	5 / -2.86	Pass
121.5	270	24.3	5.2 / -1.3	5.2 / -3.06	Pass
121.5	280	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	290	24.3	5.2 / -1.3	5.2 / -3.06	Pass
121.5	300	24.3	5.3 / -1.4	5.3 / -3.16	Pass
121.5	310	24.3	5.2 / -1.3	5.2 / -3.06	Pass
121.5	320	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	330	24.3	5 / -1.1	5 / -2.86	Pass
121.5	340	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	350	24.3	5 / -1.1	5 / -2.86	Pass

Report Number: C70223J2	C61222M1	
Standards: FCC		

MEASUREMENTS OF RADIATED EMISSIONS

COMPANY	Ameriking	
EUT : Emergency Locator Transmitter		
S/N	E1	
TEST ENGINEER Eli McClure		
ANTENNA	Whip 2 Fixed	
REFERENCE LEVEL READINGS		

DATE	12/29/2006
MODEL	AK-451
TEST DIST.	30 meters
LAB	M
M/N:	451017-1A

DELTA = REF - READING

PERP MEASUREMENTS WITH AMERIKING ANTENNA					
	SIGNAL GENERATOR	ANTENNA	REFERENCE LEVEL WITH VERTICAL DIPOLE		
FREQUENCY (MHz)	OUTPUT (dBuV)	HEIGHT (inches)	METER READING (dBm)	METER READING (dBm)	
243	81.6	12.15	REF: -0.9dBm with 75mW input (18.75mW input)	REF: -2.66dBm with 50mW input (16.99dBm input)	TEST RESULTS
FREQUENCY (MHz)	AZIMUTH (degrees)	HEIGHT (inches)	PERP READING / DELTA (dBm)	PERP READING / DELTA (dBm)	
243	0	12.15	0.9 / -1.8	0.9 / -3.56	Pass
243	10	12.15	0.6 / -1.5	0.6 / -3.26	Pass
243	20	12.15	0.5 / -1.4	0.5 / -3.16	Pass
243	30	12.15	0.5 / -1.4	0.5 / -3.16	Pass
243	40	12.15	0.5 / -1.4	0.5 / -3.16	Pass
243	50	12.15	0.3 / -1.2	0.3 / -2.96	Pass
243	60	12.15	0.2 / -1.1	0.2 / -2.86	Pass
243	70	12.15	-0.1 / -0.8	-0.1 / -2.56	Pass
243	80	12.15	-0.1 / -0.8	-0.1 / -2.56	Pass
243	90	12.15	0.3 / -1.2	0.3 / -2.96	Pass
243	100	12.15	0.5 / -1.4	0.5 / -3.16	Pass
243	110	12.15	0.9 / -1.8	0.9 / -3.56	Pass
243	120	12.15	1.7 / -2.6	1.7 / -4.36	Pass
243	130	12.15	1.3 / -2.2	1.3 / -3.96	Pass
243	140	12.15	1.8 / -2.7	1.8 / -4.46	Pass
243	150	12.15	1.9 / -2.8	1.9 / -4.56	Pass
243	160	12.15	2 / -2.9	2 / -4.66	Pass
243	170	12.15	2.1 / -3	2.1 / -4.76	Pass
243	180	12.15	2.2 / -3.1	2.2 / -4.86	Pass
243	190	12.15	2.1 / -3	2.1 / -4.76	Pass
243	200	12.15	2 / -2.9	2 / -4.66	Pass
243	210	12.15	2 / -2.9	2 / -4.66	Pass
243	220	12.15	1.6 / -2.5	1.6 / -4.26	Pass
243	230	12.15	1.5 / -2.4	1.5 / -4.16	Pass
243	240	12.15	1.1 / -2	1.1 / -3.76	Pass
243	250	12.15	0.9 / -1.8	0.9 / -3.56	Pass
243	260	12.15	0.4 / -1.3	0.4 / -3.06	Pass
243	270	12.15	0.3 / -1.2	0.3 / -2.96	Pass
243	280	12.15	0.2 / -1.1	0.2 / -2.86	Pass
243	290	12.15	0.2 / -1.1	0.2 / -2.86	Pass
243	300	12.15	0.2 / -1.1	0.2 / -2.86	Pass
243	310	12.15	0.4 / -1.3	0.4 / -3.06	Pass
243	320	12.15	0.2 / -1.1	0.2 / -2.86	Pass
243	330	12.15	0.4 / -1.3	0.4 / -3.06	Pass
243	340	12.15	0.6 / -1.5	0.6 / -3.26	Pass
243	350	12.15	0.7 / -1.6	0.7 / -3.36	Pass

Report Number: C70223J2	C61222M1	
Standards: FCC		

MEASUREMENTS OF RADIATED EMISSIONS

COMPANY	Ameriking
EUT : Emergency Locator Transmitter	
S/N	E1
TEST ENGINEER Eli McClure	
ANTENNA	Rod Antenna
REFERENCE LEVEL READINGS	

DATE	12/29/2006
MODEL	AK-451
TEST DIST.	30 meters
LAB	M
M/N:	451017-2A

DELTA = REF - READING

PERP MEASUREMENTS WITH AMERIKING ANTENNA

	SIGNAL GENERATOR	ANTENNA	REFERENCE LEVEL WITH VERTICAL DIPOLE		
			METER READING (dBm)	METER READING (dBm)	
FREQUENCY (MHz)	OUTPUT (dBuV)	HEIGHT (inches)			TEST RESULTS
121.5	80	24.3	REF: 3.9dBm with 75mW input (18.75mW input)	REF: 2.14dBm with 50mW input (16.99dBm input)	
FREQUENCY (MHz)	AZIMUTH (degrees)	HEIGHT (inches)	PERP READING / DELTA (dBm)	PERP READING / DELTA (dBm)	
121.5	0	24.3	6.5 / -2.6	6.5 / -4.36	Pass
121.5	10	24.3	6.5 / -2.6	6.5 / -4.36	Pass
121.5	20	24.3	6.4 / -2.5	6.4 / -4.26	Pass
121.5	30	24.3	6.5 / -2.6	6.5 / -4.36	Pass
121.5	40	24.3	6.5 / -2.6	6.5 / -4.36	Pass
121.5	50	24.3	6.5 / -2.6	6.5 / -4.36	Pass
121.5	60	24.3	6.4 / -2.5	6.4 / -4.26	Pass
121.5	70	24.3	6.4 / -2.5	6.4 / -4.26	Pass
121.5	80	24.3	6.5 / -2.6	6.5 / -4.36	Pass
121.5	90	24.3	6.5 / -2.6	6.5 / -4.36	Pass
121.5	100	24.3	6.6 / -2.7	6.6 / -4.46	Pass
121.5	110	24.3	6.6 / -2.7	6.6 / -4.46	Pass
121.5	120	24.3	6.5 / -2.6	6.5 / -4.36	Pass
121.5	130	24.3	6.6 / -2.7	6.6 / -4.46	Pass
121.5	140	24.3	6.6 / -2.7	6.6 / -4.46	Pass
121.5	150	24.3	6.6 / -2.7	6.6 / -4.46	Pass
121.5	160	24.3	6.6 / -2.7	6.6 / -4.46	Pass
121.5	170	24.3	6.6 / -2.7	6.6 / -4.46	Pass
121.5	180	24.3	6.6 / -2.7	6.6 / -4.46	Pass
121.5	190	24.3	6.6 / -2.7	6.6 / -4.46	Pass
121.5	200	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	210	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	220	24.3	6.6 / -2.7	6.6 / -4.46	Pass
121.5	230	24.3	6.6 / -2.7	6.6 / -4.46	Pass
121.5	240	24.3	6.6 / -2.7	6.6 / -4.46	Pass
121.5	250	24.3	6.6 / -2.7	6.6 / -4.46	Pass
121.5	260	24.3	6.6 / -2.7	6.6 / -4.46	Pass
121.5	270	24.3	6.6 / -2.7	6.6 / -4.46	Pass
121.5	280	24.3	6.5 / -2.6	6.5 / -4.36	Pass
121.5	290	24.3	6.5 / -2.6	6.5 / -4.36	Pass
121.5	300	24.3	6.5 / -2.6	6.5 / -4.36	Pass
121.5	310	24.3	6.5 / -2.6	6.5 / -4.36	Pass
121.5	320	24.3	6.4 / -2.5	6.4 / -4.26	Pass
121.5	330	24.3	6.4 / -2.5	6.4 / -4.26	Pass
121.5	340	24.3	6.4 / -2.5	6.4 / -4.26	Pass
121.5	350	24.3	6.4 / -2.5	6.4 / -4.26	Pass

Report Number: C70223J2	C61222M1	
Standards: FCC		

MEASUREMENTS OF RADIATED EMISSIONS

COMPANY	Ameriking	
EUT : Emergency Locator Transmitter		
S/N	E1	
TEST ENGINEER Eli McClure		
ANTENNA	Rod Antenna	
REFERENCE LEVEL READINGS		

DATE	12/29/2006
MODEL	AK-451
TEST DIST.	30 meters
LAB	M
M/N:	451017-2A

DELTA = REF - READING

PERP MEASUREMENTS WITH AMERIKING ANTENNA					
	SIGNAL GENERATOR	ANTENNA	REFERENCE LEVEL WITH VERTICAL DIPOLE		
FREQUENCY (MHz)	OUTPUT (dBuV)	HEIGHT (inches)	METER READING (dBm)	METER READING (dBm)	
243	81.6	12.15	REF: -0.9dBm with 75mW input (18.75mW input)	REF: -2.66dBm with 50mW input (16.99dBm input)	TEST RESULTS
FREQUENCY (MHz)	AZIMUTH (degrees)	HEIGHT (inches)	PERP READING / DELTA (dBm)	PERP READING / DELTA (dBm)	
243	0	12.15	3 / -3.9	3 / -5.66	Pass
243	10	12.15	3.1 / -4	3.1/ -5.76	Pass
243	20	12.15	3.1 / -4	3.1/ -5.76	Pass
243	30	12.15	2.9 / -3.8	2.9 / -5.56	Pass
243	40	12.15	2.8 / -3.7	2.8 / -5.46	Pass
243	50	12.15	2.8 / -3.7	2.8 / -5.46	Pass
243	60	12.15	2.8 / -3.7	2.8 / -5.46	Pass
243	70	12.15	2.9 / -3.8	2.9 / -5.56	Pass
243	80	12.15	2.9 / -3.8	2.9 / -5.56	Pass
243	90	12.15	2.6 / -3.5	2.6 / -5.26	Pass
243	100	12.15	2.9 / -3.8	2.9 / -5.56	Pass
243	110	12.15	3.2 / -4.1	3.2 / -5.86	Pass
243	120	12.15	3.4 / -4.3	3.4 / -6.06	Pass
243	130	12.15	3.5 / -4.4	3.5 / -6.16	Pass
243	140	12.15	3.9 / -4.8	3.9 / -6.56	Pass
243	150	12.15	4.2 / -5.1	4.2 / -6.86	Pass
243	160	12.15	4.5 / -5.4	4.5 / -7.16	Pass
243	170	12.15	4.6 / -5.5	4.6 / -7.26	Pass
243	180	12.15	4.4 / -5.3	4.4 / -7.06	Pass
243	190	12.15	4.1 / -5	4.1 / -6.76	Pass
243	200	12.15	3.8 / -4.7	3.8 / -6.46	Pass
243	210	12.15	3.7 / -4.6	3.7 / -6.36	Pass
243	220	12.15	3.5 / -4.4	3.5 / -6.16	Pass
243	230	12.15	3.3 / -4.2	3.3 / -5.96	Pass
243	240	12.15	2.9 / -3.8	2.9 / -5.56	Pass
243	250	12.15	2.6 / -3.5	2.6 / -5.26	Pass
243	260	12.15	1.9 / -2.8	1.9 / -4.56	Pass
243	270	12.15	1.6 / -2.5	1.6 / -4.26	Pass
243	280	12.15	0.9 / -1.8	0.9 / -3.56	Pass
243	290	12.15	0.7 / -1.6	0.7 / -3.36	Pass
243	300	12.15	0.7 / -1.6	0.7 / -3.36	Pass
243	310	12.15	0.7 / -1.6	0.7 / -3.36	Pass
243	320	12.15	1 / -1.9	1 / -3.66	Pass
243	330	12.15	1.6 / -2.5	1.6 / -4.26	Pass
243	340	12.15	2.3 / -3.2	2.3 / -4.96	Pass
243	350	12.15	2.9 / -3.8	2.9 / -5.56	Pass

Report Number: C70223J2	C61222M1	
Standards: FCC		

MEASUREMENTS OF RADIATED EMISSIONS

COMPANY	Ameriking	
EUT : Emergency Locator Transmitter		
S/N	E1	
TEST ENGINEER Eli McClure		
ANTENNA	Blade Antenna	
REFERENCE LEVEL READINGS		

DATE	12/29/2006
MODEL	AK-451
TEST DIST.	30 meters
LAB	M
M/N:	451017-3A

DELTA = REF - READING

PERP MEASUREMENTS WITH AMERIKING ANTENNA					
	SIGNAL GENERATOR	ANTENNA	REFERENCE LEVEL WITH VERTICAL DIPOLE		
FREQUENCY (MHz)	OUTPUT (dBuV)	HEIGHT (inches)	METER READING (dBm)	METER READING (dBm)	TEST RESULTS
121.5	80	24.3	REF: 3.9dBm with 75mW input (18.75mW input)	REF: 2.14dBm with 50mW input (16.99dBm input)	
FREQUENCY (MHz)	AZIMUTH (degrees)	HEIGHT (inches)	PERP READING / DELTA (dBm)	PERP READING / DELTA (dBm)	
121.5	0	24.3	4.8 / -0.9	4.8 / -2.66	Pass
121.5	10	24.3	5.0 / -1.1	5.0 / -2.86	Pass
121.5	20	24.3	4.9 / -1	4.9 / -2.76	Pass
121.5	30	24.3	5.0 / -1.1	5 / -2.86	Pass
121.5	40	24.3	4.8 / -0.9	4.8 / -2.66	Pass
121.5	50	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	60	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	70	24.3	5.3 / -1.4	5.3 / -3.16	Pass
121.5	80	24.3	5.2 / -1.3	5.2 / -3.06	Pass
121.5	90	24.3	5.2 / -1.3	5.2 / -3.06	Pass
121.5	100	24.3	5.2 / -1.3	5.2 / -3.06	Pass
121.5	110	24.3	5.4 / -1.3	5.4 / -3.26	Pass
121.5	120	24.3	5.4 / -1.3	5.4 / -3.26	Pass
121.5	130	24.3	5.3 / -1.4	5.3 / -3.16	Pass
121.5	140	24.3	5.4 / -1.3	5.4 / -3.26	Pass
121.5	150	24.3	5.4 / -1.3	5.4 / -3.26	Pass
121.5	160	24.3	5.3 / -1.4	5.3 / -3.16	Pass
121.5	170	24.3	5.3 / -1.4	5.3 / -3.16	Pass
121.5	180	24.3	5.2 / -1.3	5.2 / -3.06	Pass
121.5	190	24.3	5.2 / -1.3	5.2 / -3.06	Pass
121.5	200	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	210	24.3	5.3 / -1.4	5.3 / -3.16	Pass
121.5	220	24.3	5.2 / -1.3	5.2 / -3.06	Pass
121.5	230	24.3	5.2 / -1.3	5.2 / -3.06	Pass
121.5	240	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	250	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	260	24.3	5.0 / -1.1	5.0 / -2.86	Pass
121.5	270	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	280	24.3	5.0 / -1.1	5.0 / -2.86	Pass
121.5	290	24.3	5.1 / -1.2	5.1 / -2.96	Pass
121.5	300	24.3	5.0 / -1.1	5.0 / -2.86	Pass
121.5	310	24.3	4.8 / -0.9	4.8 / -2.66	Pass
121.5	320	24.3	4.8 / -0.9	4.8 / -2.66	Pass
121.5	330	24.3	4.8 / -0.9	4.8 / -2.66	Pass
121.5	340	24.3	4.7 / -0.8	4.7 / -2.56	Pass
121.5	350	24.3	4.8 / -0.9	4.8 / -2.66	Pass

Report Number: C70223J2	C61222M1	
Standards: FCC		

MEASUREMENTS OF RADIATED EMISSIONS

COMPANY	Ameriking	
EUT : Emergency Locator Transmitter		
S/N	E1	
TEST ENGINEER Eli McClure		
ANTENNA	Blade Antenna	
REFERENCE LEVEL READINGS		

DATE	12/29/2006
MODEL	AK-451
TEST DIST.	30 meters
LAB	M
M/N:	451017-3A

DELTA = REF - READING

PERP MEASUREMENTS WITH AMERIKING ANTENNA					
	SIGNAL GENERATOR	ANTENNA	REFERENCE LEVEL WITH VERTICAL DIPOLE		
FREQUENCY (MHz)	OUTPUT (dBuV)	HEIGHT (inches)	METER READING (dBm)	METER READING (dBm)	
243	81.6	12.15	REF: -0.9dBm with 75mW input (18.75mW input)	REF: -2.66dBm with 50mW input (16.99dBm input)	TEST RESULTS
FREQUENCY (MHz)	AZIMUTH (degrees)	HEIGHT (inches)	PERP READING / DELTA (dBm)	PERP READING / DELTA (dBm)	
243	0	12.15	1.7 / -2.6	1.7 / -4.36	Pass
243	10	12.15	1.7 / -2.6	1.7 / -4.36	Pass
243	20	12.15	1.2 / -2.1	1.2 / -3.86	Pass
243	30	12.15	1.1 / -2	1.1 / -3.76	Pass
243	40	12.15	1 / -1.9	1 / -3.66	Pass
243	50	12.15	0.6 / -1.5	0.6 / -3.26	Pass
243	60	12.15	0.1 / -1	0.1 / -2.76	Pass
243	70	12.15	-1 / 0.1	-1 / -1.66	Pass
243	80	12.15	-1.2 / 0.3	-1.2 / -1.46	Pass
243	90	12.15	-1.8 / 0.9	-1.8 / -0.86	Pass
243	100	12.15	-1.9 / 1	-1.9 / -0.76	Pass
243	110	12.15	-1.9 / 1	-1.9 / -0.76	Pass
243	120	12.15	-1.6 / 0.7	-1.6 / -1.06	Pass
243	130	12.15	-1.2 / 0.3	-1.2 / -1.46	Pass
243	140	12.15	-0.6 / -0.3	-0.6 / -2.06	Pass
243	150	12.15	0 / -0.9	0 / -2.66	Pass
243	160	12.15	0.4 / -1.3	0.4 / -3.06	Pass
243	170	12.15	0.9 / -1.8	0.9 / -3.56	Pass
243	180	12.15	0.7 / -1.6	0.7 / -3.36	Pass
243	190	12.15	0.4 / -1.3	0.4 / -3.06	Pass
243	200	12.15	0.2 / -1.1	0.2 / -2.86	Pass
243	210	12.15	0.1 / -1	0.1 / -2.76	Pass
243	220	12.15	0 / -0.9	0 / -2.66	Pass
243	230	12.15	-0.2 / -0.7	0.2 / -2.46	Pass
243	240	12.15	-0.4 / -0.5	-0.4 / -2.26	Pass
243	250	12.15	-1.1 / 0.2	-1.1 / -1.56	Pass
243	260	12.15	-1.2 / 0.3	-1.2 / -1.46	Pass
243	270	12.15	-1.5 / 0.6	-1.5 / -1.16	Pass
243	280	12.15	-1.4 / 0.5	-1.4 / -1.26	Pass
243	290	12.15	-0.9 / 0	-0.9 / -1.76	Pass
243	300	12.15	-0.3 / -0.6	-0.3 / -2.36	Pass
243	310	12.15	0.3 / -1.2	0.3 / -2.96	Pass
243	320	12.15	0.7 / -1.6	0.7 / -3.36	Pass
243	330	12.15	1.3 / -2.2	1.3 / -3.96	Pass
243	340	12.15	1.2 / -2.1	1.2 / -3.86	Pass
243	350	12.15	1.8 / 2.7	1.8 / -4.46	Pass

Report Number: C70223J2	C61222M1	
Standards: FCC		

MEASUREMENTS OF RADIATED EMISSIONS

COMPANY	Ameriking	
EUT : Emergency Locator Transmitter		
S/N	E1	
TEST ENGINEER Eli McClure		
ANTENNA	Whip Portable	
REFERENCE LEVEL READINGS		

DATE	12/29/2006
MODEL	AK-451
TEST DIST.	30 meters
LAB	M
M/N:	451017-4S

DELTA = REF - READING

PERP MEASUREMENTS WITH AMERIKING ANTENNA

	SIGNAL GENERATOR	ANTENNA	REFERENCE LEVEL WITH VERTICAL DIPOLE		
			METER READING (dBm)	METER READING (dBm)	
FREQUENCY (MHz)	OUTPUT (dBuV)	HEIGHT (inches)	REF: 3.9dBm with 75mW input (18.75mW input)	REF: 2.14dBm with 50mW input (16.99dBm input)	TEST RESULTS
121.5	80	24.3			
FREQUENCY (MHz)	AZIMUTH (degrees)	HEIGHT (inches)	PERP READING / DELTA (dBm)	PERP READING / DELTA (dBm)	
121.5	0	24.3	6.8 / -2.9	6.8 / -4.66	Pass
121.5	10	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	20	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	30	24.3	6.8 / -2.9	6.8 / -4.66	Pass
121.5	40	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	50	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	60	24.3	6.6 / -2.7	6.6 / -4.46	Pass
121.5	70	24.3	6.8 / -2.9	6.8 / -4.66	Pass
121.5	80	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	90	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	100	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	110	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	120	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	130	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	140	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	150	24.3	6.8 / -2.9	6.8 / -4.66	Pass
121.5	160	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	170	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	180	24.3	6.6 / -2.7	6.6 / -4.46	Pass
121.5	190	24.3	6.8 / -2.9	6.8 / -4.66	Pass
121.5	200	24.3	6.8 / -2.9	6.8 / -4.66	Pass
121.5	210	24.3	6.8 / -2.9	6.8 / -4.66	Pass
121.5	220	24.3	6.8 / -2.9	6.8 / -4.66	Pass
121.5	230	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	240	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	250	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	260	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	270	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	280	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	290	24.3	6.8 / -2.9	6.8 / -4.66	Pass
121.5	300	24.3	6.8 / -2.9	6.8 / -4.66	Pass
121.5	310	24.3	6.8 / -2.9	6.8 / -4.66	Pass
121.5	320	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	330	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	340	24.3	6.7 / -2.8	6.7 / -4.56	Pass
121.5	350	24.3	6.7 / -2.8	6.7 / -4.56	Pass

Report Number: C70223J2	C61222M1	
Standards: FCC		

MEASUREMENTS OF RADIATED EMISSIONS

COMPANY	Ameriking	
EUT : Emergency Locator Transmitter		
S/N	E1	
TEST ENGINEER Eli McClure		
ANTENNA	Whip Portable	
REFERENCE LEVEL READINGS		

DATE	12/29/2006
MODEL	AK-451
TEST DIST.	30 meters
LAB	M
M/N:	451017-4S

DELTA = REF - READING

PERP MEASUREMENTS WITH AMERIKING ANTENNA

	SIGNAL GENERATOR	ANTENNA	REFERENCE LEVEL WITH VERTICAL DIPOLE		
			METER READING (dBm)	METER READING (dBm)	
FREQUENCY (MHz)	OUTPUT (dBuV)	HEIGHT (inches)	REF: -0.9dBm with 75mW input (18.75mW input)	REF: -2.66dBm with 50mW input (16.99dBm input)	TEST RESULTS
243	81.6	12.15			
FREQUENCY (MHz)	AZIMUTH (degrees)	HEIGHT (inches)	PERP READING / DELTA (dBm)	PERP READING / DELTA (dBm)	
243	0	12.15	4.6 / -5.5	4.6 / -7.26	Pass
243	10	12.15	4.5 / -5.4	4.5 / -7.16	Pass
243	20	12.15	4.6 / -5.5	4.6 / -7.26	Pass
243	30	12.15	4.6 / -5.5	4.6 / -7.26	Pass
243	40	12.15	4.5 / -5.4	4.5 / -7.16	Pass
243	50	12.15	4.5 / -5.4	4.5 / -7.16	Pass
243	60	12.15	4.6 / -5.5	4.6 / -7.26	Pass
243	70	12.15	4.6 / -5.5	4.6 / -7.26	Pass
243	80	12.15	4.5 / -5.4	4.5 / -7.16	Pass
243	90	12.15	4.4 / -5.3	4.4 / -7.06	Pass
243	100	12.15	4.4 / -5.3	4.4 / -7.06	Pass
243	110	12.15	4 / -4.9	4 / -6.66	Pass
243	120	12.15	3.9 / -4.8	3.9 / -6.56	Pass
243	130	12.15	4.1 / -5	4.1 / -6.76	Pass
243	140	12.15	3.8 / -4.7	3.8 / -6.46	Pass
243	150	12.15	3.7 / -4.6	3.7 / -6.36	Pass
243	160	12.15	3.6 / -4.5	3.6 / -6.26	Pass
243	170	12.15	3.7 / -4.6	3.7 / -6.36	Pass
243	180	12.15	4.1 / -5	4.1 / -6.76	Pass
243	190	12.15	3.7 / -4.6	3.7 / -6.36	Pass
243	200	12.15	3.9 / -4.8	3.9 / -6.56	Pass
243	210	12.15	4.2 / -5.1	4.2 / -6.86	Pass
243	220	12.15	4.2 / -5.1	4.2 / -6.86	Pass
243	230	12.15	4.3 / -5.2	4.3 / -6.96	Pass
243	240	12.15	4.2 / -5.1	4.2 / -6.86	Pass
243	250	12.15	4.1 / -5	4.1 / -6.76	Pass
243	260	12.15	4.3 / -5.2	4.3 / -6.96	Pass
243	270	12.15	4.2 / -5.1	4.2 / -6.86	Pass
243	280	12.15	4.2 / -5.1	4.2 / -6.86	Pass
243	290	12.15	4.4 / -5.3	4.4 / -7.06	Pass
243	300	12.15	4.3 / -5.2	4.3 / -6.96	Pass
243	310	12.15	4.5 / -5.4	4.5 / -7.16	Pass
243	320	12.15	4.6 / -5.5	4.6 / -7.26	Pass
243	330	12.15	4.6 / -5.5	4.6 / -7.26	Pass
243	340	12.15	4.7 / -5.6	4.7 / -7.36	Pass
243	350	12.15	4.6 / -5.5	4.6 / -7.26	Pass

SPURIOUS RADIATED EMISSIONS

COMPANY:	AMERIKING	**TEST DISTANCE:**	30 meters
EUT:	AK-451	**TEST ENGINEER:**	Eli McClure
SPEC:	Section 2.1511 - spurious	**TEST DATE:**	March 7, 2007

AF121.5	5.3	dB
dBmmeas	10.1	dBm
Fund. Freq	121.5	MHz

HARMONIC #	FREQUENCY* (MHz)	ANTENNA FACTOR (dB)	AMP GAIN (dB)	SPEC LIMIT (dBm)	DELTA (dB)	METER READING (dBm)
2	243.0	16.7	31.7	**0.4**	-34.2	-33.8
3	364.5	19.3	31.6	**-2.3**	-28.6	-30.9
4	486.0	22.0	31.4	**-5.2**	-51.8	-57
5	607.5	24.2	31.4	**-7.4**	-52.0	-59.4
6	729.0	25.0	31.6	**-8.0**	-51.8	-59.8
7	850.5	26.8	31.5	**-9.9**	-48.0	-57.9
8	972.0	28.1	31.3	**-11.4**	-48.9	-60.3

* No other spurious emissions found, 10 kHz to 4.5 GHz

FORMULA: dBmspur = dBmmeas + AF121.5 - AFspur freq + Ampgain* - 30

** The preamplifier (Ampgain) was used in order to increase the system sensitivity

Both Vertical and Horizontal receive antenna polarizations were checked.

The data in the tables above reflect the vertical data, which was worst-case.

All four EUT antennas were measured. Above data is the worst case antenna.

MEASUREMENTS OF RADIATED EMISSIONS

PHOTOGRAPH OF THE TEST SETUP FOR
RADIO FREQUENCY RADIATED INTERFERENCE

WHIP ANTENNA 1

MEASUREMENTS OF RADIATED EMISSIONS

PHOTOGRAPH OF THE TEST SETUP FOR
RADIO FREQUENCY RADIATED INTERFERENCE

WHIP ANTENNA 2

MEASUREMENTS OF RADIATED EMISSIONS

PHOTOGRAPH OF THE TEST SETUP FOR
RADIO FREQUENCY RADIATED INTERFERENCE

ROD ANTENNA

MEASUREMENTS OF RADIATED EMISSIONS

PHOTOGRAPH OF THE TEST SETUP FOR
RADIO FREQUENCY RADIATED INTERFERENCE

BLADE ANTENNA

MEASUREMENTS OF RADIATED EMISSIONS

PHOTOGRAPH OF THE TEST SETUP FOR
RADIO FREQUENCY RADIATED INTERFERENCE

WHIP PORTABLE ANTENNA

2.1513 - Measurement of modulation characteristics

measurement of audio frequencies

121.5 MHz	Fhigh =	374.5 Hz
	Flow =	1125 Hz
	Frange =	750.5 Hz
243 MHz	Fhigh =	375 Hz
	Flow =	1130 Hz
	Frange =	755 Hz

modulation characteristics

121.5 MHz	Vmin =	1.4 mV
	Vmax =	19 mV
	M	86.27%
243 MHz	Vmin =	1.4 mV
	Vmax =	18 mV
	M	85.57%

sweep repetition rate

	N=	180
	R=	3 Hz

modulation duty cycl

121.5 MHz	T=	730	0.00136986 ms
	tp=	1680	0.00059524 ms
			43.45%
	T=	865	0.00115607 ms
	tp=	2000	0.0005 ms
			43.25%
	T=	990	0.0010101 ms
	tp=	2250	0.00044444 ms
			44.00%
	T=	405	0.00246914 ms
	tp=	1000	0.001 ms
			40.50%
243 MHz	T=	714	0.00140056 ms
	tp=	1670	0.0005988 ms
			42.75%
	T=	1000	0.001 ms
	tp=	2200	0.00045455 ms
			45.45%
	T=	655	0.00152672 ms
	tp=	1500	0.00066667 ms
			43.67%
	T=	597	0.00167504 ms
	tp=	1450	0.00068966 ms
			41.17%

MEASUREMENTS OF MODULATION CHARACTERISTICS

PHOTOGRAPH OF THE TEST SETUP FOR
MEASUREMENTS OF MODULATION CHARACTERISTICS

2.1515 - Spectral Measurements

occupied bandwidth test

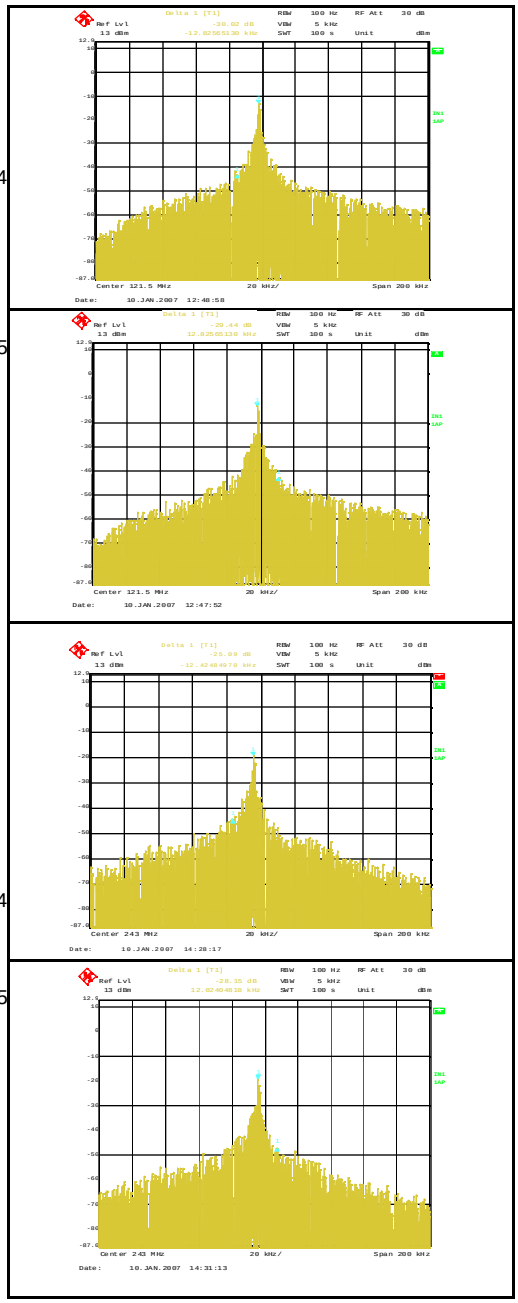
121.5 MHz	signal level:	-4.34 dBm	D=	0.44
	10*log (D)	-3.565473235		
	peak of signal	-13.27		
	12.5 kHz left sideband	-30.02 dBc		
	12.5 kHz right sideband	-29.44 dBc		
243 MHz	signal level:	-9.71 dBm	D=	0.4545
	10*log (D)	-3.424661124		
	peak of signal			
	12.5 kHz left sideband	-25.09 dBc		
	12.5 kHz right sideband	-28.15 dBc		
121.5 MHz	25 kHz left sideband	-34.14 dBc		
	25 kHz right sideband	-33.7 dBc		
243 MHz	25 kHz left sideband	-30.07 dBc		
	25 kHz right sideband	-32.44 dBc		
121.5 MHz	-23 dB BW	16.83 kHz		
243 MHz	-23 dB BW	24.04 kHz		
121.5 MHz	-3 dB BW	12 Hz		
243 MHz	-3 dB BW	11 Hz		

signal enhancement

121.5 MHz	10 kHz carrier power	-2.62 dBm	D=	0.44
	10 log (D)	-3.565473235		
	Mean Power	-6.185473235		
243 MHz	10 kHz carrier power	-9.3 dBm	D=	0.4545
	10 log (D)	-3.424661124		
	Mean Power	-12.72466112		
121.5 MHz	60 Hz carrier power	-13.37 dBm		
	ratio of carrier power	0.191226169		
243 MHz	60 Hz carrier power	-16.78 dBm		
	ratio of carrier power	0.393066573		

carrier frequency test

center frequency:	121.49795
center frequency:	242.99592



SPECTRAL MEASUREMENTS

PHOTOGRAPH OF THE TEST SETUP FOR
SPECTRAL MEASUREMENTS