ItextAlert LLC

ITA-1

Report No. 7LAY0059.3

Report Prepared By

www.nwemc.com
1-888-EMI-CERT

MPE Estimate

NORTHWEST EMC

22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Evaluation

ITextAlert LLC
Model: ITA-1

Emissions			
Test Description	**Specification**	**Test Method**	**Pass/Fail**
Maximum Permissible Exposure	FCC 2.1091:2011	OET Bulletin 65, Supplement C Ed 01-01	**Pass**

Modifications made to the product
See the Modifications section of this report

Approved By:

Donald Facteau, IS Manager

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.

Product compliance is the responsibility of the client, therefore the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test.

Revision Number	Description	Date	Page Number
00			

Accreditations and Authorizations

FCC

Accredited by NVLAP for performance of FCC radio, digital, and ISM device testing. Our Open Area Test Sites, certification chambers, and conducted measurement facilities have been fully described in reports filed with the FCC and accepted by the FCC in letters maintained in our files. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by the FCC as a Telecommunications Certification Body (TCB). This allows Northwest EMC to certify transmitters to FCC specifications in accordance with 47 CFR 2.960 and 2.962.

NVLAP

Northwest EMC, Inc. is accredited under the National Voluntary Laboratory Accreditation Program (NVLAP) for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. NVLAP is administered by the National Institute of Standards and Technology (NIST), an agency of the U.S. Commerce Department. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 2004/108/EC, and ANSI C63.4. Additionally, Northwest EMC is accredited by NVLAP to perform radio testing in accordance with the European Union R&TTE Directive 1999/5/EEC, the requirements of FCC, and the RSS radio standards for Industry Canada.

Industry Canada

Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS-Gen, Issue 2 and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements. (*Site Filing Numbers - Hillsboro: 2834D-1, 2834D-2, Sultan: 2834C-1, Irvine: 2834B-1, 2834B-2, Brooklyn Park: 2834E-1)*

CAB

Designated by NIST and validated by the European Commission as a Conformity Assessment Body (CAB) to conduct tests and approve products to the EMC directive and transmitters to the R&TTE directive, as described in the U.S. - EU Mutual Recognition Agreement.

Australia/New Zealand

The National Association of Testing Authorities (NATA), Australia has been appointed by the ACA as an accreditation body to accredit test laboratories and competent bodies for EMC standards. Accredited test reports or assessments by competent bodies must carry the NATA logo. Test reports made by an overseas laboratory that has been accredited for the relevant standards by an overseas accreditation body that has a Mutual Recognition Agreement (MRA) with NATA are also accepted as technical grounds for product conformity. The report should be endorsed with the respective logo of the accreditation body (NVLAP).

Accreditations and Authorizations

VCCI

Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. *(Registration Numbers. - Hillsboro: C-1071, R-1025, G-84, C-2687, T-1658, and R-2318, Irvine: R-1943, G-85, C-2766, and T-1659, Sultan: R-871, G-83, C-1784, and T-1511, Brooklyn Park: R-3125, G-86, G-141, C-3464, and T-1634).*

BSMI

Northwest EMC has been designated by NIST and validated by C-Taipei (BSMI) as a CAB to conduct tests as described in the APEC Mutual Recognition Agreement (US0017).

GOST

Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification

KCC

Northwest EMC, Inc is a CAB designated by MRA partners and recognized by Korea. (*Assigned Lab Numbers: Hillsboro: US0017, Irvine: US0158, Sultan: US0157, Brooklyn Park: US0175)*

VIETNAM

Vietnam MIC has approved Northwest EMC as an accredited test lab. Per Decision No. 194/QD-QLCL (dated December 15, 2009), Northwest EMC test reports can be used for Vietnam approval submissions.

SCOPE

For details on the Scopes of our Accreditations, please visit:
http://www.nwemc.com/accreditations/

Northwest EMC Locations

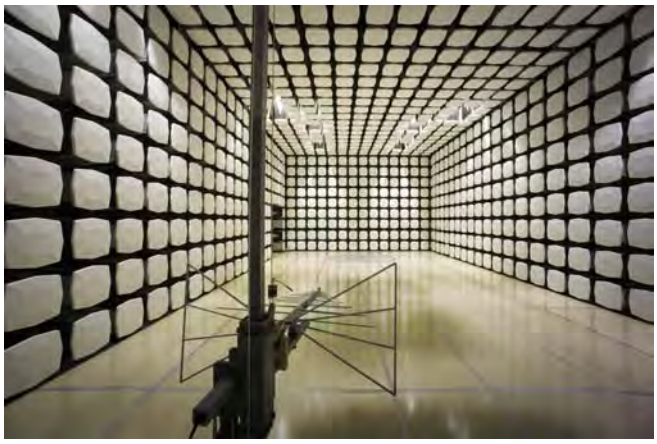
Oregon
Labs EV01-EV12
22975 NW Evergreen Pkwy
Suite 400
Hillsboro, OR 97124
(503) 844-4066

California
Labs OC01-OC13
41 Tesla
Irvine, CA 92618
(949) 861-8918

Minnesota
Labs MN01-MN08
9349 W Broadway Ave.
Brooklyn Park,
MN 55445
(763) 425-2281

Washington
Labs SU01-SU07
14128 339th Ave. SE
Sultan, WA 98294
(360) 793-8675

New York
Labs WA01-WA04
4939 Jordan Rd.
Elbridge, NY 13060
(315) 685-0796



Party Requesting the Evaluation

Company Name:	ITextAlert LLC
Address:	111 East First Street
City, State, Zip:	Geneseo, IL 61254
Test Requested By:	Rick Trueblood
Models:	ITA-1
Date of Evaluation:	January 16, 2012

Information Provided by the Party Requesting the Evaluation

Functional Description of the EUT (Equipment Under Test):

The model ITA-1 Monitoring Hub is a wall mounted home monitor system that communicates with wireless sensors in the home. The ITA-1 is seeking system approval for FCC ID: Z3GITA1HUB. It contains 802.11b/g/n and Zigbee radios that share an integral antenna, but they cannot transmit simultaneously. The ITA-1 also contains a previously certified GSM radio module with its own integral antenna (FCC ID: XPYLEONG100). Only the GSM and Zigbee radios can transmit simultaneously. The 802.11b/g/n radio can only transmit by itself.

Objective:

To demonstrate compliance with FCC requirements for RF exposure for 2.1091 mobile devices.

Maximum Permissible Exposure (MPE)

OVERVIEW

Human exposure to RF emissions from mobile devices (47 CFR §2.1091) may be evaluated based on the MPE limits adopted by the FCC for electric and magnetic field strength and/or power density, as appropriate, since exposures are assumed to occur at distances of 20 cm or more from persons. ANSI C95.1-1992 specifies a minimum separation distance of 20 cm for performing reliable field measurements to determine adherence to MPE limits. If the minimum separation distance between a transmitter and nearby persons is more than 20 cm under normal operating conditions, compliance with MPE limits may be determined at such distance from the transmitter. When applicable, operation instructions and prominent warning labels may be used to alert the exposed persons to maintain a specified distance from the transmitter or to limit their exposure durations and usage conditions to ensure compliance. If the use of warning labels on a transmitter is not effective or desirable, the alternative of performing SAR evaluation with the device at its closest range to persons under normal operating conditions may be used. The field strength and power density limits adopted by the FCC are based on whole-body averaged exposure and the assumption of RF field levels relate most accurately to estimating whole-body averaged SAR. This means some local values of exposures exceeding the stated field strength and power density limits may not necessarily imply non-compliance if the spatial average of spatially averaged RF fields over the exposed portions of a person's body does not exceed the limits.

COMPLIANCE WITH 2.1091

"Mobile devices that operate in the Cellular Radiotelephone Service, the Personal Communications Services, the Satellite Communications Services, the General Wireless Communications Service, the Wireless Communications Service, the Maritime Services and the Specialized Mobile Radio Service authorized under subpart H of part 22 of this chapter, parts 24, 25, 26 and 27 of this chapter, part 80 of this chapter (ship earth stations devices only) and part 90 of this chapter are subject to routine environmental evaluation for RF exposure prior to equipment authorization or use if they operate at frequencies of 1.5 GHz or below and their effective radiated power (ERP) is 1.5 watts or more, or if they operate at frequencies above 1.5 GHz and their ERP is 3 watts or more. Unlicensed personal communications service devices, unlicensed millimeter wave devices and unlicensed NII devices authorized under §§15.253, 15.255, and 15.257, and subparts D and E of part 15 of this chapter are also subject to routine environmental evaluation for RF exposure prior to equipment authorization or use if their ERP is 3 watts or more or if they meet the definition of a portable device as specified in §2.1093(b) requiring evaluation under the provisions of that section. All other mobile and unlicensed transmitting devices are categorically excluded from routine environmental evaluation for RF exposure prior to equipment authorization or use, except as specified in §§1.1307(c) and 1.1307(d) of this chapter. Applications for equipment authorization of mobile and unlicensed transmitting devices subject to routine environmental evaluation must contain a statement confirming compliance with the limits specified in paragraph (d) of this section as part of their application."

The EUT will only be used with a separation distance of 20 centimeters or greater between the antenna and the body of the user or nearby persons and can therefore be considered a mobile transmitter per 47 CFR 2.1091(b). Per 47 CFR 1.1310, the EUT meets the General Population / Uncontrolled exposure limits listed in Table 1.

COMPLIANCE WITH FCC KDB 447498 D01 Mobile Portable RF Exposure V04

The model ITA-1 Monitoring Hub is a wall mounted home monitor system that communicates with wireless sensors in the home. The ITA-1 is seeking system approval for FCC ID: Z3GITA1HUB. It contains 802.11b/g/n and Zigbee radios that share an integral antenna, but they cannot transmit simultaneously. The ITA-1 also contains a previously certified GSM radio module with its own integral antenna (FCC ID: XPYLEONG100). Only the GSM and Zigbee radios can transmit simultaneously. The 802.11b/g/n radio can only transmit by itself.

"KDB 447498 D01 Mobile Portable RF Exposure v04" provides the procedures, requirements, and authorization policies for mobile and portable devices. Item #8 best fits the exosure condition described in this report. Since these mobile devices are categorically excluded from routine evaluation; per footnotes 1 and 33 of KDB 447498, simple calculations may be used to estimate the power density to demonstrate compliance with 47 CFR 1.1310 requirements. The attached estimate shows MPE limits are met for simultaneous transmission at a 20 cm boundary.

FCC LIMITS FOR MPE

Limits for General Population /Uncontrolled Exposure: 47 CFR 1.1310

Frequency Range (MHz)	Strength (V/m)	Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minutes)
0.3 - 1.34	614	1.63	*(100)	30
1.34 - 30	824/f	2.19/f	*(180/f^2)	30
30 - 300	27.5	0.073	0.2	30
300 - 1500			f/1500	30
1500 - 100000			1	30

f = frequency in MHz
*** = Plane-wave equivalent power density**

METHOD OF EVALUATION

The exposure level at a 20 cm distance from the EUT's transmitting antenna is calculated using the general equation:

$$S = \frac{P * G}{4 * \pi * R^2}$$

NORTHWEST EMC

Maximum Permissible Exposure (MPE)

XMit 2008.12.29

EUT:	ITA-1	Work Order:	7LAY0059
Serial Number:	none	Date:	01/16/12
Customer:	iTextAlert LLC	Temperature:	n/a
Attendees:	None	Humidity:	n/a
Project:	None	Barometric Pres.:	n/a
Evaluated by:	Greg Kiemel	Power: n/a	Job Site: EV06

SPECIFICATIONS	Method
FCC 2.1091:2011	OET Bulletin 65, Supplement C Ed 01-01

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

No Deviations

Signature

MPE Estimates for Individual Devices

GSM Radio Module: FCC ID: XPYLEONG100

Frequency Band (MHz)	Antenna Type	Antenna Manufacturer	Antenna Part No.	Transmit Frequency (MHz)	Max Peak Conducted Output Power (mW)	Duty Cycle	Duty Cycle Corrected Output Power (mW)	Antenna Gain (dBi)	Minimum Antenna Cable Loss (dB)	Power Density @ 20 cm (mW/cm^2)	General Population Exposure Limit from 1.1310 (mW/cm^2)	Ratio of Power Density to the Exposure Limit
835	PIFA	Sunshine Precision Mold & Molding Engineering Ltd	8600-0000-50[1]	824.2	1905	0.50	952.5	1.8	0	0.287	0.549466667	0.52198
1900				1850.2	1148	0.50	574	1.8	0	0.173	1	0.17284

Note 1: The antenna assembly used for the GSM, Zigbee and WLAN antennas has the same part numbers because the antenna structures are mounted on the same carrier, but the antennas themselves are separate.

Zigbee Radio Module

Frequency Band (MHz)	Antenna Type	Antenna Manufacturer	Antenna Part No.	Transmit Frequency (MHz)	Max Peak Radiated Output Power (EIRP) (mW)	Duty Cycle	Duty Cycle Corrected Output Power (EIRP) (mW)	Antenna Gain (dBi)	Minimum Antenna Cable Loss (dB)	Power Density @ 20 cm (mW/cm^2)	General Population Exposure Limit from 1.1310 (mW/cm^2)	Ratio of Power Density to the Exposure Limit
2400	PIFA	Sunshine Precision Mold & Molding Engineering Ltd	8600-0000-50[1]	2405	6.9	1.00	6.9	3.4	0	0.0014	1	0.00137

Note 1: The antenna assembly used for the GSM, Zigbee and WLAN antennas has the same part numbers because the antenna structures are mounted on the same carrier, but the antennas themselves are separate.

802.11 b/g/n Radio Module

Frequency Band (MHz)	Antenna Type	Antenna Manufacturer	Antenna Part No.	Transmit Frequency (MHz)	Max Peak Radiated Output Power (EIRP) (mW)	Duty Cycle	Duty Cycle Corrected Output Power (EIRP) (mW)	Antenna Gain (dBi)	Minimum Antenna Cable Loss (dB)	Power Density @ 20 cm (mW/cm^2)	General Population Exposure Limit from 1.1310 (mW/cm^2)	Ratio of Power Density to the Exposure Limit
2400	PIFA	Sunshine Precision Mold & Molding Engineering Ltd	8600-0000-50[1]	2412	1.55	1.00	1.55	3.4	0	0.0003	1	0.00031

Note 1: The antenna assembly used for the GSM, Zigbee and WLAN antennas has the same part numbers because the antenna structures are mounted on the same carrier, but the antennas themselves are separate.

Worst Case Co-located Exposure Conditions

Only the cellular and Zigbee radios can transmit simultaneously

Per Note 24 shown below, the Sum of Worst Case Power Ratios cannot exceed 1.0

Cell Modem Worst Case Ratio of Power Density to the Exposure Limit	Zigbee Worst Case Ratio of Power Density to the Exposure Limit		Sum of Worst Case Ratios (Power Density to the Exposure Limit)	FCC Limit for Sum of Worst Case Ratios	
0.52198	0.00137		0.52335	1.0	PASS

The results shown in the above table are equivalent to the Sum of the EIRP of the Co-located Transmitters (EIRP TX1 + EIRP TX2) compared to the

Excerpts from TCB Training, April 3, 2002, "Mobile Transmitters", Slide 6:

"Devices operating in multiple frequency bands

When RF exposure evaluation is required for TCB approval
o Separate antennas – estimated minimum separation distances may be considered for the frequency bands that do not require evaluation or TCB approval, however, the estimated distance should take into account the effect of co-located transmitters. (Note 24)

Note 24 According to multiple frequency exposure criteria, the ratio of field strength or power density to the applicable exposure limit at the exposure location should be determined for each transmitter and the sum of these ratios must not exceed 1.0 for the location to be compliant."

The sum of the ratios (power density to the exposure limit) does not exceed 1.0; therefore, the exposure condition is compliant with FCC rules.