Project 12145-10

Prepared for:
EnergyHub, Inc.
232 3rd Street, Suite C201
Brooklyn, NY 11215

By

Professional Testing (EMI), Inc.
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April 18, 2011

MPE / RF Exposure Report
HomeBase
FCC ID: ZANHBZZP20, ZANHBEZP20, ZANHBNZP20
IC Identifier: 9603A-HBZZP20, 9603A-HBEZP20, 9603A-HBNZP20

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Test Dates: February 16, 22, 23, March 7, 11, 14, 15, 2011

I, Layne Lueckemeyer, for Professional Testing (EMI), Inc., being familiar with the FCC rules and test procedures have reviewed the test setup, measured data and this report. I believe them to be true and accurate.

Layne Lueckemeyer
Product Development Engineer

This report has been reviewed and accepted by EnergyHub, Inc. The undersigned is responsible for ensuring that this device will continue to comply with the FCC and IC rules.

1.0 MPE Prediction

Prediction of MPE limit at a given distance was made by using equation from page 18 of OET Bulletin 65, Edition 97-01.

In order to prove that SAR is not required we used the combined MPE calculation of the Wi-Fi 802.11b, 802.11g, 802.11n device and the Zigbee radios. The data is contained in the worksheet below.

1.1 Evaluation Procedure

$S=PG/4\pi R^2$

Where: S = power density
P= power input to antenna
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna

1.2 Evaluation Criteria

MPE limit for uncontrolled exposure at prediction frequency (mW/cm^2): 1.0

MPE Prediction Calculation

PROJECT #	DATE	RULE	DISTANCE	ANTENNA	RBW	VBW	DETECTOR
12145-10	April 18, 2011	15.247	N/A	N/A	N/A	N/A	N/A

Calculations

$S=PG/4\pi R^2$

Where: S = power density

P= power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

MPE B Mode Transmitter

Frequency (MHz)	Peak Output Power (dBm)	Peak Output Power (mW)	Prediction Distance (cm)	Max Antenna Gain (dBi)	Max Antenna Gain (numeric)	Power Density at 20.0 cm (mW/cm^2)
2412	2.71	1.867	20	2.0	1.585	.00059

MPE G Mode Transmitter

Frequency (MHz)	Peak Output Power (dBm)	Peak Output Power (mW)	Prediction Distance (cm)	Max Antenna Gain (dBi)	Max Antenna Gain (numeric)	Power Density at 20.0 cm (mW/cm^2)
2412	-9.85	0.103	20	2.0	1.585	.00003

MPE N Mode Transmitter

Frequency (MHz)	Peak Output Power (dBm)	Peak Output Power (mW)	Prediction Distance (cm)	Max Antenna Gain (dBi)	Max Antenna Gain (numeric)	Power Density at 20.0 cm (mW/cm^2)
2412	-0.42	0.908	20	2.0	1.585	.00029

MPE HAN Zigbee Radio Transmitter

Frequency (MHz)	Peak Output Power (dBm)	Peak Output Power (mW)	Prediction Distance (cm)	Max Antenna Gain (dBi)	Max Antenna Gain (numeric)	Power Density at 20.0 cm (mW/cm^2)
2405	-0.93	0.807	20	2.0	1.585	.00025

MPE Meter Zigbee Radio Transmitter

Frequency (MHz)	Peak Output Power (dBm)	Peak Output Power (mW)	Prediction Distance (cm)	Max Antenna Gain (dBi)	Max Antenna Gain (numeric)	Power Density at 20.0 cm (mW/cm^2)
2405	-4.15	0.385	20	2.0	1.585	.00012

NOTE: Antenna Gain is estimated worst case scenario.

.00059 + .00003 + .00029 + .00025 + .00012 = .00128 mW/cm^2

.00128 mW/cm^2 < 1.0 mW/cm^2

Result = Pass