



## FCC PART 15.247

### TEST REPORT

For

**LifeWatch Technologies Ltd.**

2 Pekeris Street, Rehovot, 7670202, Israel

**FCC ID: SMTLWVGW**

<b>Report Type:</b> Original Report	<b>Product Type:</b> GSM /WCDMA mobile phone
<b>Test Engineer:</b> <u>Ares Liu</u> <i>Ares Liu</i>	
<b>Report Number:</b> <u>R2DG131209002-00B</u>	
<b>Report Date:</b> <u>2014-01-07</u> Ivan Cao <i>Ivan Cao</i>	
<b>Reviewed By:</b> <u>RF Leader</u> <i>RF Leader</i>	
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## GENERAL INFORMATION

### Product Description for Equipment under Test (EUT)

The *LifeWatch Technologies Ltd.* 's product, model *FGL-00005* (FCC ID: *SMTLWVGW*) (the "EUT") in this report is a *GSM /WCDMA mobile phone*, which measures approximately: 13.2 cm (L) x 7.0 cm (W) x 1.3 cm (H), input voltage: DC 3.7V from lithium battery or DC 5V from adapter.

Adapter Information:

Model: PA1005-050UIB070

Input: AC 100-240V, 50-60Hz 0.3A

Output: DC 5.0V, 0.7A

*All measurement and test data in this report was gathered from production sample serial number: 131209002 (Assigned by BACL, Dongguan). The EUT was received on 2013-12-11*

### Objective

This report is prepared on behalf of *LifeWatch Technologies Ltd.* in accordance with Part 2, Subpart J, Part 15, Subparts A, B and C of the Federal Communications Commission's rules

The tests were performed in order to determine the Bluetooth of EUT compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

### Related Submittal(s)/Grant(s)

FCC Part 15B JBP submissions with FCC ID: *SMTLWVGW*

FCC Part 15C DTS submissions with FCC ID: *SMTLWVGW* for Wifi

FCC Part 22H&24E PCE submissions with FCC ID: *SMTLWVGW*.

FCC Part 15C DXX submissions with FCC ID: *SMTLWVGW*

### Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

## Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communications Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 02, 2012. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Dongguan) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 500069-0).



The current scope of accreditations can be found at <http://ts.nist.gov/standards/scopes/5000690.htm>

## SYSTEM TEST CONFIGURATION

### Description of Test Configuration

The system was configured for testing in an engineering mode, which was provided by manufacturer. The engineering mode was controlled by the Bluetooth Tester.

### EUT Exercise Software

No software was used in the testing.

### Equipment Modifications

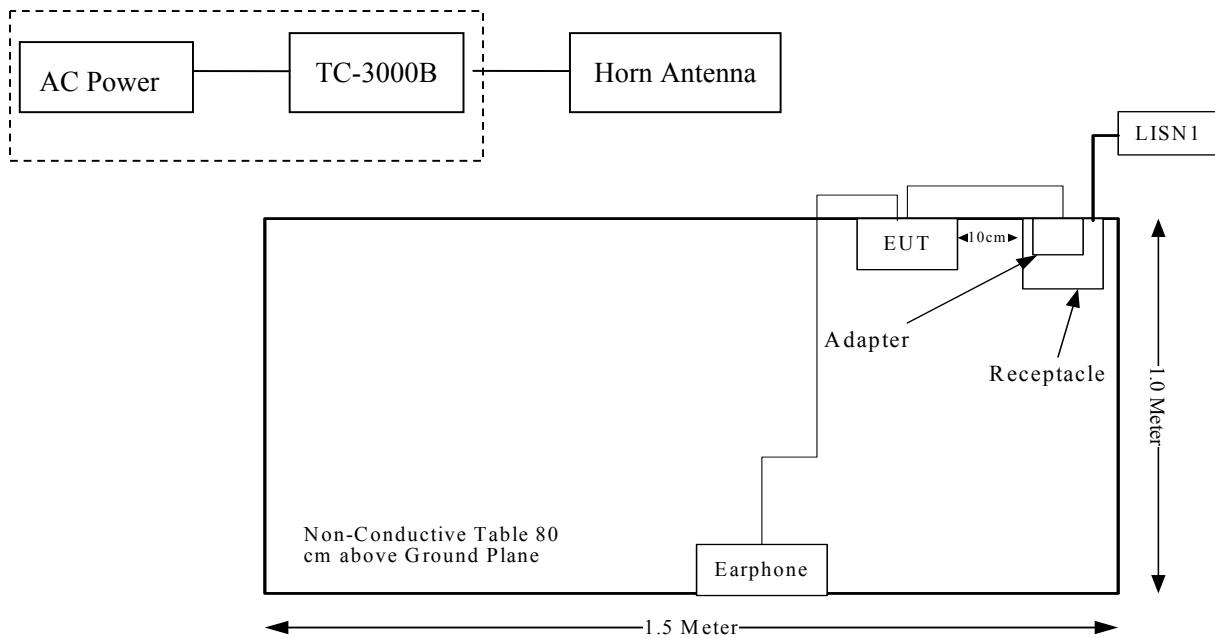
No modification was made to the EUT.

### Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
TESCOM	Bluetooth Tester	TC-3000B	3000B650083
N/A	Earphone	N/A	N/A

### External I/O Cable

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
USB Cable	yes	No	1.75	Adapter	EUT
Earphone Cable	no	no	1.5	EUT	Earphone

**Block Diagram of Test Setup**

## SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §15.247 (i) & §1.1310 & §2.1093	RF Exposure	Compliance
§15.203	Antenna Requirement	Compliance
§15.207 (a)	Conducted Emissions	Compliance
§15.205, §15.209, §15.247(d)	Radiated Emissions	Compliance
§15.247 (a)(1)	20 dB Bandwidth	Compliance*
§15.247(a)(1)	Channel Separation Test	Compliance*
§15.247(a)(1)(iii)	Time of Occupancy (Dwell Time)	Compliance*
§15.247(a)(1)(iii)	Quantity of hopping channel Test	Compliance*
§15.247(b)(1)	Peak Output Power Measurement	Compliance*
§15.247(d)	Band Edges	Compliance*

Note:

Compliance\*: The EUT “FGL-00005” (FCC ID: SMTLWVGW) is identical with the model “LifeWatch V” (FCC ID: SMTLWV), the only difference between them is that model FGL-00005 use the 2.4GHz RF module instead of the medical module of model LifeWatch V. other hardware and software were not changed.

According to the difference, there were no affect with the RF test result, so the data please refer to FCC ID: SMTLWV granted on 2013-11-27, report No.R2DG130916005-00B which was tested in Bay Area Compliance Laboratories Corp. (Dongguan).

## **FCC §15.247 (i) & §1.1310 & §2.1093- RF EXPOSURE**

### **Applicable Standard**

According to §15.247(i) and §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to KDB 447498 D01 Mobile Portable RF Exposure V05 Appendix A, SAR can be exempted if the output power is less than the SAR exclusion threshold:

For  $f=2450\text{MHz}$ , the output power is less 10mW at distance of 5mm.

### **Measurement Result**

Maximum conducted output power= 7.25dBm  
SAR exclusion threshold 10 mW (10dBm) > 7.25dBm

**So the stand-alone SAR evaluation is not necessary.**

**The simultaneous transmission SAR please refers to the SAR report: R1DG131209002-20.**

## **FCC §15.203 - ANTENNA REQUIREMENT**

### **Applicable Standard**

According to FCC § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

### **Antenna Connector Construction**

The EUT has an internal antenna, which were permanently attached to the EUT. The maximum gain is -1.0 dBi. Please refer to the internal photos.

**Result:** Compliance.

## FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

### Applicable Standard

FCC§15.207

### Measurement Uncertainty

Compliance or non- compliance with a disturbance limit shall be determined in the following manner:

If  $U_{\text{lab}}$  is less than or equal to  $U_{\text{cisp}}$  of Table 1, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;

- non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If  $U_{\text{lab}}$  is greater than  $U_{\text{cisp}}$  of Table 1, then:

- compliance is deemed to occur if no measured disturbance level, increased by  $(U_{\text{lab}} - U_{\text{cisp}})$ , exceeds the disturbance limit;

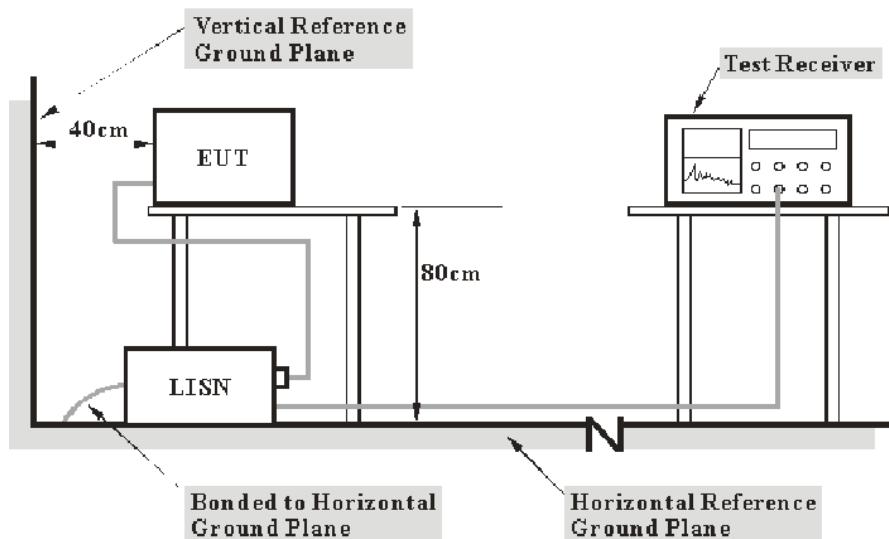
- non - compliance is deemed to occur if any measured disturbance level, increased by  $(U_{\text{lab}} - U_{\text{cisp}})$ , exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of conducted disturbance at mains port using AMN at Bay Area Compliance Laboratories Corp. (Dongguan) is 3.46 dB (150 kHz to 30 MHz).

Table 1 – Values of  $U_{\text{cisp}}$

Measurement	$U_{\text{cisp}}$
Conducted disturbance at mains port using AMN (150 kHz to 30 MHz)	3.4 dB

### EUT Setup



Note: 1. Support units were connected to second LISN.  
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source

### EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

### Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the first LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

### Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$$V_C = V_R + A_c + VDF$$

Herein,

$V_C$ : corrected voltage amplitude

$V_R$ : reading voltage amplitude

$A_c$ : attenuation caused by cable loss

VDF: voltage division factor of AMN or ISN

The “Margin” column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the maximum limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

## Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI TEST RECEIVER	ESCS 30	830245/006	2013-11-20	2014-11-19
R&S	Two-line V-network	ENV216	3560.6550.12	2013-2-18	2014-2-17
R&S	L.I.S.N	ESH3-Z5	100113	N/A	N/A
BACL	Test Software	BACL-EMC	V1.0-2010	N/A	N/A

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

## Test Results Summary

According to the recorded data in following table, the EUT complied with the [FCC Part 15.207](#), with the worst margin reading of:

**9.97 dB at 0.350 MHz** in the **Line** conducted mode

## Test Data

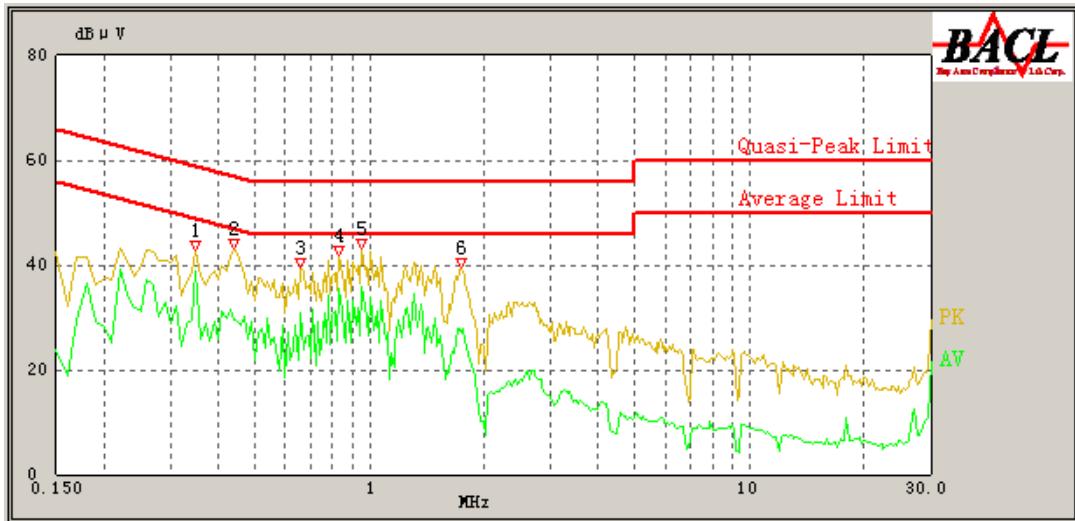
### Environmental Conditions

<b>Temperature:</b>	19.8 °C
<b>Relative Humidity:</b>	50 %
<b>ATM Pressure:</b>	101.1 kPa

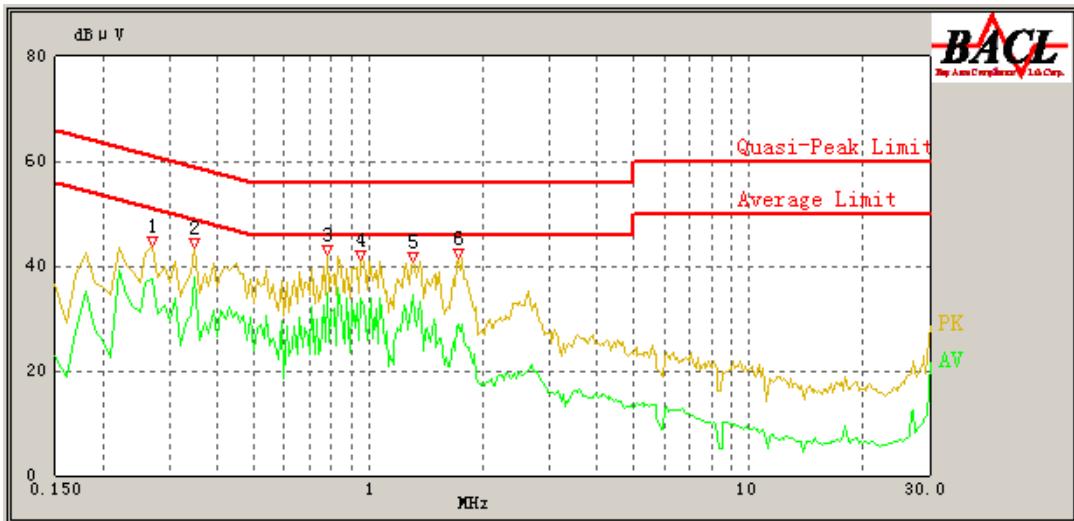
*The testing was performed by Ares Liu on 2014-01-04.*

*Test Mode: Transmitting*

**120 V, 60 Hz, Line:**



Frequency (MHz)	Cord. Reading (dB $\mu$ V)	Correction Factor (dB)	Limit (dB $\mu$ V)	Margin (dB)	Detector (PK/AV/QP)
0.350	42.29	9.68	58.96	16.67	QP
0.350	38.99	9.68	48.96	9.97	AV
0.440	38.53	9.67	57.06	18.53	QP
0.440	29.42	9.67	47.06	17.64	AV
0.660	35.90	9.67	56.00	20.10	QP
0.660	30.74	9.67	46.00	15.26	AV
0.830	39.65	9.67	56.00	16.35	QP
0.830	35.52	9.67	46.00	10.48	AV
0.950	40.06	9.68	56.00	15.94	QP
0.950	35.87	9.68	46.00	10.13	AV
1.750	32.42	9.68	56.00	23.58	QP
1.750	27.16	9.68	46.00	18.84	AV

**120 V, 60 Hz, Neutral:**

Frequency (MHz)	Cord. Reading (dB $\mu$ V)	Correction Factor (dB)	Limit (dB $\mu$ V)	Margin (dB)	Detector (PK/AV/QP)
0.270	40.24	9.68	61.12	20.88	QP
0.270	37.43	9.68	51.12	13.89	AV
0.350	42.68	9.68	58.96	16.28	QP
0.350	37.92	9.68	48.96	11.04	AV
0.780	40.90	9.68	56.00	15.10	QP
0.780	34.86	9.68	46.00	11.14	AV
0.950	42.32	9.69	56.00	13.68	QP
0.950	33.81	9.69	46.00	12.19	AV
1.310	40.61	9.69	56.00	15.39	QP
1.310	34.56	9.69	46.00	11.44	AV
1.720	37.81	9.68	56.00	18.19	QP
1.720	28.83	9.68	46.00	17.17	AV

## FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

### Applicable Standard

FCC §15.247 (d); §15.209; §15.205;

### Measurement Uncertainty

Compliance or non- compliance with a disturbance limit shall be determined in the following manner:

If  $U_{\text{lab}}$  is less than or equal to  $U_{\text{cisp}}$  of Table 1, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;

- non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If  $U_{\text{lab}}$  is greater than  $U_{\text{cisp}}$  of Table 1, then:

- compliance is deemed to occur if no measured disturbance level, increased by  $(U_{\text{lab}} - U_{\text{cisp}})$ , exceeds the disturbance limit;

- non - compliance is deemed to occur if any measured disturbance level, increased by  $(U_{\text{lab}} - U_{\text{cisp}})$ , exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is:

30M~200MHz: 5.0 dB

200M~1GHz: 6.2 dB

1G~6GHz: 4.45 dB

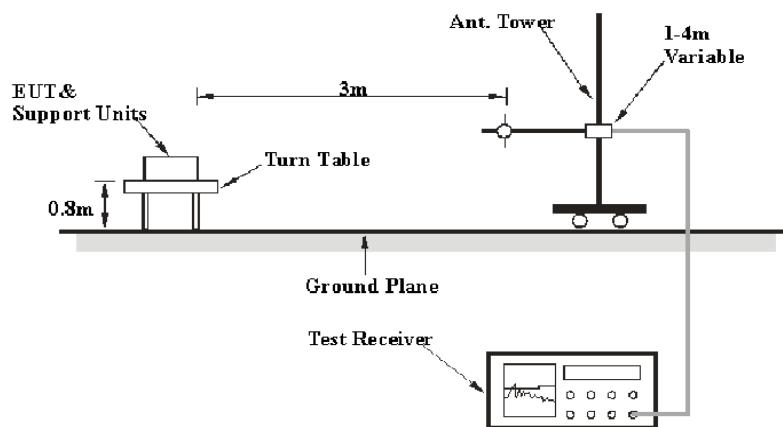
6G~18GHz: 5.23 dB

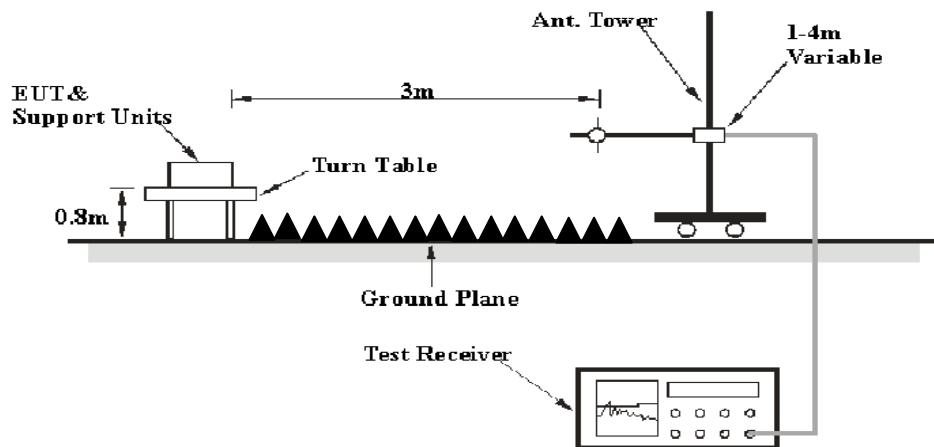
Table 1 – Values of  $U_{\text{cisp}}$

Measurement	$U_{\text{cisp}}$
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB

### EUT Setup

Below 1GHz:



**Above 1GHz:**

The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC 15.209, and FCC 15.247 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source

**EMI Test Receiver & Spectrum Analyzer Setup**

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30MHz – 1000 MHz	120 kHz	300 kHz	120kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	Ave.

**Test Procedure**

During the radiated emissions, the EUT was connected to the AC floor outlet. #

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz - 1 GHz, peak and Average detection modes for frequencies above 1 GHz.

## Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI TEST RECEIVER	ESCI	100224	2013-5-6	2014-5-5
Sunol Sciences	Antenna	JB3	A060611-1	2011-9-6	2014-9-5
HP	AMPLIFIER	8447E	2434A02181	N/A	N/A
R&S	Spectrum analyzer	FSEM	DE31388	2013-5-7	2014-5-6
ETS LINDGREN	horn antenna	3115	000 527 35	2012-9-6	2015-9-5
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	N/A	N/A
R&S	Spectrum Analyzer	FSP 38	100478	2013-6-16	2014-6-15
Ducommun Technologies	horn antenna	ARH-4223-02	1007726-01 1304	2013-6-16	2014-6-15
Quinstar	Amplifier	QLW-18405536-JO	15964001001	N/A	N/A

\* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

## Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

## Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, and section 15.205, 15.209 and 15.247, with the worst margin reading of:

**9.05 dB at 2483.5 MHz in the Horizontal polarization of EDR Mode ( $\pi/4$ -DQPSK)**

## Test Data

### Environmental Conditions

<b>Temperature:</b>	21.8 °C
<b>Relative Humidity:</b>	47%
<b>ATM Pressure:</b>	101.1 kPa

*The testing was performed by Ares Liu 2014-01-04*

*Mode: Transmitting*  
*BDR Mode (GFSK):*

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dB $\mu$ V/m)	FCC 15.247	
	Reading (dB $\mu$ V)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)				Limit (dB $\mu$ V/m)	Margin (dB)
Low Channel: 2402(MHz)									
2402	71.46	PK	H	25.65	3.90	0.00	101.01	N/A	N/A
2402	64.49	AV	H	25.65	3.90	0.00	94.04	N/A	N/A
2402	61.71	PK	V	25.65	3.90	0.00	91.26	N/A	N/A
2402	51.96	AV	V	25.65	3.90	0.00	81.51	N/A	N/A
2390	27.22	PK	H	25.61	3.84	0.00	56.67	74.00	17.33
2390	14.03	AV	H	25.61	3.84	0.00	43.48	54.00	10.52
4804	31.85	PK	H	30.59	4.67	27.26	39.85	74.00	34.15
4804	16.93	AV	H	30.59	4.67	27.26	24.93	54.00	29.07
7206	31.95	PK	H	34.09	6.50	26.30	46.24	74.00	27.76
7206	17.86	AV	H	34.09	6.50	26.30	32.15	54.00	21.85
9608	36.19	PK	H	35.96	8.75	26.22	54.68	74.00	19.32
9608	20.91	AV	H	35.96	8.75	26.22	39.40	54.00	14.60
3754	30.45	PK	H	29.36	4.67	27.44	37.04	74.00	36.96
3754	17.11	AV	H	29.36	4.67	27.44	23.70	54.00	30.30
271	26.14	QP	H	13.71	2.00	21.50	20.35	46.00	25.65
Middle Channel: 2441(MHz)									
2441	70.93	PK	H	25.75	3.99	0.00	100.67	N/A	N/A
2441	63.88	AV	H	25.75	3.99	0.00	93.62	N/A	N/A
2441	66.34	PK	V	25.75	3.99	0.00	96.08	N/A	N/A
2441	52.54	AV	V	25.75	3.99	0.00	82.28	N/A	N/A
4882	31.93	PK	H	30.79	4.75	27.26	40.21	74.00	33.79
4882	17.05	AV	H	30.79	4.75	27.26	25.33	54.00	28.67
7323	32.03	PK	H	34.38	6.72	26.53	46.60	74.00	27.40
7323	17.9	AV	H	34.38	6.72	26.53	32.47	54.00	21.53
9764	36.26	PK	H	36.33	8.58	25.62	55.55	74.00	18.45
9764	21.1	AV	H	36.33	8.58	25.62	40.39	54.00	13.61
1596	30.64	PK	H	23.79	3.17	26.90	30.70	74.00	43.30
1596	14.15	AV	H	23.79	3.17	26.90	14.21	54.00	39.79
3754	31.65	PK	H	29.36	4.67	27.44	38.24	74.00	35.76
3754	17.42	AV	H	29.36	4.67	27.44	24.01	54.00	29.99
271	26.54	QP	H	13.71	2.00	21.50	20.75	46.00	25.25
High Channel: 2480(MHz)									
2480	70.84	PK	H	25.85	3.82	0.00	100.51	N/A	N/A
2480	63.88	AV	H	25.85	3.82	0.00	93.55	N/A	N/A
2480	66.19	PK	V	25.85	3.82	0.00	95.86	N/A	N/A
2480	52.45	AV	V	25.85	3.82	0.00	82.12	N/A	N/A
2483.5	32.54	PK	H	25.86	3.80	0.00	62.20	74.00	11.80
2483.5	15.03	AV	H	25.86	3.80	0.00	44.69	54.00	9.31
4960	32.02	PK	H	31.00	4.70	27.27	40.45	74.00	33.55
4960	17.16	AV	H	31.00	4.70	27.27	25.59	54.00	28.41
7440	32.19	PK	H	34.66	6.95	26.56	47.24	74.00	26.76
7440	17.96	AV	H	34.66	6.95	26.56	33.01	54.00	20.99
9920	36.37	PK	H	36.71	8.41	25.50	55.99	74.00	18.01
9920	21.19	AV	H	36.71	8.41	25.50	40.81	54.00	13.19
3754	30.75	PK	H	29.36	4.67	27.44	37.34	74.00	36.66
3754	17.18	AV	H	29.36	4.67	27.44	23.77	54.00	30.23
271	26.63	QP	H	13.71	2.00	21.50	20.84	46.00	25.16

EDR Mode ( $\pi/4$ -DQPSK):

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dB $\mu$ V/m)	FCC 15.247	
	Reading (dB $\mu$ V)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)				Limit (dB $\mu$ V/m)	Margin (dB)
Low Channel: 2402(MHz)									
2402	71.29	PK	H	25.65	3.90	0.00	100.84	N/A	N/A
2402	63.88	AV	H	25.65	3.90	0.00	93.43	N/A	N/A
2402	61.66	PK	V	25.65	3.90	0.00	91.21	N/A	N/A
2402	51.6	AV	V	25.65	3.90	0.00	81.15	N/A	N/A
2390	27.77	PK	H	25.61	3.84	0.00	57.22	74.00	16.78
2390	14.15	AV	H	25.61	3.84	0.00	43.60	54.00	10.40
4804	31.44	PK	H	30.59	4.67	27.26	39.44	74.00	34.56
4804	17.05	AV	H	30.59	4.67	27.26	25.05	54.00	28.95
7206	31.68	PK	H	34.09	6.50	26.30	45.97	74.00	28.03
7206	19.14	AV	H	34.09	6.50	26.30	33.43	54.00	20.57
9608	36.22	PK	H	35.96	8.75	26.22	54.71	74.00	19.29
9608	20.92	AV	H	35.96	8.75	26.22	39.41	54.00	14.59
3754	31.42	PK	H	29.36	4.67	27.44	38.01	74.00	35.99
3754	17.01	AV	H	29.36	4.67	27.44	23.60	54.00	30.40
271	26.61	QP	H	13.71	2.00	21.50	20.82	46.00	25.18
Middle Channel: 2441(MHz)									
2441	70.9	PK	H	25.75	3.99	0.00	100.64	N/A	N/A
2441	64.61	AV	H	25.75	3.99	0.00	94.35	N/A	N/A
2441	65.91	PK	V	25.75	3.99	0.00	95.65	N/A	N/A
2441	52.37	AV	V	25.75	3.99	0.00	82.11	N/A	N/A
4882	31.76	PK	H	30.79	4.75	27.26	40.04	74.00	33.96
4882	17.28	AV	H	30.79	4.75	27.26	25.56	54.00	28.44
7323	31.18	PK	H	34.38	6.72	26.53	45.75	74.00	28.25
7323	19.1	AV	H	34.38	6.72	26.53	33.67	54.00	20.33
9764	36.19	PK	H	36.33	8.58	25.62	55.48	74.00	18.52
9764	20.74	AV	H	36.33	8.58	25.62	40.03	54.00	13.97
1596	30.19	PK	H	23.79	3.17	26.90	30.25	74.00	43.75
1596	15.37	AV	H	23.79	3.17	26.90	15.43	54.00	38.57
3754	31.3	PK	H	29.36	4.67	27.44	37.89	74.00	36.11
3754	17.79	AV	H	29.36	4.67	27.44	24.38	54.00	29.62
271	27.19	QP	H	13.71	2.00	21.50	21.40	46.00	24.60
High Channel: 2480(MHz)									
2480	71.01	PK	H	25.85	3.82	0.00	100.68	N/A	N/A
2480	64.22	AV	H	25.85	3.82	0.00	93.89	N/A	N/A
2480	66.05	PK	V	25.85	3.82	0.00	95.72	N/A	N/A
2480	52.23	AV	V	25.85	3.82	0.00	81.90	N/A	N/A
2483.5	32.49	PK	H	25.86	3.80	0.00	62.15	74.00	11.85
2483.5	15.29	AV	H	25.86	3.80	0.00	44.95	54.00	9.05
4960	32	PK	H	31.00	4.70	27.27	40.43	74.00	33.57
4960	16.94	AV	H	31.00	4.70	27.27	25.37	54.00	28.63
7440	32.19	PK	H	34.66	6.95	26.56	47.24	74.00	26.76
7440	18.93	AV	H	34.66	6.95	26.56	33.98	54.00	20.02
9920	35.82	PK	H	36.71	8.41	25.50	55.44	74.00	18.56
9920	20.53	AV	H	36.71	8.41	25.50	40.15	54.00	13.85
3754	30.59	PK	H	29.36	4.67	27.44	37.18	74.00	36.82
3754	17.53	AV	H	29.36	4.67	27.44	24.12	54.00	29.88
271	27.71	QP	H	13.71	2.00	21.50	21.92	46.00	24.08

## EDR Mode (8-DPSK):

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dB $\mu$ V/m)	FCC 15.247	
	Reading (dB $\mu$ V)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)				Limit (dB $\mu$ V/m)	Margin (dB)
Low Channel: 2402(MHz)									
2402	71.46	PK	H	25.65	3.90	0.00	101.01	N/A	N/A
2402	63.75	AV	H	25.65	3.90	0.00	93.30	N/A	N/A
2402	61.2	PK	V	25.65	3.90	0.00	90.75	N/A	N/A
2402	51.34	AV	V	25.65	3.90	0.00	80.89	N/A	N/A
2390	27.9	PK	H	25.61	3.84	0.00	57.35	74.00	16.65
2390	14.17	AV	H	25.61	3.84	0.00	43.62	54.00	10.38
4804	31.35	PK	H	30.59	4.67	27.26	39.35	74.00	34.65
4804	17.03	AV	H	30.59	4.67	27.26	25.03	54.00	28.97
7206	31.67	PK	H	34.09	6.50	26.30	45.96	74.00	28.04
7206	18.42	AV	H	34.09	6.50	26.30	32.71	54.00	21.29
9608	36.04	PK	H	35.96	8.75	26.22	54.53	74.00	19.47
9608	20.44	AV	H	35.96	8.75	26.22	38.93	54.00	15.07
3754	30.67	PK	H	29.36	4.67	27.44	37.26	74.00	36.74
3754	17.42	AV	H	29.36	4.67	27.44	24.01	54.00	29.99
271	26.03	QP	H	13.71	2.00	21.50	20.24	46.00	25.76
Middle Channel: 2441(MHz)									
2441	70.26	PK	H	25.75	3.99	0.00	100.00	N/A	N/A
2441	64.09	AV	H	25.75	3.99	0.00	93.83	N/A	N/A
2441	66.1	PK	V	25.75	3.99	0.00	95.84	N/A	N/A
2441	52.21	AV	V	25.75	3.99	0.00	81.95	N/A	N/A
4882	31.66	PK	H	30.79	4.75	27.26	39.94	74.00	34.06
4882	16.73	AV	H	30.79	4.75	27.26	25.01	54.00	28.99
7323	31.2	PK	H	34.38	6.72	26.53	45.77	74.00	28.23
7323	18.91	AV	H	34.38	6.72	26.53	33.48	54.00	20.52
9764	36.08	PK	H	36.33	8.58	25.62	55.37	74.00	18.63
9764	20.77	AV	H	36.33	8.58	25.62	40.06	54.00	13.94
1596	29.98	PK	H	23.79	3.17	26.90	30.04	74.00	43.96
1596	15.07	AV	H	23.79	3.17	26.90	15.13	54.00	38.87
3754	31.4	PK	H	29.36	4.67	27.44	37.99	74.00	36.01
3754	17.15	AV	H	29.36	4.67	27.44	23.74	54.00	30.26
271	26.57	QP	H	13.71	2.00	21.50	20.78	46.00	25.22
High Channel: 2480(MHz)									
2480	70.61	PK	H	25.85	3.82	0.00	100.28	N/A	N/A
2480	63.57	AV	H	25.85	3.82	0.00	93.24	N/A	N/A
2480	65.73	PK	V	25.85	3.82	0.00	95.40	N/A	N/A
2480	52.03	AV	V	25.85	3.82	0.00	81.70	N/A	N/A
2483.5	32.17	PK	H	25.86	3.80	0.00	61.83	74.00	12.17
2483.5	15.11	AV	H	25.86	3.80	0.00	44.77	54.00	9.23
4960	31.6	PK	H	31.00	4.70	27.27	40.03	74.00	33.97
4960	16.83	AV	H	31.00	4.70	27.27	25.26	54.00	28.74
7440	31.97	PK	H	34.66	6.95	26.56	47.02	74.00	26.98
7440	18.18	AV	H	34.66	6.95	26.56	33.23	54.00	20.77
9920	35.87	PK	H	36.71	8.41	25.50	55.49	74.00	18.51
9920	20.57	AV	H	36.71	8.41	25.50	40.19	54.00	13.81
3754	29.78	PK	H	29.36	4.67	27.44	36.37	74.00	37.63
3754	17.49	AV	H	29.36	4.67	27.44	24.08	54.00	29.92
271	27.21	QP	H	13.71	2.00	21.50	21.42	46.00	24.58

**Conducted Spurious Emissions at Antenna Port**

**Test Data**

The date is refer to FCC ID: SMTLWV granted on 2013-11-27, report No.R2DG130916005-00B which was tested in Bay Area Compliance Laboratories Corp. (Dongguan).

## **FCC §15.247(a) (1) - CHANNEL SEPARATION TEST**

### **Applicable Standard**

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.50 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater provided the systems operate with an output power no greater than 125 mW.

### **Test Data**

The date is refer to FCC ID: SMTLWV granted on 2013-11-27, report No.R2DG130916005-00B which was tested in Bay Area Compliance Laboratories Corp. (Dongguan).

## **FCC §15.247(a) (1) – 20 dB BANDWIDTH TESTING**

### **Applicable Standard**

Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

### **Test Data**

The date is refer to FCC ID: SMTLWV granted on 2013-11-27, report No.R2DG130916005-00B which was tested in Bay Area Compliance Laboratories Corp. (Dongguan).

## **FCC §15.247(a) (1) (iii) - QUANTITY OF HOPPING CHANNEL TEST**

### **Applicable Standard**

Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

### **Test Data**

The date is refer to FCC ID: SMTLWV granted on 2013-11-27, report No.R2DG130916005-00B which was tested in Bay Area Compliance Laboratories Corp. (Dongguan).

## **FCC §15.247(a) (1) (iii) - TIME OF OCCUPANCY (DWELL TIME)**

### **Applicable Standard**

Frequency hopping systems in the 2400-2483.5 MHz shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

### **Test Data**

The date is refer to FCC ID: SMTLWV granted on 2013-11-27, report No.R2DG130916005-00B which was tested in Bay Area Compliance Laboratories Corp. (Dongguan).

## **FCC §15.247(b) (1) - PEAK OUTPUT POWER MEASUREMENT**

### **Applicable Standard**

According to §15.247(b) (1), for frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725–5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 watts

### **Test Data**

The date is refer to FCC ID: SMTLWV granted on 2013-11-27, report No.R2DG130916005-00B which was tested in Bay Area Compliance Laboratories Corp. (Dongguan).

## **FCC §15.247(d) - BAND EDGES TESTING**

### **Applicable Standard**

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

### **Test Data**

The date is refer to FCC ID: SMTLWV granted on 2013-11-27, report No.R2DG130916005-00B which was tested in Bay Area Compliance Laboratories Corp. (Dongguan).

\*\*\*\*\* END OF REPORT \*\*\*\*\*