CMA Testing and Certification Laboratories
廠商會檢定中心

TEST REPORT

Report No.	:	AJ001576-001	Date :	2007 February 12
Application No.	:	LG229352(1)		
Client	:	Janam Technologies LLC 40 Goose Hill Road, Cold Spring Harbor, New York 11724, United States		
Sample Description	:	One(1) submitted sample(s) stated to be Janam XP20W of Model No. XP-20W-1P and XP-20W-1N Rating : 1 x 3.7 V rechargeable battery : AC 100V ~ 240V to DC 5V adaptor No. of submitted sample : Two (2) piece(s) ***		
Date Received	:	2006 December 29		
Test Period	:	2006 December 29 – 2007 February 08		
Test Requested	:	FCC Part 15 Certification.		
Test Method	:	47 CFR Part 15 (10-1-05 Edition) ANSI C63.4 – 2003		
Test Result	:	See attached sheet(s) from page 2 to 15.		
Conclusion	:	The submitted sample was found to comply with requirement of FCC Part 15 Subpart C and Subpart B.		
Remark	:	All two models are the same in circuitry and components; and therefore model XP-20W-1P has been chosen to be the representative of the test sample..		

For and on behalf of
CMA Industrial Development Foundation Limited

Authorized Signature : _____

Danny Chui
Deputy Manager - EL. Division

FCC ID: UTWP20W

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1 General Information

1.1 General Description

The equipment under test (EUT) is a PDA for Janam XP20W. The EUT is powered by 1 x 3.7V rechargeable battery. There is built-in 320MB memory, Barcode Scanner and Wi-Fi features.

The brief circuit description is saved with filename: OpDes.pdf

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1.2 Location of the test site

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2003. A Semi-Anechoic Chamber Testing Site is set up for investigation and located at:

Ground Floor, Yan Hing Centre,
9 – 13 Wong Chuk Yeung Street,
Fo Tan, Shatin,
New Territories,
Hong Kong.

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 2003. A shielded room is located at :

Ground Floor, Yan Hing Centre,
9 – 13 Wong Chuk Yeung Street,
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1.3 List of measuring equipment

Equipment	Manufacturer	Model No.	Serial No.
EMI Test Receiver	R&S	ESCI	100152
Spectrum Analyzer	R&S	FSP30	100628
Broadband Antenna	Schaffner	CBL6112B	2692
Horn Antenna	EMCO	3116	2616
Horn Antenna	Schwarzbeck	9120D	9120D-531
Pre-Amplifier	Schwarzbeck	9718	9718-119
EMI Test Receiver	R&S	ESCS30	100001
LISN	R&S	ESH3-Z5	100038
LISN	R&S	ESH3-Z5	100010

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2 Description of the radiated emission test

2.1 Test Procedure

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2003.

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 1m and 0.8m high above the ground. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

For below 30MHz, a loop antenna with its vertical plane is placed 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1 m above the ground.

The device was rotated through three orthogonal axes to determine which attitude and configuration produce the highest emission during measurement.

The antenna output terminal was connected to spectrum directly for conducted output power measurement.

2.2 Test Result

Peak Detector data was measured unless otherwise stated.

"#" means emissions appearing within the restricted bands shall follow the requirement of section 15.205.

It was found that the EUT meet the FCC requirement.

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2.3 Radiated Emission Measurement Data

Radiated Emission

pursuant to

the requirement of FCC part 15 subpart B

Operation Mode: Barcode Scanning with PC connection

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV/m)	Antenna and Cable factor	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
43.160	V	10.8	13.0	23.8	40.0	-16.2
105.421	H	4.9	11.1	16.0	43.5	-27.5
138.900	H	4.0	12.6	16.6	43.5	-26.9
179.460	H	5.2	10.7	15.9	43.5	-27.6
184.080	H	5.4	9.5	14.9	43.5	-28.6

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Radiated Emission

pursuant to

the requirement of FCC part 15 subpart C

Operation Mode: Wi-Fi CH01

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV/m)	Antenna and Cable factor	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
2412.000	V	74.5	27.6	102.1	N/A	N/A
# 4823.960	V	21.2	31.3	52.5	54.0	-1.5

Operation Mode: Wi-Fi CH06

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV/m)	Antenna and Cable factor	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
2437.020	V	75.8	27.6	103.4	N/A	N/A
# 4874.080	V	18.2	31.3	49.5	54.0	-4.5
# 7311.020	V	5.1	36.5	41.6	54.0	-12.4

Operation Mode: Wi-Fi CH11

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV/m)	Antenna and Cable factor	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
2462.000	V	73.8	27.6	101.4	N/A	N/A
# 4924.000	V	19.3	31.3	50.6	54.0	-3.4
# 7386.180	V	6.1	36.5	42.6	54.0	-11.4

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2.4 Conducted Emission Measurement Data

Conducted Emission

pursuant to

the requirement of FCC part 15 subpart C

Operation Mode: Wi-Fi CH01

Transmission Power

Frequency (MHz)	Reading (dBμV)	Reading (μW)	Limit (W)	Margin (W)
2412.000	106.2	856.844	1.0	0.999

Spurious Emission

Frequency (MHz)	Measured Field Strength (dBμV)	Limit (20dBμV below Carrier)	Margin (dB)
4824.400	70.3	86.2	-15.9
7236.080	58.2	86.2	-28.0
9648.120	54.9	86.2	-31.3
12060.000	45.2	86.2	-41.0
14472.000	50.1	86.2	-36.1

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Conducted Emission

pursuant to

the requirement of FCC part 15 subpart C

Operation Mode: Wi-Fi CH06

Transmission Power

Frequency (MHz)	Reading (dBμV)	Reading (μW)	Limit (W)	Margin (W)
2437.000	106.0	866.812	1.0	-0.999

Spurious Emission

Frequency (MHz)	Measured Field Strength (dBμV)	Limit (20dBμV below Carrier)	Margin (dB)
4874.080	67.3	86.0	-18.7
7311.080	54.3	86.0	-31.7
9748.280	56.3	86.0	-29.7
12185.080	46.1	86.0	-39.9
14622.000	51.0	86.0	-35.0

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Conducted Emission

pursuant to

the requirement of FCC part 15 subpart C

Operation Mode: Wi-Fi CH11

Transmission Power

Frequency (MHz)	Reading (dBμV)	Reading (μW)	Limit (W)	Margin (W)
2462.012	107.3	927.434	1.0	-0.999

Spurious Emission

Frequency (MHz)	Measured Field Strength (dBμV)	Limit (20dBμV below Carrier)	Margin (dB)
4924.041	65.5	87.3	-21.8
7386.065	54.1	87.3	-33.2
9848.092	55.1	87.3	-32.2
12310.140	42.4	87.3	-44.9
14772.108	42.5	87.3	-44.8
17234.150	28.9	87.3	-58.4

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3 Description of the Line-conducted Test

3.1 Test Procedure

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 2003. The EUT was setup as described in the procedures, and both lines were measured.

3.2 Test Result

The battery charging mode has been tested. The EUT was connected to the adaptor producing the Maximum emission. The measurement data was indicated in Appendix.

It was found that the EUT met the FCC requirement.

3.3 Graph and Table of Conducted Emission Measurement Data

For electronic filing, the documents are saved with filename TestRpt2.pdf.

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4 Photograph

4.1 Photographs of the Test Setup for Radiated Emission and Conduction Emission

For electronic filing, the photos are saved with filename TSup1.jpg to Tsup5.jpg

4.2 Photographs of the External and Internal Configurations of the EUT

For electronic filing, the photos are saved with filename ExPho1.jpg to ExPho2.jpg and InPho1.jpg to InPho2.jpg.

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5 Supplementary document

The following document were submitted by applicant, and for electronic filing, the document are saved with the following filenames:

Document	Filename
ID Label/Location	LabelSmp.jpg
Block Diagram	BlkDia.pdf
Schematic Diagram	Schem.pdf
Users Manual	UserMan.pdf
Operational Description	OpDes.pdf

5.1 Bandwidth

The plot saved in TestRpt3.pdf shows the fundamental emission is confined in the specified band. It also shows that the 20dB bandwidth met the 15.247(d) requirement for frequency band 2400 to 2483.5 MHz.

The plot saved in TestRpt4.pdf shows the 6dB bandwidth has minimum 500kHz for frequency channel 2412MHz, 2437MHz and 2462MHz. It fulfils the section 15.247(a) 2 requirement.

The plot saved in TestRpt6.pdf shows the band edge of frequency channel 11 met the 15.205 restricted band requirement.

5.2 Duty Cycle

N/A

5.3 Transmission Time

N/A

5.4 Power Spectral Density

The plot saved in TestRpt5.pdf shows the frequency channel 2412 MHz, 2437MHz and 2462MHz did not greater than 8dBm for 3kHz bandwidth. It fulfils the section 15.247(e) requirement.

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A8.	6dB Bandwidth Plot	2	pages
A9.	Power Spectral Density	2	pages
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A13.	User Manual	12	pages
A14.	Operation Description	2	pages

***** End of Report *****

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