

Victory Concept Industries Ltd.

Application  
For  
Certification

**WIFI Internet Radio (Transceiver)**

**(FCC ID: OJ7FC02)**

0710896  
BH/ SL  
September 28, 2007

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## INTERTEK TESTING SERVICE

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# INTERTEK TESTING SERVICES

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## MEASUREMENT/TECHNICAL REPORT

**Victory Concept Industries Ltd.- MODEL: Victory Concept FC02  
OXX digital OXX540002**

**FCC ID: OJ7FC02**

This report concerns (check one)      Original Grant       Class II Change

Equipment Type: DTS - Part 15 Digital Transmission Systems

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Deferred grant requested per 47 CFR 0.457(d)(1)(ii)?    Yes       No

If yes, defer until : \_\_\_\_\_  
date

Company Name agrees to notify the Commission by: \_\_\_\_\_  
date

of the intended date of announcement of the product so that the grant can be issued on that date.

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Transition Rules Request per 15.37?      Yes       No

If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [04-05-05 Edition] provision.

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Report prepared by:

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# INTERTEK TESTING SERVICES

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## INTERTEK TESTING SERVICES

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### List of attached file

<b>Exhibit Type</b>	<b>File Description</b>	<b>Filename</b>
Test Report	Test Report	report.pdf
Test Report	6 dB Bandwidth Plot	6dB.pdf
Test Report	Maximum Power Density Plot	maxpd.pdf
Test Report	Out Band Antenna Conducted Emission Plot	obantcon.pdf
Test Report	Duty Cycle Calculation and Measurement	dcc.pdf
Test Report	Conducted Emission Test Result	conduct.pdf
Test Setup Photo	Radiated Emission	radiated photos.doc
Test Setup Photo	Conducted Emission	conducted photos.doc
External Photo	External Photo	external photos.doc
Internal Photo	Internal Photo	internal photos.doc
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
ID Label/Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf
Operation Description	Technical Description	descri.pdf
Cover Letter	Confidentiality Request	request.pdf

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**INTERTEK TESTING SERVICES**

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**EXHIBIT 1**

**SUMMARY OF TEST RESULTS**

## INTERTEK TESTING SERVICES

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### 1.0 Summary of Test

**Victory Concept Industries Ltd. - MODEL: Victory Concept FC02  
OXX digital OXX540002**

**FCC ID: OJ7FC02**

TEST	REFERENCE	RESULTS
Max. Output power	15.247(b)	Pass
6 dB Bandwidth	15.247(a)(2)	Pass
Max. Power Density	15.247(e)	Pass
Out of Band Antenna Conducted Emission	15.247(d)	Pass
Radiated Emission in Restricted Bands	15.247(d)	Pass
AC Conducted Emission	15.207	Pass
Radiated Emission from Digital Part	15.109	Pass
Antenna Requirement	15.203	Pass (See Notes)

Notes: The EUT uses a permanently attached antenna, which in accordance to Section 15.203 is considered sufficient to comply with the provisions of this section.

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**EXHIBIT 2**

**GENERAL DESCRIPTION**

## INTERTEK TESTING SERVICES

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### 2.0 General Description

#### 2.1 Product Description

The Equipment Under Test (EUT) is a Transceiver operating at 2412 - 2462 MHz. It has 11 channels, 5 MHz of channel spacing. If the performance of the channel is poor, it will swap to another channel. The EUT is powered by the AC-DC adaptor 120VAC 60Hz input, 9VDC 1500mA output. It is a internet radio player with WiFi and LAN functions. During normal use, it receives internet radio signal from the corresponding transmitter (wireless router) by the applicable software when used the same channel and the EUT will be transmitted at fixed a acknowledgement signal to the wireless router. The EUT was connected to the internet FM radio station and the radio signal will be produced the sound by speaker. Also, it can playback the music using the built in media player through LAN or WiFi radio connecting to the computer's shared folder. The media player supported media formats: MP3, WMA, RM, OGG and ACC.

Once the internet radio is powered up, the WiFi dongle of the internet radio will search wireless router. Due to the EUT has been found the channel on 1-11 channels, when the internet radio always receives audio signal from the wireless router and will be transmitted at fixed a acknowledgement signal to the wireless router. The worst-case transmit on time of IEEE 802.11b portion for particular channel shall be 0.066ms as per 0.996ms and the worst-case transmit on time of IEEE 802.11g portion for particular channel shall be 0.396ms as per 0.996ms by applicant provided information.

The Model: OXX digital OXX540002 is the same as the Model: Victory Concept FC02 in hardware aspect. The difference in brand name and model number serves as marketing strategy.

Antenna Type : Internal, Integral

The circuit descriptions are saved with filename: descri.pdf.

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### 2.2 Related Submittal(s) Grants

This is an application for Certification of a DTS - Part 15 Digital Transmission Systems. The receiver portion associated with this transmitter is exempted from technical requirement of this Part.

### 2.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003). All measurements were performed in Open Area Test Sites. Preliminary scans were performed in the Open Area Test Sites only to determine worst case modes. All Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the **"Justification Section"** of this Application. All other measurements were made in accordance with the procedures in part 2 of CFR 47.

### 2.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located at Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. This test facility and site measurement data have been fully placed on file with the FCC.

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**EXHIBIT 3**

**SYSTEM TEST CONFIGURATION**

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### 3.0 System Test Configuration

#### 3.1 Justification

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables were manipulated to produce worst case emissions. It was powered by AC 120V 60Hz input, DC 9V 1.5A output adaptor.

The signal is maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000 MHz. The resolution is 1 MHz or greater for frequencies above 1000 MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement were performed the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

#### 3.2 EUT Exercising Software

The EUT exercise program (provided by client) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use.

The parameters of test software setting:

During the test, Channel and power controlling software provided by the applicant was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the applicant and is going to be fixed on the firmware of the end product.

#### Power Parameters of IEEE 802.11b/g

Test software setting of IEEE 802.11b/g			
Channel No.	Out power	Data rate	Date modulation
1, 5, 11	2	802.11b: 1-11 Mbps 802.11g: 6-54 Mbps	802.11b: DSSS(BPSK, QPSK, CCK) 802.11g: OFDM(BPSK,QPSK,16/64QAM)

The tests were performed in 11 Mbps and 54 Mbps data rate to find the worst case in this report.

## INTERTEK TESTING SERVICES

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### 3.3 Support Equipment List and Description

The FCC ID's for all equipment, plus descriptions of all cables used in the tested system (included inserted cards, which have grants) are:

#### *HARDWARE:*

The unit was operated system. An AC-DC adapter (provided with the unit) was used to power the device. Their description are listed below.

- (1) An AC-DC adaptor (100-240VAC to 9VDC 1.5A, Kings, Model: KSS15 0901500 by applicant) incorporating a ferrite core at the connector end of its DC line.
- (2) Wireless router (Planex, Model: BLW-04EX by applicant)
- (3) Notebook (HP, Model: NC6220 by intertek)
- (4) Modems (Hayes, Model: 6800CN; Genius, Model: GM56EX by intertek)

#### *CABLES:*

- (1) 1 x 1.5 meter long audio cable with connector terminated (unshielded cable)
- (2) 2 x 2 meter long LAN cable
- (3) 1 x telephone line with termination
- (4) 1 x serial cable with 1 meter long

#### *OTHERS:*

There are no special accessories necessary for compliance of this product.

## INTERTEK TESTING SERVICES

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### 3.4 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

Uncertainty and Compliance - Unless the standard specifically states that measured values are to be extended by the measurement uncertainty in determining compliance, all compliance determinations are based on the actual measured value.

### 3.5 Equipment Modification

Any modifications installed previous to testing by Victory Concept Industries Ltd. will be incorporated in each production model sold/leased in the United States.

No modifications were installed by ETL Division, Intertek Testing Services Hong Kong Ltd.

All the items listed under section 3.0 of this report are confirmed by:

*Confirmed by:*

*Ho Wai Kin, Ben  
Supervisor  
Intertek Testing Services Hong Kong Ltd.  
Agent for Victory Concept Industries Ltd.*



\_\_\_\_\_  
Signature

\_\_\_\_\_  
August 28, 2007 Date

**EXHIBIT 4**

**MEASUREMENT RESULTS**

# INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02

Date of Test: August 16, 2007

## 4.0 Measurement Results

### 4.1 Maximum Conducted Output Power at Antenna Terminals, FCC Rules 15.247(b)(3):

The antenna power of the EUT was connected to the input of a power meter. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.

The antenna port of the EUT was connected to the input of a spectrum analyzer. The analyzer was set for RBW > 6dB bandwidth and power was read directly in dBm. External attenuation and cable loss were compensated for using the OFFSET function of the analyzer.

For antennas with gains of 6 dBi or less, maximum allowed transmitter output is 1 watt (+30 dBm).

IEEE 802.11b (Antenna Gain = 2.8 dBi)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	18.53	71.3
Middle Channel: 2432	20.01	100.2
High Channel: 2462	22.06	160.7

IEEE 802.11g (Antenna Gain = 2.8 dBi)		
Frequency (MHz)	Output in dBm	Output in mWatt
Low Channel: 2412	21.73	148.9
Middle Channel: 2432	22.93	196.3
High Channel: 2462	25.05	319.9

Cable loss : 0.5 dB External Attenuation : 10 dB

Cable loss, external attenuation:  included in OFFSET function  
 added to power meter raw reading

EUT dBm max. output level = 25.05 dBm (+30 dBm or less)

For RF Safety, the information is shown on the user manual: manual.pdf.

## INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02

Date of Test: August 16, 2007

### 4.2 Minimum 6 dB RF Bandwidth, FCC Rule 15.247(a)(2):

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100kHz. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6dB bandwidth was determined from where the channel output spectrum intersected the display line.

IEEE 802.11b (DSSS, 11Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	12.12

IEEE 802.11g (OFDM, 54Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	16.52

Limit: at least 500kHz

Refer to the following plots for 6 dB bandwidth sharp:

#### IEEE 802.11b

Plot B2A: Low Channel 6 dB RF Bandwidth  
Plot B2B: Middle Channel 6 dB RF Bandwidth  
Plot B2C: High Channel 6 dB RF Bandwidth

#### IEEE 802.11g

Plot G2A: Low Channel 6 dB RF Bandwidth  
Plot G2B: Middle Channel 6 dB RF Bandwidth  
Plot G2C: High Channel 6 dB RF Bandwidth

For electronic filing, the above plots are saved with filename: 6dB.pdf

## INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02

Date of Test: August 16, 2007

### 4.3 Maximum Power Density Reading, FCC Rule 15.247(e) :

The spectrum analyzer RES BW was set to 3kHz. In order to look for a peak, the START and STOP frequencies were set to the band edges of the maximum output passband. If there is no clear maximum amplitude in any given portion of the band, it may be necessary to make measurements at a number of bands defined by several START and STOP frequency pairs.

Antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

IEEE 802.11b (DSSS, 11Mbps)	
Frequency (MHz)	Power Density (dBm/3kHz)
2464.733	2.38

Frequency Span = 1.5MHz

Sweep Time = Frequency Span/3kHz  
= 500 seconds

Cable Loss: 0.5 dB

Peak Power Density (at 2463.700MHz) =  $1.88 + 0.5 = 2.38$  dBm/3kHz

Limit: 8dBm/ 3kHz

Refer to the following plots for power density data :

Plot B3A: Low Channel power density  
Plot B3B: Middle Channel power density  
Plot B3C: High Channel power density

## INTERTEK TESTING SERVICES

Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02

Date of Test: August 16, 2007

### 4.3 Maximum Power Density Reading, FCC Rule 15.247(e) – Continued:

IEEE 802.11g (OFDM, 54Mbps)	
Frequency (MHz)	Power Density (dBm/3kHz)
2464.459	-14.24

Frequency Span = 1.5MHz

Sweep Time = Frequency Span/3kHz  
= 500 seconds

Cable Loss: 0.5 dB

Peak Power Density (at 2464.459MHz) =  $-14.74 + 0.5 = -14.24$  dBm/3kHz

Limit: 8dBm/ 3kHz

Refer to the following plots for power density data :

Plot G3A: Low Channel power density  
Plot G3B: Middle Channel power density  
Plot G3C: High Channel power density

For electronic filing, the above plots are saved with filename: maxpd.pdf

## INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02

Date of Test: August 16, 2007

### 4.4 Out of Band Conducted Emissions, FCC Rule 15.247(d):

In any 100 kHz bandwidth outside the EUT passband, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 20dB below that of the maximum in-band 100 kHz emission, or else shall meet the general limits for radiated emissions at frequencies outside the passband, whichever results in lower attenuation.

All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the passband.

Refer to the following plots for out of band conducted emissions data:

Plot B4A1 - B4A2: Low Channel Emissions  
Plot B4B1 - B4B2: Middle Channel Emissions  
Plot B4C1 - B4C2: High Channel Emissions  
Plot B4D1: Modulation Products Emissions  
Plot G4A1 - G4A2: Low Channel Emissions  
Plot G4B1 - G4B2: Middle Channel Emissions  
Plot G4C1 - G4C2: High Channel Emissions  
Plot G4D1: Modulation Products Emissions

The plots showed the 2<sup>nd</sup> harmonic and modulation products at the band edges of 2400MHz and 2483.5MHz. In addition, all spurious emission and up to the tenth harmonic was measured and they were found to be at least 20 dB below the highest level of the desired power in the passband.

Furthermore, delta measurement technique for measuring bandedge emissions was incorporated in the test of the edge at 2483.5Mhz.

For the electronic filing, the above plots are saved with filename: obantcon.pdf

## INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02

Date of Test: August 16, 2007

### 4.5 Out of Band Radiated Emissions (for emissions in 4.4 above that are less than 20dB below carrier), FCC Rule 15.247(d):

For out of band emissions that are close to or that exceed the 20dB attenuation requirement described in the specification, radiated measurements were performed at a 3m separation distance to determine whether these emissions complied with the general radiated emission requirement.

- Not required, since all emissions are more than 20dB below fundamental
- See attached data sheet

## INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02

Date of Test: August 16, 2007

### 4.6 Transmitter Radiated Emissions in Restricted Bands, FCC Rule 15.35(b), (c):

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included. All measurements were performed with peak detection unless otherwise specified.

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

## INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02

Date of Test: August 16, 2007

### 4.7 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

$$FS = RA + AF + CF - AG + PD + AV$$

where FS = Field Strength in  $\text{dB}\mu\text{V}/\text{m}$

RA = Receiver Amplitude (including preamplifier) in  $\text{dB}\mu\text{V}$

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB

AG = Amplifier Gain in dB

PD = Pulse Desensitization in dB

AV = Average Factor in -dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

$$FS = RA + AF + CF - AG + PD + AV$$

#### Example

Assume a receiver reading of 62.0  $\text{dB}\mu\text{V}$  is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB, and the resultant average factor was -10 dB. The net field strength for comparison to the appropriate emission limit is 32  $\text{dB}\mu\text{V}/\text{m}$ . This value in  $\text{dB}\mu\text{V}/\text{m}$  was converted to its corresponding level in  $\mu\text{V}/\text{m}$ .

RA = 62.0  $\text{dB}\mu\text{V}$

AF = 7.4 dB

CF = 1.6 dB

AG = 29.0 dB

PD = 0 dB

AV = -10 dB

$$FS = 62 + 7.4 + 1.6 - 29 + 0 + (-10) = 32 \text{ dB}\mu\text{V}/\text{m}$$

$$\text{Level in mV/m} = \text{Common Antilogarithm} [(32 \text{ dB}\mu\text{V}/\text{m})/20] = 39.8 \mu\text{V}/\text{m}$$

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02

Date of Test: August 16, 2007

### 4.8 Radiated Emission Configuration Photograph

Worst Case Radiated Emission  
at  
4864.000 MHz

For the electronic filing, the worst case radiated emission configuration photographs are saved with filename: radiated photos.doc.

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02

Date of Test: August 16, 2007

### 4.9 Radiated Emission Data

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

Judgement : Passed by 8.9 dB margin

### **TEST PERSONNEL:**



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*Tester Signature*

Mark Cheung, Lead Engineer  
*Typed/Printed Name*

August 28, 2007  
*Date*

## INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02  
Mode: 802.11b (TX-Channel 01)

Date of Test: August 16, 2007

Table 1

### Radiated Emissions

Polari-zation	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB $\mu$ V/m)	Average Factor (-dB)	Calculated at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	3216.020	49.9	33	31.9	48.8	7.9	40.9	54.0	-13.1
H	*4824.960	50.9	33	34.9	52.8	7.9	44.9	54.0	-9.1
H	7237.440	42.8	33	37.9	47.7	7.9	39.8	54.0	-14.2
H	9649.920	43.6	33	40.4	51.0	7.9	43.1	54.0	-10.9
H	*12062.400	40.5	33	40.5	48.0	7.9	40.1	54.0	-13.9

NOTES: 1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

\* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Test Engineer: Mark Cheung

## INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02  
Mode: 802.11b (TX-Channel 05)

Date of Test: August 16, 2007

Table 2

### Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB $\mu$ V/m)	Average Factor (-dB)	Calculated at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	3242.673	50.7	33	31.9	49.6	7.9	41.7	54.0	-12.3
H	*4864.000	51.1	33	34.9	53.0	7.9	45.1	54.0	-8.9
H	*7296.000	42.9	33	37.9	47.8	7.9	39.9	54.0	-14.1
H	9728.000	42.7	33	40.4	50.1	7.9	42.2	54.0	-11.8
H	*12160.000	39.5	33	40.5	47.0	7.9	39.1	54.0	-14.9

NOTES: 1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

\* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Test Engineer: Mark Cheung

# INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02  
Mode: 802.11b (TX-Channel 11)

Date of Test: August 16, 2007

Table 3

## Radiated Emissions

Polari-zation	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB $\mu$ V/m)	Average Factor (-dB)	Calculated at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	**2463.700	108.7	33	29.4	105.1	7.9	97.2	---	---
H	3282.708	49.7	33	31.9	48.6	7.9	40.7	54.0	-13.3
H	*4927.400	50.9	33	34.9	52.8	7.9	44.9	54.0	-9.1
H	*7391.100	43.7	33	37.9	48.6	7.9	40.7	54.0	-13.3
H	9854.800	42.9	33	40.4	50.3	7.9	42.4	54.0	-11.6
H	*12318.500	40.4	33	40.5	47.9	7.9	40.0	54.0	-14.0

NOTES: 1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

\* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

\*\* Fundamental emission was measured for determining band-edge compliance of using delta measurement technique.

Test Engineer: Mark Cheung

## INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02  
Mode: 802.11g (TX-Channel 01)

Date of Test: August 16, 2007

Table 4

### Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB $\mu$ V/m)	Average Factor (-dB)	Calculated at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	3216.020	47.6	33	31.9	46.5	23.6	22.9	54.0	-31.1
H	*4824.960	43.5	33	34.9	45.4	23.6	21.8	54.0	-32.2
H	7237.440	41.9	33	37.9	46.8	23.6	23.2	54.0	-30.8
H	9649.920	41.7	33	40.4	49.1	23.6	25.5	54.0	-28.5
H	*12062.400	39.4	33	40.5	46.9	23.6	23.3	54.0	-30.7

NOTES: 1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

\* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Test Engineer: Mark Cheung

## INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02  
Mode: 802.11g (TX-Channel 05)

Date of Test: August 16, 2007

Table 5

### Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB $\mu$ V/m)	Average Factor (-dB)	Calculated at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	3242.673	47.7	33	31.9	46.6	23.6	23.0	54.0	-31.0
H	*4864.000	43.6	33	34.9	45.5	23.6	21.9	54.0	-32.1
H	*7296.000	42.1	33	37.9	47.0	23.6	23.4	54.0	-30.6
H	9728.000	42.6	33	40.4	50.0	23.6	26.4	54.0	-27.6
H	*12160.000	39.0	33	40.5	46.5	23.6	22.9	54.0	-31.1

NOTES: 1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

\* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Test Engineer: Mark Cheung

## INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.  
 Model: Victory Concept FC02  
 Mode: 802.11g (TX-Channel 11)

Date of Test: August 16, 2007

Table 6

### Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m - Peak (dB $\mu$ V/m)	Average Factor (-dB)	Calculated at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	**2463.700	105.6	33	29.4	102.0	23.6	78.4	---	---
H	3282.708	47.9	33	31.9	46.8	23.6	23.2	54.0	-30.8
H	*4927.400	44.1	33	34.9	46.0	23.6	22.4	54.0	-31.6
H	*7391.100	42.0	33	37.9	46.9	23.6	23.3	54.0	-30.7
H	9854.800	41.0	33	40.4	48.4	23.6	24.8	54.0	-29.2
H	*12318.500	39.0	33	40.5	46.5	23.6	22.9	54.0	-31.1

NOTES: 1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

\* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

\*\* Fundamental emission was measured for determining band-edge compliance of using delta measurement technique.

Test Engineer: Mark Cheung

## INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02

Date of Test: August 16, 2007

### 4.10 AC Line Conducted Emission, FCC Rule 15.207:

Not required; battery operation only

Test data attached

## INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02

Date of Test: August 16, 2007

### 4.11 Line Conducted Configuration Photograph

Worst Case Line-Conducted Configuration  
at  
29.235 MHz

For electronic filing, the worst case line conducted configuration photographs are saved with filename: conducted photos.doc.

## INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02

Date of Test: August 16, 2007

### 4.12 Line Conducted Emission Configuration Data

The data on the following pages list the significant emission frequencies, the limit, and the margin of compliance.

Judgement : Passed by 7.0 dB margin

For electronic filing, the conducted emission test result is saved with filename: conducted.pdf

### **TEST PERSONNEL:**



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*Tester Signature*

Mark Cheung, Lead Engineer  
*Typed/Printed Name*

August 28, 2007  
*Date*

## INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02

Date of Test: August 16, 2007

### 4.13 Radiated Emissions from Digital Section of Transceiver, FCC Ref: 15.109

- Not required - No digital part
- Test results are attached
- Included in the separated DOC report.

## INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.

Date of Test: August 16, 2007

Model: Victory Concept FC02

Mode: Digital Portion

Table 7

### Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
V	47.355	41.6	16	11.0	36.6	40.0	-3.4
V	51.130	41.8	16	11.0	36.8	40.0	-3.2
V	62.945	42.0	16	10.0	36.0	40.0	-4.0
V	68.350	45.1	16	8.0	37.1	40.0	-2.9
H	113.501	33.7	16	14.0	31.7	43.5	-11.8
H	125.870	38.8	16	14.0	36.8	43.5	-6.7
H	164.810	39.6	16	17.0	40.6	43.5	-2.9
H	168.740	37.5	16	18.0	39.5	43.5	-4.0
H	171.190	37.3	16	18.0	39.3	43.5	-4.2
H	174.840	36.0	16	19.0	39.0	43.5	-4.5
H	181.190	34.7	16	20.0	38.7	43.5	-4.8
H	190.740	38.9	16	16.0	38.9	43.5	-4.6
H	375.027	22.0	16	24.0	30.0	46.0	-16.0

NOTES: 1. Quasi-peak detector is used for the emission below or equal to 1000 MHz.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

Test Engineer: Mark Cheung

## INTERTEK TESTING SERVICES

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Applicant: Victory Concept Industries Ltd.  
Model: Victory Concept FC02

Date of Test: August 16, 2007

### 4.14 Transmitter Duty Cycle Calculation and Measurements, FCC Rule 15.35(b), (c)

The EUT antenna output port was connected to the input of the spectrum analyzer. The analyzer center frequency was set to EUT RF channel carrier. The SWEP function on the analyzer was set to ZERO SPAN. The transmitter ON time was determined from the resultant time-amplitude display:

#### 802.11b Portion:

$$\begin{aligned}\text{Duty cycle (DC)} &= \text{Maximum ON time in } 0.396\text{ms}/0.992\text{ms} \\ &= 0.399\end{aligned}$$

$$\begin{aligned}\text{Duty cycle correction, dB} &= 20^* \log (\text{DC}) \\ &= 20^* \log (0.399) \\ &= -7.9 \text{ dB}\end{aligned}$$

#### 802.11g Portion:

$$\begin{aligned}\text{Duty cycle (DC)} &= \text{Maximum ON time in } 0.066\text{ms}/0.996\text{ms} \\ &= 0.066\end{aligned}$$

$$\begin{aligned}\text{Duty cycle correction, dB} &= 20^* \log (\text{DC}) \\ &= 20^* \log (0.066) \\ &= -23.6 \text{ dB}\end{aligned}$$

X	See attached spectrum analyzer chart (s) for transmitter timing IEEE 802.11b portion: Plots B5A1-A2, IEEE 802.11g portion: Plots G5A1-A2
	See transmitter timing diagram provided by manufacturer
	Not applicable, duty cycle was not used.

For electronic filing, the above plots are saved with filename: dcc.pdf

**EXHIBIT 5**

**EQUIPMENT PHOTOGRAPHS**

## INTERTEK TESTING SERVICES

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### 5.0 Equipment Photographs

For electronic filing, the photographs are saved with filename: external photos.doc & internal photos.doc.

**EXHIBIT 6**

**PRODUCT LABELLING**

## INTERTEK TESTING SERVICES

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### 6.0 Product Labelling

For electronic filing, the FCC ID label artwork and location is saved with filename: label.pdf.

**EXHIBIT 7**

**TECHNICAL SPECIFICATIONS**

## INTERTEK TESTING SERVICES

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### 7.0 Technical Specifications

For electronic filing, the block diagram and circuit diagram are saved with filename: block.pdf and circuit.pdf respectively.

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INTERTEK TESTING SERVICES

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**EXHIBIT 8**

**INSTRUCTION MANUAL**

## INTERTEK TESTING SERVICES

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### 8.0 **Instruction Manual**

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

Please note that the required FCC Information and RF Exposure Info to the User is attached on P.25 of the Instruction Manual.

This manual will be provided to the end-user with each unit sold/leased in the United States.

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**INTERTEK TESTING SERVICES**

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**EXHIBIT 9**

**CONFIDENTIALITY REQUEST**

## INTERTEK TESTING SERVICES

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### 9.0 **Confidentiality Request**

The applicant would like to have confidential protection of the following documents:

- Schematics
- Detailed Block Diagrams
- Detailed Operational/ Functional Description

For electronic filing, the request letter is saved with filename: request.pdf.