

KYSOH SA

Application  
For  
Certification

FUX

**(FCC ID: UYHFX-H3RR1N)**

0701859  
KL/at  
May 3, 2007

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## INTERTEK TESTING SERVICES

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### LIST OF EXHIBITS

#### *INTRODUCTION*

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**MEASUREMENT/TECHNICAL REPORT**

**KYSOH SA - Model: FX-100  
FCC ID: UYHFX-H3RR1N**

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

Equipment Type : DXT - Part 15 Low Power Transceiver, Rx Verified and JBP - Part 15 Class B Computer Peripheral

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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:

Lam Chun Cheong, Kenneth  
Intertek Testing Services Hong Kong Ltd.  
2/F., Garment Centre,  
576 Castle Peak Road,  
Kowloon, Hong Kong.  
Phone : 852-2173-8474  
Fax: 852-2741-1693

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List of attached file

Exhibit type	File Description	filename
Test Report	Test Report	report.pdf
Operation Description	Technical Description	descri.pdf
Test Setup Photo	Radiated & Conducted Emission	config photos.doc
Test Report	Emission Plot	emission.pdf
Test Report	Transmitter Duty Cycle Plot	af.pdf
Test Report	Conducted Emission Test Result	conduct.pdf
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

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**EXHIBIT 1  
GENERAL DESCRIPTION**

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### 1.0 General Description

#### 1.1 Product Description

This product is a 2.4 GHz desktop gadget for Linux. It contains a Tux droid (robot), a Fux (USB fish dongle), an USB cable, a programming cable, an AC power adaptor and an IR remote control.

The Equipment Under Test (EUT) is the Fux (USB fish dongle), which operates at frequency range from 2401.056 MHz to 2482.272 MHz with 95 physical hopping channels and 20 logical channels. The USB fish dongle is powered through computer USB port.

Both of the Tux droid and the USB fish dongle use integral antenna.

The USB fish dongle has a LED indicator, a reset button, a USB port and a programming socket. When connecting USB fish dongle with a personal computer, the LED in the dongle will start to flicker. Through the 2.4 GHz RF link between the Tux droid and the USB fish dongle, the end users can use their PC to control the Tux droid enabling movement, activation of the LED's and the IR transmitter and operation of audio speaker and microphone. The Tux droid provides information from his environment from IR receiver, push sensors, light sensor, microphone and internal switches to report on the status of the mechanics. The detail features of the Tux droid are listed below.

Features list:

- moving wings
- moving eye lids
- blue LED's in the eyes can be lit
- open and close the beak
- spin in both direction
- play sounds
- record voice
- talk with IR signals (e.g. TV controller) or remote control
- detect the light level with the photodiode
- push sensors on the head and wings can be triggered
- MP3 players can be connected to the audio-in for playback through the Tux droid speaker
- Headphones can be connected to the audio out

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This product is shipped without any software for the computer. But test programs and drivers are available for download from the website stated in the user manual.

The end users can program the Tux droid to operate the above features. To reprogram or firmware upgrade of the Tux droid, use the provided programming cable to connect the Tux droid to the USB fish dongle and load the program from PC to Tux droid via USB fish dongle. In this programming mode, both of the Tux droid and the USB fish dongle will disable their RF links.

The circuit description is saved with filename: descri.pdf

### 1.2 Related Submittal(s) Grants

This is an application for certification of a Fux (USB fish dongle). The Tux droid for this Fux (USB fish dongle) is authorized by Certification procedure with FCC ID: UYHTD-7UX157EHPWN.

### 1.3 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.

### 1.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data and conducted data are 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 2  
SYSTEM TEST CONFIGURATION**

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### 2.0 System Test Configuration

#### 2.1 Justification

For emissions testing, the equipment under test (EUT) was setup to transmit continuously in transmission mode and transfer data continuously in programming mode 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. The device was indirectly powered by AC power lines through PC USB Port.

For the measurements, the EUT is placed on the wooden turntable. If the device can attach to peripherals, they are connected and operational (as typical as possible).

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.

#### 2.2 EUT Exercising Software

The test programs used during radiated and conducted emissions testing are listed on below.

- (1) Linux - Ubuntu 6.10 (Supplied by Client)
- (2) Functional testing software "Terminal" (Supplied by Client)

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### 2.3 Support Equipment List and Description

The FCC ID's for all equipment, plus descriptions of all cables used in the tested system are:

*HARDWARE:*

- (1) PC set (for radiated emissions test, supplied by Intertek)
  - i. HP PC, Model: DC5100, S/N: CNG611064K, DoC Product with FCC Part 15 Subpart B complied
  - ii. HP Keyboard, Model: SK-2502, S/N: M981135799, FCC ID: GYUR41SK
  - iii. Philips Monitor, Model: 150B4CG, S/N: CX000409301774, DoC Product with FCC Part 15 Subpart B complied
  - iv. HP Mouse, Model: M-S34, S/N: LZC84609205, FCC ID: DZL211029
  - v. HP Printer, Model: C2642A, S/N: SG6121702C, FCC ID: B94C2642X
  
- (2) PC set (for conducted emissions test, supplied by Intertek)
  - i. HP PC, Model: DC5100, S/N: CNG611064K, DoC Product with FCC Part 15 Subpart B complied
  - ii. HP Keyboard, Model: SK-2502C, S/N: M000535630, DoC Product with FCC Part 15 Subpart B complied
  - iii. Sony Monitor, Model: SDM-S51R, S/N: 9009045, DoC Product with FCC Part 15 Subpart B complied
  - iv. HP Mouse, Model: M-S48a, S/N: LZB13471054, FCC ID: JNZ201213
  - v. HP Printer, Model: C6431D, S/N: CN23B 686ZP, DoC Product with FCC Part 15 Subpart B complied
  
- (3) Hayes Modem, Model: 6800CN, S/N: A00900153317, FCC ID: BFJ9D907-00038 (Supplied by Interekt)
  
- (4) Tux droid, Model: TD-100, FCC ID: UYHTD-7UX157EHPWN (Supplied by Client)

*CABLES:*

- (1) A 1.08 m USB cable (Supplied by Client)
  
- (2) A 0.32 m, 5 wires untwisted programming cable (Supplied by Client)
  
- (3) Cabling for PC set, printer and modem (Supplies by Intertek)
  - i. Three AC power cables (2m, unshielded) for PC, printer and monitor
  - ii. One serial port cable (1.5m, shielded, metal hook)
  - iii. One parallel port cable (1.5m, shielded)
  - iv. One monitor cable (1m shielded, ferrite)
  - v. One telephone line (2m, unshielded)

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### 2.4 Measurement Uncertainty

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

### 2.5 Equipment Modification

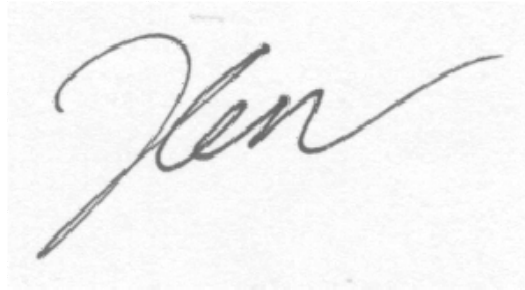
Any modifications installed previous to testing by KYSOH SA will be incorporated in each production model sold/leased in the United States.

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

All the items listed under section 2.0 of this report are confirmed by:

*Confirmed by:*

*Lam Chun Cheong, Kenneth  
Assistant Supervisor  
Intertek Testing Services  
Agent for KYSOH SA*



\_\_\_\_\_ Signature

\_\_\_\_\_ Date  
May 3, 2007

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**EXHIBIT 3  
EMISSION RESULTS**

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### 3.0 Emission Results

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.

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### 3.1 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 dB $\mu$ V/m  
RA = Receiver Amplitude (including preamplifier) in dB $\mu$ 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 dB $\mu$ 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 dB $\mu$ V/m was converted to its corresponding level in  $\mu$ V/m.

$$\begin{aligned} RA &= 62.0 \text{ dB}\mu\text{V} \\ AF &= 7.4 \text{ dB} \\ CF &= 1.6 \text{ dB} \\ AG &= 29.0 \text{ dB} \\ PD &= 0 \text{ dB} \\ AV &= -10 \text{ dB} \\ FS &= RA + AF + CF - AG + PD + AV \\ FS &= 62 + 7.4 + 1.6 - 29 + 0 + (-10) = 32 \text{ dB}\mu\text{V/m} \end{aligned}$$

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

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### 3.2 Radiated Emission Configuration Photograph

Worst Case Radiated Emission

at 48.002 MHz

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



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### 3.3 Radiated Emission Data

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

Judgement : Passed by 2.2 dB margin compare with quasi-peak limit

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#### **TEST PERSONNEL:**



\_\_\_\_\_  
*Tester Signature*

Gary M. K. Li, Senior Lead Engineer  
*Typed/Printed Name*

May 3, 2007  
*Date*

## INTERTEK TESTING SERVICES

Company: KYSOH SA  
 Model: FX-100  
 Mode : TX-Channel 0

Date of Test: March 9, 2007

Table 1

### Pursuant to FCC Part 15 Section 15.249 Radiated Emissions Requirements

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre- Amp (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Average Factor (-dB)	Calculated at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	2401.100	106.9	34	29.4	102.3	0.0	102.3	114	-11.7
H	2401.100	106.9	34	29.4	102.3	36.8	65.5	94	-28.5
V	4802.200	60.5	34	34.9	61.4	0.0	61.4	74	-12.6
V	4802.200	60.5	34	34.9	61.4	36.8	24.6	54	-29.4
V	7203.300	49.9	34	37.9	53.8	0.0	53.8	74	-20.2
V	7203.300	49.9	34	37.9	53.8	36.8	17.0	54	-37.0
V	9604.400	46.2	34	40.4	52.6	0.0	52.6	74	-21.4
V	9604.400	46.2	34	40.4	52.6	36.8	15.8	54	-38.2
H	12005.500	43.3	34	40.5	49.8	0.0	49.8	74	-24.2
H	12005.500	43.3	34	40.5	49.8	36.8	13.0	54	-41.0
H	14406.600	42.9	34	40.0	48.9	0.0	48.9	74	-25.1
H	14406.600	42.9	34	40.0	48.9	36.8	12.1	54	-41.9

- 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 is used for the emission over 1000MHz.
  5. Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).
- \* Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Gary M. K. Li

## INTERTEK TESTING SERVICES

Company: KYSOH SA  
 Model: FX-100  
 Mode : TX-Channel 47

Date of Test: March 9, 2007

Table 2

### Pursuant to FCC Part 15 Section 15.249 Radiated Emissions Requirements

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Average Factor (-dB)	Calculated at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	2441.690	106.4	34	29.4	101.8	0.0	101.8	114	-12.2
H	2441.690	106.4	34	29.4	101.8	36.8	65.0	94	-29.0
V	4883.380	62.3	34	34.9	63.2	0.0	63.2	74	-10.8
V	4883.380	62.3	34	34.9	63.2	36.8	26.4	54	-27.6
V	7325.070	49.3	34	37.9	53.2	0.0	53.2	74	-20.8
V	7325.070	49.3	34	37.9	53.2	36.8	16.4	54	-37.6
V	9766.760	45.7	34	40.4	52.1	0.0	52.1	74	-21.9
V	9766.760	45.7	34	40.4	52.1	36.8	15.3	54	-38.7
H	12208.450	43.1	34	40.5	49.6	0.0	49.6	74	-24.4
H	12208.450	43.1	34	40.5	49.6	36.8	12.8	54	-41.2
H	14650.140	44.6	34	38.4	49.0	0.0	49.0	74	-25.0
H	14650.140	44.6	34	38.4	49.0	36.8	12.2	54	-41.8

- 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 is used for the emission over 1000MHz.
  5. Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).
- \* Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Gary M. K. Li

## INTERTEK TESTING SERVICES

Company: KYSOH SA  
 Model: FX-100  
 Mode : TX-Channel 94

Date of Test: March 9, 2007

Table 3

### Pursuant to FCC Part 15 Section 15.249 Radiated Emissions Requirements

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Average Factor (-dB)	Calculated at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
H	2482.300	106.1	34	29.4	101.5	0.0	101.5	114	-12.5
H	2482.300	106.1	34	29.4	101.5	36.8	64.7	94	-29.3
V	4964.600	61.1	34	34.9	62.0	0.0	62.0	74	-12.0
V	4964.600	61.1	34	34.9	62.0	36.8	25.2	54	-28.8
V	7446.900	50.4	34	37.9	54.3	0.0	54.3	74	-19.7
V	7446.900	50.4	34	37.9	54.3	36.8	17.5	54	-36.5
V	9929.200	46.4	34	40.4	52.8	0.0	52.8	74	-21.2
V	9929.200	46.4	34	40.4	52.8	36.8	16.0	54	-38.0
H	12411.500	43.2	34	40.5	49.7	0.0	49.7	74	-24.3
H	12411.500	43.2	34	40.5	49.7	36.8	12.9	54	-41.1
H	14893.800	44.6	34	38.4	49.0	0.0	49.0	74	-25.0
H	14893.800	44.6	34	38.4	49.0	36.8	12.2	54	-41.8

- 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 is used for the emission over 1000MHz.
  5. Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).
- \* Emission within the restricted band meets the requirement of part 15.205.

Test Engineer: Gary M. K. Li

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Company: KYSOH SA  
Model: FX-100  
Mode : Stand-by mode

Date of Test: March 9, 2007

Table 4

### Pursuant to FCC Part 15 Section 15.209 Radiated Emissions Requirements

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
V	36.001	37.9	16	10.0	31.9	40.0	-8.1
V	48.003	37.4	16	11.0	32.4	40.0	-7.6
V	60.005	38.0	16	10.0	32.0	40.0	-8.0
H	120.007	34.0	16	14.0	32.0	43.5	-11.5
H	192.008	33.0	16	16.0	33.0	43.5	-10.5
H	240.009	31.5	16	19.0	34.5	46.0	-11.5
H	360.014	27.7	16	24.0	35.7	46.0	-10.3
H	480.018	26.2	16	26.0	36.2	46.0	-9.8
H	540.020	24.0	16	28.0	36.0	46.0	-10.0
H	960.023	18.9	16	33.0	35.9	54.0	-18.1

- 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: Gary M. K. Li

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## INTERTEK TESTING SERVICES

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Company: KYSOH SA  
Model: FX-100  
Mode : Programming mode

Date of Test: March 9, 2007

Table 5

### Pursuant to FCC Part 15 Section 15.109 Radiated Emissions Requirements

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-amp (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
V	31.710	38.4	16	10.0	32.4	40.0	-7.6
V	36.001	37.2	16	10.0	31.2	40.0	-8.8
V	48.002	42.8	16	11.0	37.8	40.0	-2.2
V	65.420	42.8	16	9.0	35.8	40.0	-4.2
H	120.004	34.4	16	14.0	32.4	43.5	-11.1
H	180.005	28.6	16	20.0	32.6	43.5	-10.9
H	190.075	33.0	16	16.0	33.0	43.5	-10.5
H	216.007	32.1	16	17.0	33.1	46.0	-12.9
H	240.009	30.6	16	19.0	33.6	46.0	-12.4
H	360.010	25.8	16	24.0	33.8	46.0	-12.2
H	480.011	25.6	16	26.0	35.6	46.0	-10.4
H	540.014	23.8	16	28.0	35.8	46.0	-10.2
H	720.017	22.0	16	30.0	36.0	46.0	-10.0
H	960.018	19.4	16	33.0	36.4	54.0	-17.6

- 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: Gary M. K. Li

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### 3.4 Radiated Emission on the Bandedge

From the following plots, they show that the fundamental emissions are confined in the specified band (2400MHz and 2483.5MHz). In case of the fundamental emissions are within two standard bandwidths from the bandedge, the delta measurement technique is used for determining bandedge compliance. Standard bandwidth is the bandwidth specified by ANSI C63.4 (2003) for frequency being measured.

Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of part 15.249(d).

Please refer to the following plots for radiated emission on the bandedge:

Plot 1A\*: Low Channel Emissions  
Plot 1B\*: High Channel Emissions

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

\* Bandedge compliance is determined by applying marker-delta method, i.e.

$$\begin{aligned} \text{Resultant peak field strength} &= \text{Fundamental peak emissions} - \text{delta from the plot} \\ &= 102.3\text{dB}\mu\text{V/m} - 35.6\text{dB} \\ &= 66.7\text{dB}\mu\text{V/m} \end{aligned}$$

The resultant peak field strength meets the general peak radiated emission limit in section 15.209, which does not exceed 74dB $\mu$ V/m.

$$\begin{aligned} \text{Resultant AVG field strength} &= \text{Fundamental AVG emissions} - \text{delta from the plot} \\ &= 65.5\text{dB}\mu\text{V/m} - 35.6\text{dB} \\ &= 29.9\text{dB}\mu\text{V/m} \end{aligned}$$

The resultant average field strength meets the general average radiated emission limit in section 15.209, which does not exceed 54dB $\mu$ V/m.

## INTERTEK TESTING SERVICES

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### 3.5 Transmitter Duty Cycle Calculation and Measurement, FCC section 15.35 (b), (c)

The signal from the EUT was coupled to a spectrum analyzer. The analyzer centre frequency was set to EUT RF channel carrier. The SWEPT function on the analyzer was set to ZERO SPAN. The transmitter ON time was determined from the resultant time-amplitude display.

For electronic filing, the transmitter timing plots are saved with filename: af.pdf

$$\begin{aligned}\text{Duty cycle (DC)} &= \text{Maximum ON time in one period} / \text{one period of time} \\ &= 0.576 \text{ ms} / (20 \text{ channels} \times 2) \text{ ms}\end{aligned}$$

$$\begin{aligned}\text{Duty cycle correction, dB} &= 20 \log_{10} (\text{DC}) \\ &= 20 \log_{10} (0.0144) \\ &= -36.8 \text{ dB}\end{aligned}$$



## INTERTEK TESTING SERVICES

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3.6 Line Conducted Configuration Photograph  
Worst Case Line-Conducted Configuration  
at 2.015 MHz

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

## INTERTEK TESTING SERVICES

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### 3.7 Line Conducted Emission Data

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

Judgement : Passed by 1.7 dB margin compare with average limit

#### **TEST PERSONNEL:**



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*Tester Signature*

Gary M. K. Li, Senior Lead Engineer  
*Typed/Printed Name*

May 3, 2007  
*Date*

## INTERTEK TESTING SERVICES

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Company: KYSOH SA  
Model: FX-100

Date of Test: March 9, 2007

### Conducted Emissions

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

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**EXHIBIT 4  
EQUIPMENT PHOTOGRAPHS**

## INTERTEK TESTING SERVICES

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### 4.0 Equipment Photographs

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

**INTERTEK TESTING SERVICES**

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**EXHIBIT 5  
PRODUCT LABELLING**

## INTERTEK TESTING SERVICES

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### 5.0 **Product Labelling**

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

**INTERTEK TESTING SERVICES**

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**EXHIBIT 6  
TECHNICAL SPECIFICATIONS**



## INTERTEK TESTING SERVICES

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### 6.0 Technical Specifications

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

**INTERTEK TESTING SERVICES**

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**EXHIBIT 7  
INSTRUCTION MANUAL**

## INTERTEK TESTING SERVICES

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### 7.0 Instruction Manual

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

The required FCC Information to the User is stated on P.5 and P.11 to 12 of the Instruction Manual.

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