RF EXPOSURE REPORT

REPORT NO.: SA120113E07

MODEL NO.: FXE2000-G

FCC ID: PQRFXE2000-G

RECEIVED: Jan. 13, 2012

TESTED: Apr. 17, 2012

ISSUED: May 15, 2012

APPLICANT: Contec Co., Ltd.

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ISSUED BY: Bureau Veritas Consumer Products Services
(H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA120113E07	Original release	May 15, 2012

1. CERTIFICATION

PRODUCT: Wireless LAN Adapter

BRAND NAME: CONTEC

MODEL NO.: FXE2000-G

TEST SAMPLE: ENGINEERING SAMPLE

APPLICANT: Contec Co., Ltd.

STANDARDS: FCC Part 2 (Section 2.1091)

FCC OET Bulletin 65, Supplement C (01-01)

IEEE C95.1

The above equipment (Model: FXE2000-G) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : _____, DATE: _May 15, 2012_
(Midoli Peng, Specialist)

APPROVED BY : _____, DATE: _May 15, 2012_
(May Chen, Deputy Manager)

2. RF EXPOSURE LIMIT

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FREQUENCY RANGE (MHz)	ELECTRIC FIELD STRENGTH (V/m)	MAGNETIC FIELD STRENGTH (A/m)	POWER DENSITY (mW/cm^2)	AVERAGE TIME (minutes)
LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE				
300-1500	…	…	F/1500	30
1500-100,000	…	…	1.0	30

F = Frequency in MHz

3. MPE CALCULATION FORMULA

$Pd = (Pout*G) / (4*pi*r^2)$

where

Pd = power density in mW/cm^2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

pi = 3.1416

r = distance between observation point and center of the radiator in cm

4. CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

5. ANTENNA GAIN

The antennas combinations were provided to the EUT, please refer to the following table:

Set 1								
Brand	Model	Antenna Type	Peak Gain(dBi) (Exclude cable loss)	Net Gain (dBi) (Include cable loss)	Connecter Type	Cable Length (cm)	Cable Loss (dB)	Transmitter Circuit
FDK	AN1523	chip	2.4GHz: 2	2.4GHz: 0.6	U.FL	16	1.4	Chain (0) & Chain (1)
			5GHz :1	5GHz :-0.4				

Set 2									
Brand	Model	Antenna Type	Peak Gain(dBi) (Exclude cable loss)	Net Gain (dBi) (Include cable loss)	Connecter Type	Cable Length (cm)	Cable Loss (dB)	Total Cable Loss (dB)	Transmitter Circuit
Azure Solutions, Inc.	MR-1700-W	Vehicle	2.4GHz: 4	2.4GHz: 2.1695	Cable 1: R-SMA	Cable 1: 152	Cable 1: 0.9305	1.8305	Chain (0) & Chain (1)
					Cable 2: U.FL	Cable 2: 20	Cable 2: 0.9		

Set 3									
Brand	Model	Antenna Type	Peak Gain(dBi) (Exclude cable loss)	Net Gain (dBi) (Include cable loss)	Connecter Type	Cable Length (cm)	Cable Loss (dB)	Total Cable Loss (dB)	Transmitter Circuit
Azure Solutions, Inc.	MR-6000	Vehicle	5GHz :4	5GHz: 0.7978	Cable 1: R-SMA	Cable 1: 152	Cable 1: 1.5022	3.2022	Chain (0) & Chain (1)
					Cable 2: U.FL	Cable 2: 20	Cable 2: 1.7		

When operating Ant Set 2 or Set 3 that should connect cable1 & cable2 together.

Note :

The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

MODULATION MODE	TX/RX FUNCTION
802.11b	2Tx/2Rx
802.11g	2Tx/2Rx
802.11a	2Tx/2Rx
802.11n (20MHz)	2Tx/2Rx
802.11n (40MHz)	2Tx/2Rx

6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

For WLAN (2.4GHz):

802.11b

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2412-2462	120.640	5.18	20	0.079	1.00

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)
Effective Legacy Gain (dBi)=5.18

802.11g

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2412-2462	662.965	5.18	20	0.435	1.00

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)
Effective Legacy Gain (dBi)=5.18

802.11n (20MHz)

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2412-2462	480.912	2.1695	20	0.158	1.00

802.11n (40MHz)

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2422-2452	209.426	2.1695	20	0.069	1.00

For 15.247(5GHz):

802.11a

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
5745 ~ 5825	336.852	3.81	20	0.161	1.00

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi)=3.81

802.11n(20MHz)

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
5745 ~ 5825	321.691	0.7978	20	0.077	1.00

802.11n(40MHz)

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
5755 ~ 5795	347.652	0.7978	20	0.083	1.00

For 15.407(5GHz):

802.11a

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
5180-5240 5260-5320 5500-5580 & 5660-5700	62.559	3.81	20	0.030	1.00

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)
Effective Legacy Gain (dBi)=3.81

802.11n(20MHz)

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
5180-5240 5260-5320 5500-5580 & 5660-5700	56.170	0.7978	20	0.013	1.00

802.11n(40MHz)

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
5190-5230 5270-5310 5510-5550 & 5670	57.660	0.7978	20	0.014	1.00

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