

RF EXPOSURE REPORT

REPORT NO.: SA140128E04

MODEL NO.: FXE2000-DG

FCC ID: PQRFXE2000-DG

RECEIVED: Jan. 28, 2014

TESTED: Feb. 13 to 14, 2014

ISSUED: Apr. 01, 2014

APPLICANT: Contec Co., Ltd.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA140128E04	Original release	Apr. 01, 2014

1. CERTIFICATION

PRODUCT: Wireless LAN Adapter
BRAND NAME: CONTEC
MODEL NO.: FXE2000-DG
TEST SAMPLE: ENGINEERING SAMPLE
APPLICANT: Contec Co., Ltd.
TESTED DATE: Feb. 13 to 14, 2014
STANDARDS: FCC Part 2 (Section 2.1091)
FCC OET Bulletin 65, Supplement C (01-01)
IEEE C95.1

The above equipment (Model: FXE2000-DG) 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 : Phoenix Huang , **DATE:** Apr. 01, 2014
(Phoenix Huang, Specialist)

APPROVED BY : May Chen , **DATE:** Apr. 01, 2014
(May Chen, 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

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 provided to the EUT, please refer to the following table:

Transmitter Circuit	Brand	Model	Gain (dBi) (Exclude cable loss)	Cable Loss (dB)	Net Gain (dBi) (Include cable loss)	Antenna Type	Connector Type	Frequency range (GHz to GHz)	Cable Length (cm)
Chain (0)	FDK	A3001	2	1	1	Chip	U.FL	2.4~2.4835	6
			1	2	-1			5.15~5.85	
Chain (1)	FDK	A3001	2	1.5	0.5	Chip	U.FL	2.4~2.4835	16
			1	2.5	-1.5			5.15~5.85	

6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

For 15.247 (2.4GHz):

802.11b:

FREQUENCY BAND (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm ²)	LIMIT (mW/cm ²)
2412 - 2462	120.318	3.76	20	0.05689	1.00

NOTE: 1. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 3.76\text{dBi}$.

802.11g:

FREQUENCY BAND (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm ²)	LIMIT (mW/cm ²)
2412 - 2462	835.103	3.76	20	0.39488	1.00

NOTE: 1. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 3.76\text{dBi}$.

802.11n (HT20):

FREQUENCY BAND (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm ²)	LIMIT (mW/cm ²)
2412 - 2462	559.429	1	20	0.14011	1.00

802.11n (HT40):

FREQUENCY BAND (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm ²)	LIMIT (mW/cm ²)
2422 - 2452	532.945	1	20	0.13348	1.00

For 15.247 (5GHz):

802.11a:

FREQUENCY BAND (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm ²)	LIMIT (mW/cm ²)
5745 - 5825	399.714	1.76	20	0.11926	1.00

NOTE: 1. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 1.76\text{dBi}$.

802.11n (HT20):

FREQUENCY BAND (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm ²)	LIMIT (mW/cm ²)
5745 - 5825	413.316	-1	20	0.06531	1.00

802.11n (HT40):

FREQUENCY BAND (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm ²)	LIMIT (mW/cm ²)
5755 - 5795	402.163	-1	20	0.06355	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	55.700	1.76	20	0.01108	1.00

NOTE: 1. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 1.76\text{dBi}$.

802.11n (HT20):

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	53.423	-1	20	0.01063	1.00

802.11n (HT40):

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	54.645	-1	20	0.01087	1.00

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