RF EXPOSURE REPORT

REPORT NO.: SA120210E01 R1

MODEL NO.: D2F

FCC ID: RRK-D2F

RECEIVED: Feb. 10, 2012

TESTED: Feb. 17, 2012

ISSUED: Apr. 13, 2012

APPLICANT: Alpha Networks Inc.

ADDRESS: No.8 Li-shing 7th Rd., Science-based Industrial Park, Hsinchu, Taiwan, R.O.C.

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

LAB ADDRESS: No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.

TABLE OF CONTENTS

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA120210E01	Original release	Apr. 10, 2012
SA120210E01 R1	Modified Antenna Connecter type of the EUT	Apr. 13, 2012

1. CERTIFICATION

PRODUCT:	MY NET N600
BRAND NAME:	WD
MODEL NO.:	D2F
TEST SAMPLE:	MASS-PRODUCTION
APPLICANT:	Alpha Networks Inc.
TESTED DATE:	Feb. 17, 2012
STANDARDS:	FCC Part 2 (Section 2.1091)
	FCC OET Bulletin 65, Supplement C (01-01)
	IEEE C95.1

The above equipment (Model: D2F) 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: _Apr. 13, 2012_
(Lori Chung, Specialist)

APPROVED BY : _____ , DATE: _Apr. 13, 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/cm2

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

6. The antennas provided to the EUT, please refer to the following table:

For 2.4GHz					
Transmitter Circuit	Brand	Model	Peak Gain (dBi)	Antenna Type	Connecter Type
Chain (0)	WHA YU GROUP	C037-511171-A (SSR-14424)	3	PCB	NA
Chain (1)	WHA YU GROUP	C037-511170-A (SSR-2011130)	3	PCB	NA
For 5GHz					
Transmitter Circuit	Brand	Model	Peak Gain (dBi)	Antenna Type	Connecter Type
Chain (0)	WHA YU GROUP	C037-511172-A (SSR-2011133)	5	PCB	MHF
Chain (1)	WHA YU GROUP	C037-511176-A (SSR-14470)	5	PCB	MHF

7. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

For 15.247(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	360.0	6.01	20	0.286	1.00

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)
Effective Legacy Gain (dBi)=6.01

802.11g:

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2412-2462	485.4	6.01	20	0.385	1.00

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)
Effective Legacy Gain (dBi)=6.01

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	485.4	3	20	0.193	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	442.6	3	20	0.176	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	485.6	8.01	20	0.611	1.00

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)
Effective Legacy Gain (dBi)=8.01

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	789.7	5	20	0.497	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	762.2	5	20	0.480	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	28.3	8.01	20	0.036	1.00

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)
Effective Legacy Gain (dBi)=8.01

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	46.0	5	20	0.029	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	48.0	5	20	0.030	1.00

CONCLUSION:

Both of the 2.4GHz and 5GHz can transmit simultaneously, the formula of calculated the MPE is:

CPD_1 / LPD_1 + CPD_2 / LPD_2 + ……etc. < 1
CPD = Calculation power density
LPD = Limit of power density

Therefore, the worst-case situation is 0.385 / 1 + 0.611 / 1 = 0.996, which is less than "1". This confirmed that the device comply with FCC 1.1310 MPE limit.

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