



EN 50385 REPORT

REPORT NO.: SE140718E03

MODEL NO.: ECW5320, ECW5320-L, ECW5320-C,
ECW3320, ECW3320-L, ECW3320-C,
SS-N300-EU, SS-AC1200-EU

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APPLICANT: Accton Technology Corporation

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SE140718E03	Original release	Aug. 28, 2014



1. CERTIFICATION

PRODUCT: 802.11ac Dual-Band Wireless Access Point,
802.11b/g/n Wireless Access Point,
2.4G Ceiling/Wall/Desktop Enterprise AP,
Dualband Ceiling/Wall/Desktop Enterprise AP (802.11ac)

BRAND NAME: Edge-corE, IgniteNet

MODEL NO.: ECW5320, ECW5320-L, ECW5320-C, ECW3320,
ECW3320-L, ECW3320-C, SS-N300-EU, SS-AC1200-EU

TEST SAMPLE: ENGINEERING SAMPLE

APPLICANT: Accton Technology Corporation

TESTED: July 01, 2014

STANDARD: EN 50385: 2002

The above equipment (Model: SS-AC1200-EU) 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.

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(Midoli Peng, Specialist)

APPROVED BY : May Chen, **DATE:** Aug. 28, 2014
(May Chen, Manager)

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	802.11ac Dual-Band Wireless Access Point, 802.11b/g/n Wireless Access Point, 2.4G Ceiling/Wall/Desktop Enterprise AP, Dualband Ceiling/Wall/Desktop Enterprise AP (802.11ac)
MODEL NO.	ECW5320, ECW5320-L, ECW5320-C, ECW3320, ECW3320-L, ECW3320-C, SS-N300-EU, SS-AC1200-EU
TYPE OF THE EQUIPMENT	Stand-alone
NOMINAL VOLTAGE	DC12V from power adapter or DC 48V from PoE
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only.
MODULATION TECHNOLOGY	DSSS,OFDM
TRANSFER RATE	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n : up to 300Mbps 802.11ac: up to 866.7Mbps
OPERATING FREQUENCY	For 2.4GHz: 2412MHz ~ 2472MHz For 5GHz: 5180 MHz ~5240 MHz
NUMBER OF CHANNEL	For 2.4GHz: 802.11b/g, 802.11n (HT20): 13 802.11n (HT40) : 9 For 5GHz : 802.11a, 802.11n (HT20) , 802.11ac (VHT20): 4 802.11n (HT40) , 802.11ac (VHT40): 2 802.11ac (VHT80): 1
ADAPTIVE/NON-ADAPTIVE	Adaptive equipment without the possibility to switch to a non-adaptive mode
EIRP POWER (Measured Max. Average)	For 2.4GHz: 19.90dBm For 5GHz: 22.70dBm
TEMPERATURE RANGE	0°C ~ 40°C
ANTENNA TYPE	Please see NOTE
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ASSOCIATED DEVICES	Adapter × 1

Note:

- 2.4GHz and 5GHz technology can transmit at same time.
- The EUT has two brand names, four product names and eight model names, which are identical to each other in all aspects except for the following:

Brand	Product Name	Model Name	Radio 2.4G	Radio 5G	Software
Edge-corE	802.11b/g/n Wireless Access Point	ECW3320	Support	Non-Support	Fat
		ECW3320-L			Fit
		ECW3320-C			Fit
	802.11ac Dual-Band Wireless Access Point	ECW5320	Support	Support	Fat
		ECW5320-L			Fit
		ECW5320-C			Fit
IgniteNet	2.4G Ceiling/Wall/Desktop Enterprise AP	SS-N300-EU	Support	Non-Support	Fat
	Dualband Ceiling/Wall/Desktop Enterprise AP (802.11ac)	SS-AC1200-EU	Support	Support	Fat

From the above models, model: **SS-AC1200-EU** was selected as representative model for the test and its data were recorded in this report.

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

For 2.4G WLAN used						
Set	Transmitter Circuit	Antenna Gain(dBi) <including cable loss>	Frequency range (MHz ~ MHz)	Antenna Type	Connector Type	Cable Length (mm)
1	Chain (0)	3.16	2400~2500	PCB Dipole	IPEX	255 (Gray)
	Chain (1)	4.04				150 (Blue)
For 5G WLAN used						
Set	Transmitter Circuit	Antenna Gain(dBi) <including cable loss>	Frequency range (MHz ~ MHz)	Antenna Type	Connector Type	Cable Length (mm)
1	Chain (0)	5.07	5150~5850	PCB Dipole	MMCS	65 (White)
	Chain (1)	3.97				140 (Black)

- The EUT must be supplied with a power adapter as following table:

Brand	Model No.	Spec.
Sunny	SYS1308-2412-W2E	Input: 100-240V, 1.0A, 50-60Hz Output: 12V, 2A DC power cable: 1.83m, unshielded



A D T

5. The EUT incorporates a MIMO function without beamforming.

MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11a	6 ~ 54Mbps	1TX (Diversity)	2RX
802.11b	1 ~ 11Mbps	1TX (Diversity)	2RX
802.11g	6 ~ 54Mbps	1TX (Diversity)	2RX
802.11n (HT20) & 802.11n (HT40)	MCS 0~7	1TX (Diversity)	2RX
	MCS 8~15	2TX	2RX
802.11ac (VHT20)	MCS0~8 (256QAM) Nss= 1	1TX (Diversity)	2RX
	MCS0~8 (256QAM) Nss= 2	2TX	2RX
802.11ac (VHT40) & 802.11ac (VHT80)	MCS0~9 (256QAM) Nss= 1	1TX (Diversity)	2RX
	MCS0~9 (256QAM) Nss= 2	2TX	2RX

6. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3. RF EXPOSURE MEASUREMENT

3.1 INTRODUCTION

This product standard applies to radio base stations and fixed terminal stations for wireless telecommunication systems, operating in the frequency range 110 MHz to 40 GHz.

The object of this standard is to demonstrate the compliance of such product with the basic restrictions (directly or indirectly via compliance with reference levels) related to general public exposure to radio frequency electromagnetic fields.

Normative reference

EN 50383, Basic standard for the calculation and measurement of human exposure to electromagnetic fields from radio base stations and fixed terminal stations for wireless telecommunication systems (110 MHz ~ 40 GHz).

Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz) (Official Journal L 197 of 30 July 1999).

3.2 LIMIT

According to EN 50385:2002, the criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified 1999/519/EC.

FREQUENCY RANGE (GHz)	E-FIELD STRENGTH (V/m)
2 ~ 300	61

3.3 CLASSIFICATION OF THE ASSESSMENT METHODS

The antenna of the product, under normal use condition is at least 20 cm away from the body of the user. Warning statement to the user for keeping at least 20cm separation distance and the prohibition of operating to a person has been printed on the user's manual. So, this product under normal use is located on electromagnetic far field between the human body.

Far Field Calculation Formula

$$E = \eta_0 H = \frac{\sqrt{30PG(\theta, \phi)}}{r}$$

G = antenna gain relative to an isotropic antenna
 θ, ϕ = elevation and azimuth angles to point of investigation
r = distance from observation point to the antenna
 η_0 = Characteristic impedance of free space

3.4 CALCULATION RESULTS

CALCULATION FOR MAXIMUM EIRP

2.4GHz

Output Power EIRP (dBm)	Output Power EIRP (mW)	E-Field Strength (V/m)	E-Field Strength Limit (V/m)	PASS / FAIL
19.90	97.724	8.561	61	PASS

5GHz

Output Power EIRP (dBm)	Output Power EIRP (mW)	E-Field Strength (V/m)	E-Field Strength Limit (V/m)	PASS / FAIL
22.70	186.209	11.818	61	PASS

Conclusion:

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

$$(CEF1 / LEF1)^2 + (CEF2 / LEF2)^2 + \dots \text{etc.} < 1$$

CEF = Calculation E-Field Strength

LEF = Limit of E-Field Strength

Therefore, the calculation of this situation is $(8.561 / 61)^2 + (11.818 / 61)^2 = 0.057$, which is less than the "1" limit.

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