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RF EXPOSURE REPORT

REPORT NO.: SA130104C26-1

MODEL NO.: XR500

FCC ID: SK6-XR520

RECEIVED: Jan. 04, 2013

TESTED: Jan. 10 ~ Jan. 26, 2013

ISSUED: Jan. 30, 2013

APPLICANT: Xirrus, INC

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California 91320

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

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A D T

TABLE OF CONTENTS

RELEASE CONTROL RECORD.....	3
1. CERTIFICATION	4
2. RF EXPOSURE	5
2.1 LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)	5
2.2 MPE CALCULATION FORMULA	5
2.3 CLASSIFICATION	5
2.4 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER	6



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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA130104C26-1	Original release	Jan. 30, 2013



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1. CERTIFICATION

PRODUCT: Xirrus Wireless Array
MODEL NO.: XR500
BRAND: Xirrus
APPLICANT: Xirrus, INC
TESTED: Jan. 10 ~ Jan. 26, 2013
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: **FCC Part 2 (Section 2.1091)**
FCC OET Bulletin 65, Supplement C (01-01)
IEEE C95.1

The above equipment (model: XR500) 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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Jemma Yang / Specialist

APPROVED BY : Ken Liu , **DATE :** Jan. 30, 2013
Ken Liu / Manager

2. RF EXPOSURE

2.1 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

2.2 MPE calculation Formula

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

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

2.3 Classification

The antenna of this product, under normal use condition, is at least 25cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Calculation result of maximum conducted power

2.4G + 5G combo Module

FREQUENCY BAND (MHz)	MODULATION MODE	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
2412-2462	802.11b	23.05	7.01	25	0.1291	1
	802.11g	28.63	7.01	25	0.4666	1
	802.11n (20MHz)	27.88	7.01	25	0.3926	1
	802.11n (40MHz)	26.24	7.01	25	0.2691	1
5180-5240	802.11a	15.66	7.01	25	0.0235	1
	802.11n (20MHz)	15.31	7.01	25	0.0217	1
	802.11n (40MHz)	16.41	7.01	25	0.0280	1
5745-5825	802.11a	26.51	7.01	25	0.2864	1
	802.11n (20MHz)	26.66	7.01	25	0.2964	1
	802.11n (40MHz)	26.66	7.01	25	0.2964	1

5G only Module

FREQUENCY BAND (MHz)	MODULATION MODE	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
5180-5240	802.11a	15.54	7.01	25	0.0229	1
	802.11n (20MHz)	15.58	7.01	25	0.0231	1
	802.11n (40MHz)	16.43	7.01	25	0.0281	1
5745-5825	802.11a	27.01	7.01	25	0.3213	1
	802.11n (20MHz)	26.54	7.01	25	0.2884	1
	802.11n (40MHz)	25.97	7.01	25	0.2529	1



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NOTE:

Directional gain = 4dBi + $10\log(2)$ = 7.01dBi

CONCLUSION:

Both of the WLAN 2.4G & 5.0G can transmit simultaneously, the formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

2.4G + 5G combo Module: WLAN 2.4G + WLAN 5.0G = 0.4666 + 0.3213 = 0.7879

Therefore, the maximum calculation of this situation is 0.7879, which is less than the “1” limit.