RF EXPOSURE REPORT

REPORT NO.:	SA131223C35G
MODEL NO.:	XR600
FCC ID:	SK6-XR620
RECEIVED:	Dec. 12, 2013
TESTED:	Dec. 19, 2013 ~ Sep. 11, 2014
ISSUED:	Sep. 15, 2014

APPLICANT:	Xirrus, INC.
ADDRESS:	2101 Corporate Center Driver Thousand Oaks, California 91320

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
LAB ADDRESS:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
TEST LOCATION:	No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

This report should not be used by the client to claim product certification, approval, or endorsement by any government agencies.

TABLE OF CONTENTS

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA131223C35G	Original release.	Sep. 15, 2014

1. CERTIFICATION

PRODUCT:	802.11ac 2x2 AP
MODEL:	XR600
BRAND:	Xirrus
APPLICANT:	Xirrus, INC.
TESTED:	Dec. 19, 2013 ~ Sep. 11, 2014
TEST SAMPLE:	ENGINEERING SAMPLE
STANDARDS:	**FCC Part 2 (Section 2.1091)**
	KDB 447498 D03
	IEEE C95.1

The above equipment (model: XR600) 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 :** Sep. 15, 2014
Ivy Lin / Specialist

APPROVED BY : _____ **, DATE :** Sep. 15, 2014
Ken Liu / Senior 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

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

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

2.3 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**.

2.4 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

TEST MODE A (Radio 1)

FREQUENCY BAND	MODE	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm^2)	LIMIT (mW/cm^2)
2412 ~ 2462	802.11b	24.01	6.5	20	0.224	1
	802.11g	23.93	6.5	20	0.220	1
	802.11n (20MHz)	23.89	3.48	20	0.109	1
	802.11n (40MHz)	23.11	3.48	20	0.091	1
5180 ~ 5240	802.11a	13.99	8.2	20	0.033	1
	802.11n (20MHz)	16.59	5.16	20	0.030	1
	802.11n (40MHz)	16.98	5.16	20	0.033	1
	802.11ac (VHT80)	14.20	8.2	20	0.035	1
5260 ~ 5320	802.11a	19.05	8.2	20	0.106	1
	802.11n (20MHz)	19.03	5.16	20	0.052	1
	802.11n (40MHz)	18.37	5.16	20	0.045	1
	802.11ac (VHT80)	16.06	8.2	20	0.053	1
5500 ~ 5720	802.11a	18.90	8.2	20	0.102	1
	802.11n (20MHz)	18.87	5.16	20	0.050	1
	802.11n (40MHz)	18.71	5.16	20	0.048	1
	802.11ac (VHT80)	15.60	8.2	20	0.048	1
5745 ~ 5825	802.11a	23.14	8.2	20	0.271	1
	802.11n (20MHz)	23.22	5.16	20	0.137	1
	802.11n (40MHz)	23.28	5.16	20	0.139	1
	802.11ac (VHT80)	21.43	8.2	20	0.183	1

2.4GHz Band:

1. 802.11bg: Directional gain = 3.48dBi + 10log(2) = 6.5dBi
2. 802.11n (20MHz), 802.11n (40MHz): IEEE 802.11n, MCS = 8-15, NSS = 2, Directional gain = 3.48dBi + 10log(2/2) = 3.48dBi

5GHz Band:

1. 802.11a, 802.11ac (VHT80): Directional gain = 5.16dBi + 10log(2) = 8.2dBi
2. 802.11n (20MHz), 802.11n (40MHz): IEEE 802.11n, MCS = 8-15, NSS = 2, Directional gain = 5.16dBi + 10log(2/2) = 5.16dBi

TEST MODE B (Radio 2)

FREQUENCY BAND	MODE	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm^2)	LIMIT (mW/cm^2)
2412 ~ 2462	802.11b	23.89	6.5	20	0.218	1
	802.11g	23.91	6.5	20	0.219	1
	802.11n (20MHz)	23.92	3.48	20	0.109	1
	802.11n (40MHz)	23.32	3.48	20	0.095	1
5180 ~ 5240	802.11a	13.84	8.2	20	0.032	1
	802.11n (20MHz)	16.45	5.16	20	0.029	1
	802.11n (40MHz)	16.94	5.16	20	0.032	1
	802.11ac (VHT80)	14.20	8.2	20	0.035	1
5260 ~ 5320	802.11a	18.84	8.2	20	0.101	1
	802.11n (20MHz)	19.03	5.16	20	0.052	1
	802.11n (40MHz)	18.82	5.16	20	0.050	1
	802.11ac (VHT80)	16.02	8.2	20	0.053	1
5500 ~ 5720	802.11a	18.70	8.2	20	0.097	1
	802.11n (20MHz)	18.55	5.16	20	0.047	1
	802.11n (40MHz)	18.71	5.16	20	0.048	1
	802.11ac (VHT80)	14.89	8.2	20	0.041	1
5745 ~ 5825	802.11a	22.96	8.2	20	0.260	1
	802.11n (20MHz)	23.29	5.16	20	0.139	1
	802.11n (40MHz)	23.12	5.16	20	0.134	1
	802.11ac (VHT80)	20.93	8.2	20	0.163	1

2.4GHz Band:

1. 802.11bg: Directional gain = 3.48dBi + 10log(2) = 6.5dBi
2. 802.11n (20MHz), 802.11n (40MHz): IEEE 802.11n, MCS = 8-15, NSS = 2, Directional gain = 3.48dBi + 10log(2/2) = 3.48dBi

5GHz Band:

1. 802.11a, 802.11ac (VHT80): Directional gain = 5.16dBi + 10log(2) = 8.2dBi
2. 802.11n (20MHz), 802.11n (40MHz): IEEE 802.11n, MCS = 8-15, NSS = 2, Directional gain = 5.16dBi + 10log(2/2) = 5.16dBi

CONCLUSION:

Both of the RF modules can transmit simultaneously but cannot co-transmit in the same band, the formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

1. WLAN 2.4G (Radio 1) + WLAN 5G (Radio 2) = 0.224 + 0.260 = 0.484
2. WLAN 2.4G (Radio 2) + WLAN 5G (Radio 1) = 0.219 + 0.271 = 0.490

Therefore all the maximum calculations of above situations are less than the “1” limit.

---END---