



# RF EXPOSURE REPORT

**REPORT NO.:** SA130806E06B R1

**MODEL NO.:** F@ST 3284u

**FCC ID:** VW3FAST3284U

**RECEIVED:** July 14, 2014

**TESTED:** Sep. 23, 2014

**ISSUED:** Oct. 30, 2014

**APPLICANT:** Sagemcom

**ADDRESS:** 250 route de l'empereur, Rueil  
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**ISSUED BY:** Bureau Veritas Consumer Products Services  
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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA130806E06B	Original release	Oct. 13, 2014
SA130806E06B R1	Modified the section 1 information	Oct. 30, 2014



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## 1. CERTIFICATION

**PRODUCT:** Cable modem  
**BRAND NAME:** Sagemcom  
**MODEL NO.:** F@ST 3284u  
**TEST SAMPLE:** ENGINEERING SAMPLE  
**APPLICANT:** Sagemcom  
**TESTED DATE:** Sep. 23, 2014  
**STANDARDS:** FCC Part 2 (Section 2.1091)  
KDB 447498 D03  
IEEE C95.1

The above equipment (Model: F@ST 3284u) 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:** Oct. 30, 2014  
( Claire Kuan, Specialist )

**APPROVED BY :**  , **DATE:** Oct. 30, 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 <sup>2</sup> )	AVERAGE TIME (minutes)
<b>LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE</b>				
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/cm<sup>2</sup>

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

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

Transmitter Circuit	Brand	Model	Gain(dBi) Include cable loss	Antenna Type	Frequency range (MHz to MHz)	Connector Type
Chain (0)	MASTER WAVE	902P00089S0	2.89	PIFA	2400~2500	NA
Chain (1)	NA	NA	2.84	Print	2400~2500	NA

## 6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

### 802.11b

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2412 - 2462	83.368	2.89	20	0.03226	1.00

### 802.11g

FREQUENCY (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2412 - 2462	411.493	5.88	20	0.31702	1.00

NOTE: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 5.88\text{dBi}$ .

### 802.11n (HT20)

FREQUENCY BAND (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2412 - 2462	387.743	5.88	20	0.29873	1.00

NOTE: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 5.88\text{dBi}$ .

### 802.11n (HT40)

FREQUENCY BAND (MHz)	CONDUCTED POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2422 - 2452	257.437	5.88	20	0.19834	1.00

NOTE: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 5.88\text{dBi}$ .

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