



# RF EXPOSURE REPORT

**REPORT NO.:** SA121113C11

**MODEL NO.:** VIP2502

**FCC ID:** ACQ-VIP2502

**RECEIVED:** Oct. 04, 2012

**TESTED:** Oct. 04 ~ Dec. 18, 2012

**ISSUED:** Dec. 18, 2012

**APPLICANT:** Motorola Mobility, LLC.

**ADDRESS:** 101 Tournament Drive Horsham, PA 19044 United States

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

**LAB ADDRESS:** No. 47, 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.

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA121113C11	Original release	Dec. 18, 2012



## 1. CERTIFICATION

**PRODUCT:** VIP2502 set top box  
**MODEL:** VIP2502  
**BRAND:** Motorola  
**APPLICANT:** Motorola Mobility, LLC.  
**TESTED:** Oct. 04 ~ Dec. 18, 2012  
**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: VI P2502) 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** : Dec. 18, 2012  
Pettie Chen / Senior Specialist

**APPROVED BY** :  , **DATE** : Dec. 18, 2012  
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 <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

### 2.2 MPE CALCULATION FORMULA

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

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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

FREQUENCY BAND (MHz)	MODULATION MODE	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5180-5240	802.11a	16.55	6.12	20	0.037	1
	802.11n (20MHz)	16.60	6.12	20	0.037	1
	802.11n (40MHz)	16.97	6.12	20	0.041	1
5260-5320	802.11a	23.02	6.12	20	0.163	1
	802.11n (20MHz)	23.24	6.12	20	0.172	1
	802.11n (40MHz)	23.91	6.12	20	0.200	1
5500-5700	802.11a	23.01	6.82	20	0.191	1
	802.11n (20MHz)	23.23	6.82	20	0.201	1
	802.11n (40MHz)	23.90	6.82	20	0.235	1
5745-5825	802.11a	29.99	6.42	20	0.870	1
	802.11n (20MHz)	29.99	6.42	20	0.870	1
	802.11n (40MHz)	29.85	6.42	20	0.843	1

**NOTE:**

**For 5180~5320MHz:** Directional gain =  $0.1\text{dBi} + 10\log(4) = 6.12\text{dBi}$

**For 5500~5700MHz:** Directional gain =  $0.8\text{dBi} + 10\log(4) = 6.82\text{dBi}$

**For 5745~5825MHz:** Directional gain =  $0.4\text{dBi} + 10\log(4) = 6.42\text{dBi}$