



# RF EXPOSURE REPORT

**REPORT NO.:** SA140808E01 R1

**MODEL NO.:** EMG101

**FCC ID:** H9PEMG101

**RECEIVED:** July 10, 2014

**TESTED:** Aug. 12, 2014

**ISSUED:** Aug. 26, 2014

**APPLICANT:** Symbol Technologies, Inc.

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**MANUFACTURER:** Symbol Technologies, Inc.

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

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R.O.C.

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# TABLE OF CONTENTS

RELEASE CONTROL RECORD.....	3
1. CERTIFICATION.....	4
2. RF EXPOSURE LIMIT .....	5
3. MPE CALCULATION FORMULA.....	5
4. CLASSIFICATION.....	5
5. ANTENNA GAIN .....	5
6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER .....	6



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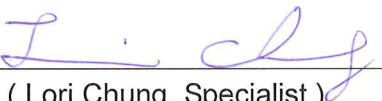
## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA140808E01	Original release	Aug. 21, 2014
SA140808E01 R1	Modified the antenna information on section 5.	Aug. 26, 2014

## 1. CERTIFICATION

**PRODUCT:** 802.15.4 Gateway  
**BRAND NAME:** Symbol  
**MODEL NO.:** EMG101  
**TEST SAMPLE:** ENGINEERING SAMPLE  
**APPLICANT:** Symbol Technologies, Inc.  
**TESTED DATE:** Aug. 12, 2014  
**STANDARDS:** FCC Part 2 (Section 2.1091)  
KDB 447498 D03  
IEEE C95.1

The above equipment (Model: EMG101) 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:** Aug. 26, 2014  
( Lori Chung, Specialist )

**APPROVED BY** :  , **DATE:** Aug. 26, 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)
LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 3. 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

### 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 antenna provided to the EUT, please refer to the following table:

Gain (dBi) Exclude cable loss	Cable Loss (dB)	Net Gain (dBi)	Connector Type	Frequency range (MHz to MHz)	Antenna Type
3.2	0.47	2.73	NA	2400~2500	Dipole

## 6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

### Radio circuit 1:

FREQUENCY– (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2405 ~ 2475	26.485	2.73	20	0.00988	1

### Radio circuit 2:

FREQUENCY– (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2405 ~ 2475	24.831	2.73	20	0.00926	1

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