

# RF EXPOSURE REPORT



Report No.: 17070172-FCC-H

Applicant	Homestar Corporation	
Product Name	Electric fireplace	
Model No.	TED23 G3	
Serial No.	TED20 G3, TED25 G3, TED26 G3, TED28 G3, TED20 BC, TED23 BC, TED25 BC, TED26 BC, TED28 BC	
Test Standard	FCC 2.1091.2016	
Test Date	March 22 to 29, 2017	
Issue Date	March 30, 2017	
Test Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Equipment complied with the specification		<input checked="" type="checkbox"/>
Equipment did not comply with the specification		<input type="checkbox"/>
Vera Zhang	David Huang	
Vera Zhang Test Engineer	David Huang Checked By	
This test report may be reproduced in full only Test result presented in this test report is applicable to the tested sample only		

Issued by:

**SIEMIC (SHENZHEN-CHINA) LABORATORIES**

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## Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

### Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety

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## CONTENTS

1. REPORT REVISION HISTORY .....	5
2. CUSTOMER INFORMATION .....	5
3. TEST SITE INFORMATION.....	5
4. EQUIPMENT UNDER TEST (EUT) INFORMATION .....	6
5. FCC §2.1091 - MAXIMUM PERMISSIBLE EXPOSURE (MPE) .....	7
6.1 APPLICABLE STANDARD.....	7
6.2 TEST RESULT .....	8

## 1. Report Revision History

Report No.	Report Version	Description	Issue Date
17070172-FCC-H	NONE	Original	March 30, 2017

## 2. Customer information

Applicant Name	Homestar Corporation
Applicant Add	18 Qi An Rd, Homestar Industrial Campus, Fuzhou, Fujian, China
Manufacturer	Homestar Corporation
Manufacturer Add	18 Qi An Rd, Homestar Industrial Campus, Fuzhou, Fujian, China

## 3. Test site information

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108
FCC Test Site No.	718246
IC Test Site No.	4842E-1
Test Software	Labview of SIEMIC version 2.0

#### **4. Equipment under Test (EUT) Information**

Description of EUT: Electric fireplace

Main Model: TED23 G3

Serial Model: TED20 G3,TED25 G3,TED26 G3,TED28 G3,TED20 BC,TED23 BC,TED25 BC,TED26 BC,TED28 BC

Equipment Category : DTS

Antenna Gain: 1.66dBi

Antenna Type: PCB antenna

Input Power: Spec: AC 120V,60Hz,1500Watts

Trade Name : N/A

FCC ID: 2ALNGHOMESTAR-TEDBC

Type of Modulation: GFSK

RF Operating Frequency (ies): 2402-2480 MHz

Number of Channels: 40CH

Port: Power Port

Date EUT received: March 21, 2017

Test Date(s): March 22 to 29, 2017

## 5. FCC §2.1091 - Maximum Permissible exposure (MPE)

### 6.1 Applicable Standard

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1091 RF exposure is calculated.

#### Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz

\* = Plane-wave equivalent power density

## 6.2 Test Result

Type	CH	Freq (MHz)	Conducted Power (dBm)	Tune Up Power (dBm)
Output power	Low	2402	-0.778	-1.5±1
	Mid	2440	-1.588	-1.5±1
	High	2480	-2.757	-2±1

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

Where: S = power density (in appropriate units, e.g. mW/cm<sup>2</sup>)

P = power input to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

For the antenna manufacturer provide only used limited to ERP/EIRP or radiated spurious emission test. The MPE evaluation as below:

Maximum output power at antenna input terminal: -0.5(dBm)

Maximum output power at antenna input terminal: 0.891(mW)

Prediction distance: >20 (cm)

Predication frequency: 2402(MHz) Low frequency

Antenna Gain (typical): 1.66(dBi)

The worst case is power density at predication frequency at 20 cm: 0.00003(mW/cm<sup>2</sup>)

MPE limit for general population exposure at predication frequency: 1.0(mW/cm<sup>2</sup>)

0.00003(mW/cm<sup>2</sup>) < 1 (mW/cm<sup>2</sup>)

**Result:** Pass