




# EN 62311 Test Report

**Project No.** : 1511C190  
**Equipment** : 150Mbps WiFi Module  
**Model Name** : GWF-7M02  
**Applicant** : Shenzhen Ogemray Tech CO.,LTD  
**Address** : 3/F~4/F,NO.5 Bldg, Dongwu Industrial Park,  
 Donghuan 1st Road, Longhua Town, Shenzhen,  
 China

**Date of Receipt** : Nov. 13, 2015  
**Date of Test** : Nov. 13, 2015 ~ Dec. 22, 2015  
**Issued Date** : Dec. 23, 2015  
**Tested by** : BTL Inc.

**Testing Engineer** :   
 (Niklaus Lai)

**Technical Manager** :   
 (David Mao)

**Authorized Signatory** :   
 (Steven Lu)

## B T L I N C .

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### REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-ETSP-2-1511C190	Original Issue	Dec. 23, 2015

## 1. CERTIFICATION

Equipment : 150Mbps WiFi Module  
Brand Name : N/A  
Model Name : GWF-7M02  
Applicant : Shenzhen Ogemray Tech CO.,LTD  
Manufacturer: Shenzhen Ogemray Tech CO.,LTD  
Address : 3/F~4/F,NO.5 Bldg, Dongwu Industrial Park, Donghuan 1st Road, Longhua Town, Shenzhen, China  
Factory : Shenzhen Ogemray Tech CO.,LTD  
Address : 3/F~4/F,NO.5 Bldg, Dongwu Industrial Park, Donghuan 1st Road, Longhua Town, Shenzhen, China  
Date of Test : Nov. 13, 2015 ~ Dec. 22, 2015  
Test Sample : Engineering Sample  
Standard(s) : EN 62311:2008

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-ETSP-2-1511C190) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

Equipment	150Mbps WiFi Module	
Brand Name	N/A	
Model Name	GWF-7M02	
Model Difference	N/A	
Product Description	Operation Frequency	2412~2472 MHz
	Modulation Technology	802.11b:DSSS 802.11g:OFDM 802.11n:OFDM
	Bit Rate of Transmitter	802.11b: 11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6 Mbps 802.11n: up to 150 Mbps
	EIRP Power (Max.)	802.11b: 18.90 dBm 802.11g: 16.99 dBm 802.11n (20MHz): 14.87 dBm 802.11n (40MHz): 14.87 dBm
Power Source	Supplied from host system.	
Power Rating	EUT I/P: DC 5V	

**Note:**

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

**2. Channel List:**

CH 01 – CH 13 for 802.11b, 802.11g, 802.11n(20MHz) CH 03 – CH 11 for 802.11n(40MHz)					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	06	2437	11	2462
02	2417	07	2442	12	2467
03	2422	08	2447	13	2472
04	2427	09	2452		
05	2432	10	2457		

**3. Table for Filed Antenna:**

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	N/A	N/A	Printed	N/A	2	TX/RX

### 3. MAXIMUM PERMISSIBLE EXPOSURE

#### 3.1 Applicable Standard

According to its specifications, the EUT must comply with the requirements of the following standards:

EN 62311 –Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz)

#### LIMIT

For frequency range 10 MHz to 10 GHz

The basic restriction at frequencies between 10 MHz and 100 GHz is on localized SAR in the head. Any device with output power below 20 mW cannot produce an exposure exceeding this restriction under the most pessimistic exposure conditions. The basic restriction is 2 W/kg so any unit which supplies less than 20 mW ( $=2/100W$ ) from its antenna port, averaged over 6 minutes, will meet the basic restriction.

For frequency range 10 GHz to 300 GHz

The most conservative assumption is that all the transmitted power is absorbed within the specified area, therefore any device which supplies less than 20 mW will meet the basic restriction. The average time is equal to  $68/f^{1.05}$  minutes (where f is in GHz) In the frequency range 10 GHz to 300 GHz, the basic restriction is  $10 Wm^{-2}$  averaged over any  $20 cm^2$  of exposed area with a spatial maximum of  $200 Wm^{-2}$  averaged over  $1 cm^2$

#### 2 MPE Calculation Method

$$E (V/m) = (30 \cdot P \cdot G)^{0.5} / d$$

E = Electric Field (V/m)

P = Peak RF output Power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

From the peak EUT RF output power, the minimum mobile separation distance,  $d=0.2m$ , as well as the gain of the used antenna, the RF power density can be obtained.

#### 4. TEST RESULTS

E.I.R.P. Power (dBm)	E.I.R.P. Power (mW)	Electric Field (V/m)	Limit of Electric Field(V/m)	Result
18.90	77.625	7.630	61	Pass

RF exposure assessment has been performed below to prove that this unit will not generate the harmful EM emission above the reference level as specified in EC Council Recommendation (1999/519/EC)