



# MPE TEST REPORT

**Applicant** BTI Wireless  
**FCC ID** WBKCP860  
**Product** LTE Indoor CPE  
**Model** CP860  
**Report No.** R2012A0895-M1  
**Issue Date** February 7, 2021

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC 47 CFR Part 1 1.1310**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Handwritten signature of Yu Wang in black ink.

*Prepared by: Yu Wang*

Handwritten signature of Guangchang Fan in black ink.

*Approved by: Guangchang Fan*

**TA Technology (Shanghai) Co., Ltd.**

*No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China*

*TEL: +86-021-50791141/2/3*

*FAX: +86-021-50791141/2/3-8000*



## Table of Contents

1	Test Laboratory.....	3
1.1	Notes of the Test Report .....	3
1.2	Test facility .....	3
1.3	Testing Location.....	3
1.4	Laboratory Environment.....	4
2	Description of Equipment under Test.....	5
3	Maximum conducted output power (measured) and antenna Gain .....	6
4	Test Result .....	7
	ANNEX A: The EUT Appearance.....	10



# 1 Test Laboratory

## 1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

## 1.2. Test facility

### **FCC (Designation number: CN1179, Test Firm Registration Number: 446626)**

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

## 1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.  
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China  
City: Shanghai  
Post code: 201201  
Country: P. R. China  
Contact: Fan Guangchang  
Telephone: +86-021-50791141/2/3  
Fax: +86-021-50791141/2/3-8000  
Website: <http://www.ta-shanghai.com>  
E-mail: [fanguangchang@ta-shanghai.com](mailto:fanguangchang@ta-shanghai.com)



## 1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 $\Omega$
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

## 2 Description of Equipment under Test

### Client Information

<b>Applicant</b>	BTI Wireless
<b>Applicant address</b>	6185 Phyllis Drive #D, Cypress, California 90630, United States
<b>Manufacturer</b>	BTI Wireless
<b>Manufacturer address</b>	6185 Phyllis Drive #D, Cypress, California 90630, United States

### General Technologies

<b>Model</b>	CP860
<b>IMEI</b>	862165040683433
<b>Hardware Version</b>	V1.0
<b>Software Version</b>	ST_V2.0.7
<b>Date of Testing:</b>	January 6, 2021~ January 28, 2021
<b>Date of Sample Received:</b>	December 29, 2020
<p>Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.</p> <p>2. All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.</p>	

### 3 Maximum conducted output power (measured) and antenna Gain

The numeric gain (G) of the antenna with a gain specified in dB is determined by  

$$\text{Numeric gain (G)} = 10^{(\text{antenna gain}/10)}$$

Band	Maximum Conducted Output Power/Turn up (dBm)		Antenna Gain (dBi)	Numeric gain
	(dBm)	(mW)		
LTE Band 7	24.5	281.838	5.74	3.750
LTE Band 38	27.5	562.341	5.54	3.581
LTE Band 41	25.5	354.813	5.74	3.750
Wi-Fi 2.4G	23.0	199.526	2.14	1.637
Wi-Fi 5G	23.0	199.526	3.50	2.239

## 4 Test Result

According to section 1.1310 of FCC 47 CFR Part 1, limits for maximum permissible exposure (MPE) are as following

TABLE 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> )	Averaging Time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0 .....	614	1.63	*(100)	6
3-30 .....	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30-300 .....	61.4	0.163	1.0	6
300-1500 .....			f/300	6
1500-100,000 .....			5	6
(B) Limits for General Population/Uncontrolled Exposure				
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

Note1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational / controlled limits apply provided he or she is made aware of the potential for exposure.

Note2: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.



The maximum permissible exposure for 1500~100,000MHz is 1.0. So

Band	The maximum permissible exposure
LTE Band 7	1.0mW/cm <sup>2</sup>
LTE Band 38	1.0mW/cm <sup>2</sup>
LTE Band 41	1.0mW/cm <sup>2</sup>
Wi-Fi 2.4G	1.0mW/cm <sup>2</sup>
Wi-Fi 5G	1.0mW/cm <sup>2</sup>



**RF Exposure Calculations:**

The following information provides the minimum separation distance for the highest gain antenna provided. This calculation is based on the conducted power, considering maximum power and antenna gain. The formula shown in KDB 447498 D01 is used in the calculation.

Equation from KDB 447498 D01 General RF Exposure Guidance v06 (10/23/2015) is:

$$S = PG / 4\pi R^2$$

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

P = Time-average maximum tune up procedure (in appropriate units, e.g., mW)

G = the numeric gain of the antenna

R = distance to the center of radiation of the antenna (20 cm = limit for MPE)

Band	PG (mW)	Test Result (mW/cm <sup>2</sup> )	Limit Value (mW/cm <sup>2</sup> )	The MPE ratio	Conclusion
LTE Band 7	1056.818	0.210	1.0	0.210	Pass
LTE Band 38	2013.724	0.401	1.0	0.401	Pass
LTE Band 41	1330.454	0.265	1.0	0.265	Pass
Wi-Fi 2.4G	326.588	0.065	1.0	0.065	Pass
Wi-Fi 5G	446.684	0.089	1.0	0.089	Pass
Note: R = 20cm $\pi = 3.1416$ The MPE ratio = Mac Test Result ÷ Limit Value					

So the simultaneous transmitting antenna pairs as below:

$$\sum \text{of MPE ratios} = \text{WiFi 2.4G} + \text{WiFi 5G} + \text{LTE} = 0.065 + 0.089 + 0.401 = 0.555 < 1$$

Note: For transmitters, minimum separation distance is 20cm, even if calculations indicate MPE distance is less.

\*\*\*\*\*END OF REPORT \*\*\*\*\*



## ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.