# EN 50385:2017

# TEST REPORT

For

# SHENZHEN TENDA TECHNOLOGY CO.,LTD.

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**Test Model: OS3**

| **Report Type:** Original Report | **Product Type:** 5GHz 11ac 867Mbps 12dBi Outdoor CPE |
|---|---|
| **Report Number:** | DG2220302-06777E |
| **Report Date:** | 2022-05-12 |
| **Reviewed By:** | Rocky Xiao<br>RF Engineer |
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# GENERAL INFORMATION

## Product Description for Equipment under Test (EUT)

| | | |
|---|---|---|
| **Product Name:** | | 5GHz 11ac 867Mbps 12dBi Outdoor CPE |
| **EUT Model:** | | OS3 |
| **Rated Input Voltage:** | | DC 12V from adapter or 12V from POE |
| **Adapter Information:** | **Model:** | BN073-A12012E |
| | **Input:** | 100-240Vac 50/60Hz 0.4A |
| | **Output:** | DC 12V 1A |
| **Serial Number:** | | DG2220302-06777E-RF-S1 |
| **EUT Received Date:** | | 2022.03.05 |
| **EUT Received Status:** | | Good |

## Objective

This report is prepared on behalf of ***SHENZHEN TENDA TECHNOLOGY CO.,LTD.*** in accordance with EN 50385: 2017 Product standard to demonstrate the compliance of base station equipment with radiofrequency electromagnetic field exposure limits (110 MHz - 100 GHz), when placed on the market.

The objective is to determine the compliance of EUT with EN 50385: 2017.

## Test Methodology

All measurements contained in this report were conducted with EN 50385: 2017.

## Declarations

BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol "▲". Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

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# RF EXPOSURE ASSESSMENT METHOD

## 1. Introduction

This product standard is related to human exposure to radiofrequency electromagnetic fields transmitted by base station equipment in the frequency range 110 MHz to 100 GHz.

The object is to assess the compliance of such equipment with the general public basic restrictions (directly or indirectly via compliance with reference levels) and the workers' exposure limit values (directly or indirectly via compliance with action levels), when it is placed on the market.

## 2. Limit

According to EN 50385: 2017, the criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified 2013/35/EU.

**ALs for exposure to electric and magnetic fields from 100 kHz to 300 GHz**

| Frequency range | Electric field strength ALs(E) [$Vm^{-1}$] (RMS) | Magnetic flux density ALs(B) [μT] (RMS) | Power density ALs(S) [$Wm^{-2}$] |
|---|---|---|---|
| 100 kHz ≤ f < 1 MHz | $6{,}1 \times 10^{2}$ | $2{,}0 \times 10^{6}/f$ | — |
| 1≤ f < 10 MHz | $6{,}1 \times 10^{8}/f$ | $2{,}0 \times 10^{6}/f$ | — |
| 10 ≤ f < 400 MHz | 61 | 0,2 | — |
| 400 MHz ≤ f < 2 GHz | $3 \times 10^{-3}\ f^{½}$ | $1{,}0 \times 10^{-5}\ f^{½}$ | — |
| 2 ≤ f < 6 GHz | $1{,}4 \times 10^{2}$ | $4{,}5 \times 10^{-1}$ | — |
| 6 ≤ f ≤ 300 GHz | $1{,}4 \times 10^{2}$ | $4{,}5 \times 10^{-1}$ | 50 |

**Notes:**
1. f is the frequency expressed in hertz (Hz).
2. [ALs(E)]2 and [ALs(B)]2 are to be averaged over a six-minute period. For RF pulses, the peak power density averaged over the pulse width shall not exceed 1 000 times the respective ALs(S) value. For multifrequency fields, the analysis shall be based on summation, as explained in the practical guides referred to in Article 14.
3. ALs(E) and ALs(B) represent maximum calculated or measured values at the workers' body position. This results in a conservative exposure assessment and automatic compliance with ELVs in all non-uniform exposure conditions. In order to simplify the assessment of compliance with ELVs, carried out in accordance with Article 4, in specific non-uniform conditions, criteria for the spatial averaging of measured fields based on established dosimetry will be laid down in the practical guides referred to in Article 14. In the case of a very localised source within a distance of a few centimetres from the body, compliance with ELVs shall be determined dosimetrically, case by case.
4. The power density shall be averaged over any 20 cm2 of exposed area. Spatial maximum power densities averaged over 1 cm2 should not exceed 20 times the value of 50 Wm–2. Power densities from 6 to 10 GHz are to be averaged over any six-minute period. Above 10 GHz, the power density shall be averaged over any 68/f1,05-minute period (where f is the frequency in GHz) to compensate for progressively shorter penetration depth as the frequency increases.

## 3. Classification of the assessment methods

**Far Field Calculation Formula**

$$E = \frac{\sqrt{30PG(\theta,\phi)}}{r}$$

Where:
P= Tune-up average conducted power
G= antenna gain relative to an isotropic antenna
$\theta,\phi$ = elevation and azimuth angles to point of investigation
r= distance from observation point to the antenna

## 4. Test Results

| RF Mode | Frequency | Tune-up EIRP Power | E-Field Strength | Limit | Result |
|---|---|---|---|---|---|
| | MHz | (dBm) | (V/m) | (V/m) | |
| Wi-Fi 5.2G | 5150-5250 | 22 | 10.9 | 140 | Pass |
| Wi-Fi 5.6G | 5150-5250 | 27 | 19.4 | 140 | Pass |

Note: The distance from observation point to the antenna is 20cm.

**Conclusion:** Compliant

# EXHIBIT A - EUT PHOTOGRAPHS

For photos in this section, please refer to report No.: DG2220302-06777E-02

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