



TEST REPORT

Reference No...... : WTF26X05149088W003
Applicant : JM Zengge Co.,Ltd
Address..... : Unit 401 & 501, Building 3, 8 Dongsheng Road, Jianghai District, Jiangmen
City 529000, China
Manufacturer : The same as Applicant
Address..... : The same as Applicant
Product Name : LED Controller
Model No...... : ZJ-BCIS-HC2-A3-V2-USB-Z
Standards : ANSI/ IEEE 149-2021
Date of Receipt sample : 2026-05-27
Date of Test..... : 2026-06-16 to 2026-07-14
Date of Issue : 2026-09-04
Test Report Form No. : WTX_ IEEE 149
Test Result..... : Pass

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of approver.

Prepared By:

Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road,
Block 70 Bao'an District, Shenzhen, Guangdong, China

Tel.: +86-755-33663308 Fax.: +86-755-33663309 Email: sem@waltek.com.cn

Tested by:

Gala Wang/Project Engineer

Approved by:

Jason Su/Manager



TABLE OF CONTENTS

1. GENERAL INFORMATION	4
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	4
2. SUMMARY OF TEST RESULTS	6
3. ANTENNA TEST CONFIGURATIONS	7
3.1 TEST LOCATION	7
3.2 TEST ENVIRONMENTS	7
3.3 TEST EQUIPMENT LIST	7
3.4 MEASUREMENT UNCERTAINTY	7
3.5 TEST SETUP	7
4. ANTENNA TEST RESULT	8
4.1 GAIN AND EFFICIENCY	8
4.2 RADIATION PATTERN 2D VIEW	9
4.3 RADIATION PATTERN 3D VIEW	11
EXHIBIT 1 - EUT PHOTOGRAPHS	12
EXHIBIT 2 - TEST SETUP PHOTOGRAPHS	13

WALTEK



Report version

Version No.	Date of issue	Description
Rev.00	2026-09-04	Original
/	/	/

WALTEK



1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	LED Controller
Trade Name:	/
Model No.:	ZJ-BCIS-HC2-A3-V2-USB-Z
Adding Model(s):	ZJ-BCIS-HC1-A3-V2-Z, ZJ-BCIS-HC1-A3-V2-Z-PCBA, ZJ-BCIS-HC2-A3-Z-PCBA, ZJ-BCIS-HC1-2K-A3-V2-Z-PCBA, ZJ-BCIS-HC1-2K-A3-V2-Z, ZJ-BCIS-HC2-2K-A3-V2-USB-Z, ZJ-BCIS-HC2-2K-A3-Z-PCBA, ZJ-BCIS-RGB1-2K-Z-PCBA, ZJ-BCIS-RGB1-2K-Z, ZJ-BCIS-RGB2-2K-USB-Z, ZJ-FBCI-W-3K-19Z-PCBA, ZJ-FBCI-W-3K-19Z, ZJ-ZBCI-CCT1-2K-44Z, ZJ-ZBCI-CCT1-2K-44Z-PCBA, ZJ-ZBCI-W1-3K-44Z, ZJ-ZBCI-W1-3K-44Z-PCBA, ZJ-BCUAS-HC2-1K-DZ-Z-PCBA, ZJ-BCUAS-HC2-1K-V2-Z-PCBA, ZJ-BCUAS-HC2-1K-V2-S-PCBA, ZJ-ZBCUAS-HCQ2-1K-44Z-PCBA, ZJ-BCF-RGB2-USB-IR-Z, ZJ-ZBCF-RGB1-61Z, ZJ-BCF-RGB1-IR-Z, ZJ-BCF-RGB1-Z, ZJ-ZBCF-RGB1-61Z-PCBA, ZJ-BCF-RGB1-Z-PCBA, ZJ-BCF-RGB2-USB-RX1-Z, ZJ-BCF-RGB2-USB-RX1-Z-PCBA, ZJ-BCUAS-HC2-CT-1K-DZ-Pro-S-PCBA, ZJ-BCUAS-HC2-CT-1K-DZ-Pro-1616-S-PCBA, ZJ-BCUAS-HC2-CT-1K-DZ-Pro-2525-S-PCBA, ZJ-BCUAS-HC2-CT-1K-DZ-Pro-3020-S-PCBA, ZJ-BCUAS-HC2-CT-1K-DZ-Pro-4020-S-PCBA, ZJ-BCJS-HC2-CT-1K-DZ-Pro-S-PCBA, ZJ-BCJS-HC2-CT-1K-DZ-Pro-1616-S-PCBA, ZJ-BCJS-HC2-CT-1K-DZ-Pro-2525-S-PCBA, ZJ-BCJS-HC2-CT-1K-DZ-Pro-3020-S-PCBA, ZJ-BCJS-HC2-CT-1K-DZ-Pro-4020-S-PCBA, ZJ-BCKS-HC1-3K-V2-S, ZJ-BCKS-HC1-3K-V2-S-PCBA, ZJ-BCKS-HC1-3K-V2-2P-S, ZJ-BCKS-RGB1-3K-S-PCBA, ZJ-BCKS-RGB1-3K-S, ZJ-BCKS-RGBW-3K-S, ZJ-BCKS-RGBW-3K-S-PCBA, ZJ-BCKS-RGBWW-3K-S, ZJ-BCKS-RGBWW-3K-S-PCBA, ZJ-BCJS-HC1-1K-V2-S-PCBA, ZJ-BCL-W8-1K-S, ZJ-BCL-W8-1K-S-PCBA, ZJ-BCL-CCT8-1K-S-PCBA, ZJ-BCL-CCT8-1K-S, ZJ-BCPS-HC1-S-PCBA, ZJ-BCPS-HC1-S, ZJ-BCK1S-HC2-3K-S-PCBA, ZJ-BCK1S-HC2-3K-S, ZJ-BCK1S-HC3-3K-S, ZJ-BCK1S-HC3-3K-S-PCBA, ZJ-BCK1S-HC2-PWMCCT-3K-S, ZJ-BCK1S-HC2-PWMCCT-3K-S-PCBA, ZJ-BCK1S-HC2-PWMW-3K-S, ZJ-BCK1S-HC2-PWMW-3K-S-PCBA, ZJ-BCK1S-HC3-PWMCCT-3K-S,

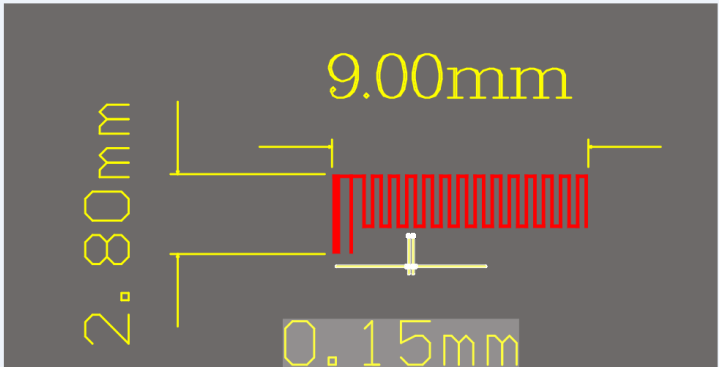


	ZJ-BCK1S-HC3-PWMCCT-3K-S-PCBA,ZJ-BCK1S-HC3-PWMW-3K-S, ZJ-BCK1S-HC3-PWMW-3K-S-PCBAZJ-BCL1S-HC2-1K-S, ZJ-BCL1S-HC2-1K-S-PCBA,ZJ-BCL1S-HC3-1K-S, ZJ-BCL1S-HC3-1K-S-PCBA, ZJ-BCUCS-HC1-1K-V2-Z-PCBA, ZJ-BCUCS-HC1-1K-V2-Z, ZJ-BCUCS-RGB3-1K-Z-PCBA, ZJ-BCUCS-RGB3-1K-Z, ZJ-BCUAS-HC2-CT-1K-Pro-2020-S-PCBA, ZJ-BCUAS-HC2-CT-1K-Pro-1616-S-PCBA, ZJ-BCUAS-HC2-CT-1K-Pro-2525-S-PCBA, ZJ-BCUAS-HC2-CT-1K-Pro-3020-S-PCBA, ZJ-BCUAS-HC2-CT-1K-Pro-4020-S-PCBA, ZJ-BCJS-HC2-CT-1K-Pro-2020-S-PCBA, ZJ-BCJS-HC2-CT-1K-Pro-1616-S-PCBA, ZJ-BCJS-HC2-CT-1K-Pro-2525-S-PCBA, ZJ-BCJS-HC2-CT-1K-Pro-3020-S-PCBA, ZJ-BCJS-HC2-CT-1K-Pro-4020-S-PCBA
--	---

Note: The test data is gathered from a production sample, provided by the manufacturer. The appearance of others models listed in the report is different from main-test model ZJ-BCIS-HC2-A3-V2-USB-Z, but the circuit and the electronic construction do not change, declared by the manufacturer.

Technical Characteristics of EUT	
Frequency Range:	2400-2500MHz
Gain of Antenna:	-2.36dBi (Max.)
Type of Antenna:	PCB Antenna

Dimension:





2. SUMMARY OF TEST RESULTS

Standards	Description of Test Item	Result
ANSI/ IEEE 149-2021	IEEE Recommended Practice for Antenna Measurements	Compliant

N/A: not applicable

WALTEK



3. Antenna Test Configurations

3.1 Test Location

Name:	Sushi TOWE Wireless Testing(Shenzhen)Co., Ltd.
Address:	F 401/101, Building E, Hongwei Industrial Zone, No. 6, Liuxian 3rd Road, Bao'an District, Shenzhen,518133

3.2 Test Environments

Environments Parameter	Temperature	Voltage	Humidity
NTNV	25° C	--	50%

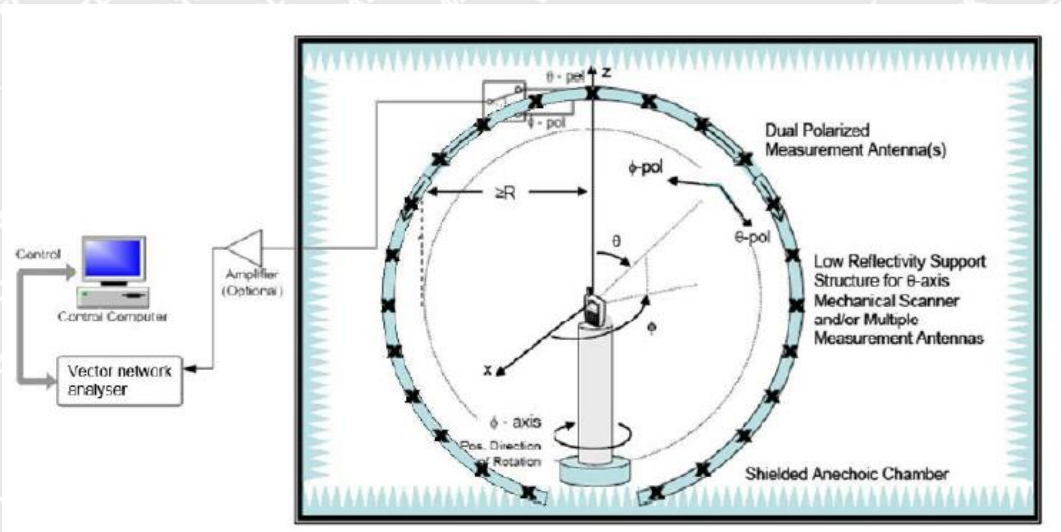
3.3 Test Equipment List

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Anechoic Chamber	ETS	AMS8923	Q2225	2023-06-09	2028-06-08
RF Switch	ETS	EMCenter	251211	/	/
Vector network analyzer	R&S	ZNB8	101413	2025-07-15	2026-07-14
				2026-07-13	2027-07-12

3.4 Measurement Uncertainty

The uncertainty is calculated using the methods suggested in the“Guide to the Expression of Uncertainty in Measurement” (GUM) published by ISO. When the test result is a critical value,we will use the measurement uncertainty give the judgment result based on the 95%Confidence intervals.

3.5 Test Setup





4. Antenna Test Result

4.1 Gain and Efficiency

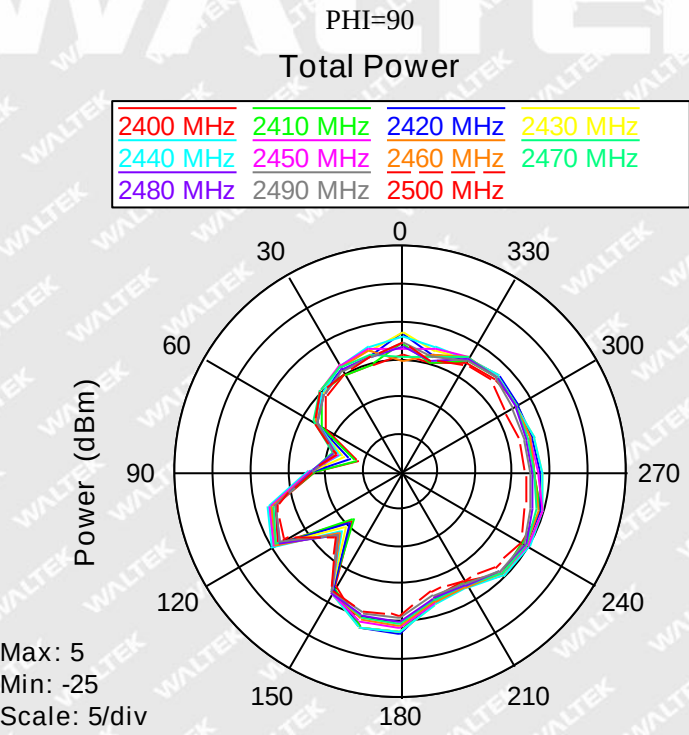
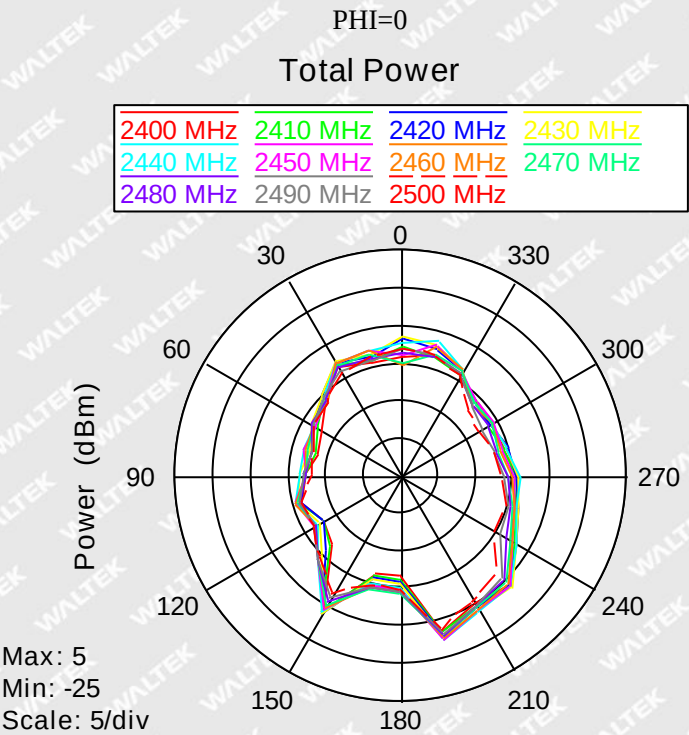
Frequency(MHz)	Gain(dBi)	Efficiency (%)
2400	-2.95	14.95
2410	-2.79	15.36
2420	-2.57	16.71
2430	-2.41	17.38
2440	-2.36	17.55
2450	-2.52	16.72
2460	-2.90	16.05
2470	-2.95	15.35
2480	-3.17	14.42
2490	-3.31	13.66
2500	-3.87	12.45

WALTEK



4.2 Radiation Pattern 2D View

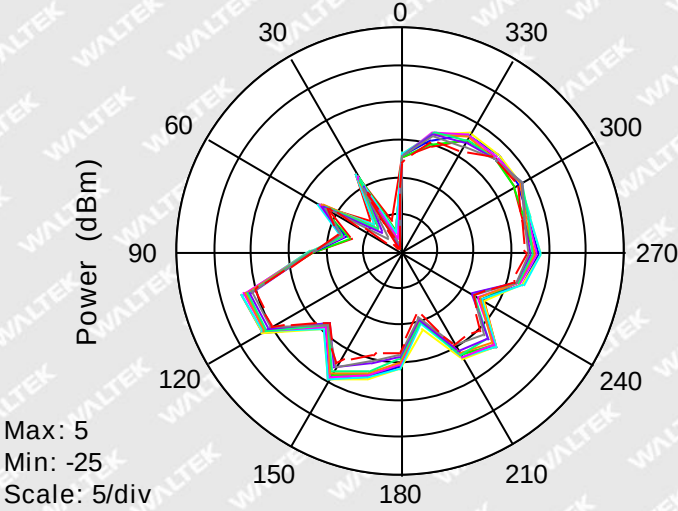
EUT #1:





THETA=90
Total Power

2400 MHz	2410 MHz	2420 MHz	2430 MHz
2440 MHz	2450 MHz	2460 MHz	2470 MHz
2480 MHz	2490 MHz	2500 MHz	



WALTEK



4.3 Radiation Pattern 3D View

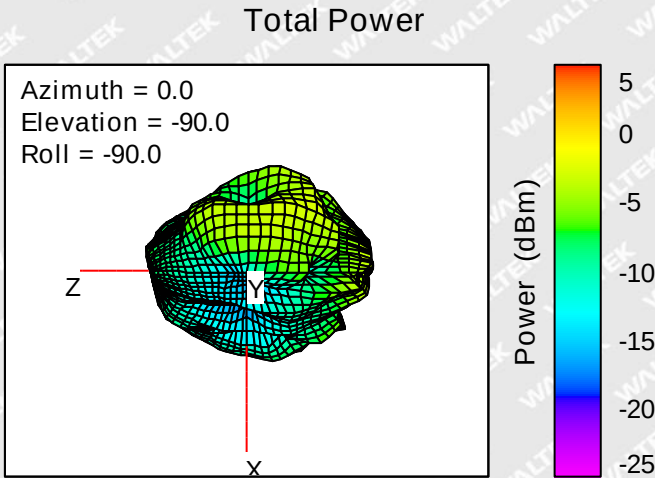
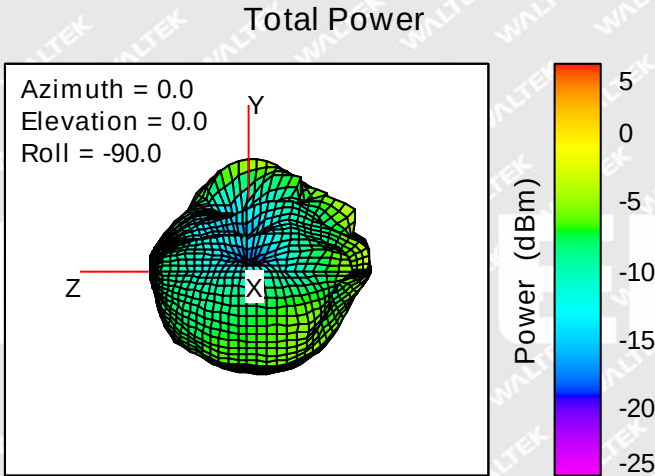
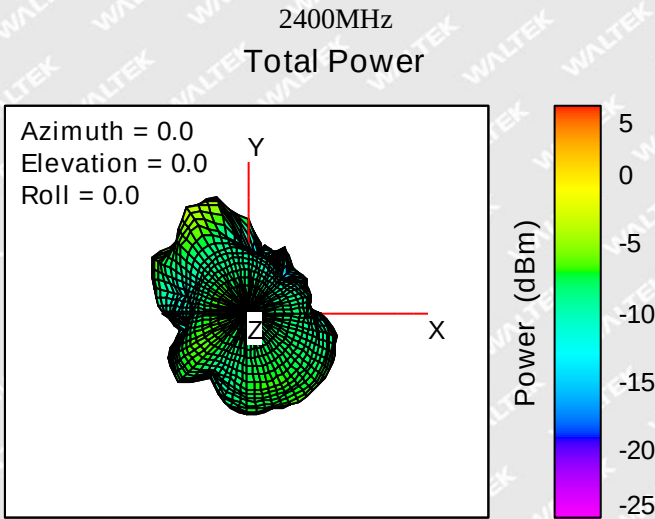




EXHIBIT 1 - EUT PHOTOGRAPHS

EUT View 1

Please refer to "ANNEX"

WALTEK



EXHIBIT 2 - TEST SETUP PHOTOGRAPHS

OTA Test View 1:

Please refer to "ANNEX"

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

WALTEK