



Shenzhen GUOREN Certification Technology Service Co., Ltd.

101#, Building K & Building T, The Second Industrial Zone, Jiazitang Community, Fenghuang Street, Guangming District, Shenzhen, China

RF Exposure evaluation

Report Reference No.....: GRCTR260402003-05

FCC ID.....: 2ARXO-ESL101

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Date of issue.....: May. 09, 2026

Testing Laboratory Name.....: Shenzhen GUOREN Certification Technology Service Co., Ltd.

Address.....: 101#, Building K & Building T, The Second Industrial Zone, Jiazitang Community, Fenghuang Street, Guangming District, Shenzhen, China

Applicant's name.....: Fametech Inc.

Address.....: 2F, No. 167, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

Test specification.....:

Standard.....: 47CFR §2.1091
KDB447498 D01 v06

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Test item description.....: Electronic Shelf Label (ESL)

Trade Mark.....: /

Manufacturer.....: Fametech Inc.

Model/Type reference.....: ESL101

Listed Models: ESL101D

Hardware Version: V1.0

Software Version.....: V1.0

Frequency.....: From 2400MHz to 2500MHz, 5180MHz -5240MHz, 5260MHz to 5320MHz, 5500MHz to 5700MHz, 5745MHz to 5825MHz

Ratings.....: DC 12V From External Circuit

Result.....: PASS

TEST REPORT

Equipment under Test : Electronic Shelf Label (ESL)

Model /Type : ESL101

Listed Models : ESL101D

Applicant : **Famotech Inc.**

Address : 2F, No. 167, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City
221, Taiwan

Manufacturer : **Famotech Inc.**

Address : 2F, No. 167, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City
221, Taiwan

Test Result:	PASS
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The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

1. SUMMARY	4
1.1. General Remarks	4
1.2. Product Description	4
1.3. Equipment Under Test	5
1.4. Short description of the Equipment under Test (EUT)	5
1.5. EUT configuration	5
1.6. Modifications	6
2. TEST ENVIRONMENT	7
2.1. Address of the test laboratory	7
2.2. Test Facility	7
2.3. Environmental conditions	7
2.4. Statement of the measurement uncertainty	7
3. METHOD OF MEASUREMENT	9
3.1. Applicable Standard	9
3.2. Limit	9
3.3. MPE Calculation Method	9
3.4. Antenna Information	10
3.5. Manufacturing Tolerance	10
4. EVALUATION RESULT	12
5. CONCLUSION	12

1. SUMMARY

1.1. General Remarks

Date of receipt of test sample	:	Apr. 13, 2026
Testing commenced on	:	Apr. 13, 2026
Testing concluded on	:	May. 09, 2026

1.2. Product Description

Product Name:	Electronic Shelf Label (ESL)
Model/Type reference:	ESL101
Listed Models:	ESL101D(The products are identical in interior structure, electrical circuits and components, just model names and color are different.)
Power supply:	DC 12V From External Circuit
Adapter Information:	Model:ADP-24B2 Input:100-240V~ 50/60Hz 0.8A MAX Output:12V---2A
Testing sample ID:	GRCTR260402003-1# (Engineer sample), GRCTR260402003-2# (Normal sample)
Bluetooth	
Supported type:	Bluetooth low Energy
Modulation type:	GFSK
Operation frequency:	2402MHz to 2480MHz
Channel number:	40
Channel separation:	2 MHz
Antenna type:	FPC antenna
Antenna gain*(Supplied by the customer):	3.89 dBi
WIFI 2.4G	
Supported type:	802.11b/802.11g/802.11n HT20/802.11n HT40/802.11ax HE20/802.11ax HE40
Modulation type:	802.11b: DSSS 802.11g/802.11n HT20/802.11n HT40/802.11ax HE20/802.11ax HE40:OFDM
Operation frequency:	802.11b/802.11g/802.11n HT20/802.11ax HE20: 2412MHz~2462MHz 802.11n HT40/802.11ax HE40: 2422MHz~2452MHz
Channel number:	802.11b/802.11g/802.11n HT20/802.11ax HE20: 11 802.11n HT40/802.11ax HE40: 7
Channel separation:	5MHz
Antenna type:	FPC antenna
Antenna gain* (Supplied by the customer) :	3.89 dBi
WIFI 5G	
Supported type:	Supported 802.11 a/n/ac/ax
Modulation type:	IEEE 802.11a: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK) IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)

	IEEE 802.11acVHT20/VHT40: OFDM(256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11axHE20/HE40: OFDM(1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)
Operation frequency:	IEEE 802.11a:5180-5240MHz,5260-5320MHz,5500-5700MHz,5745-5825MHz IEEE 802.11n HT20: 5180-5240MHz,5260-5320MHz,5500-5700MHz,5745-5825MHz IEEE 802.11n HT40: 5190-5230MHz,5270-5310MHz,5510-5670MHz,5755-5795MHz IEEE 802.11acVHT20: 5180-5240MHz,5260-5320MHz,5500-5700MHz,5745-5825MHz IEEE 802.11acVHT40: 5190-5230MHz,5270-5310MHz,5510-5670MHz,5755-5795MHz IEEE 802.11axHE20: 5180-5240MHz,5260-5320MHz,5500-5700MHz,5745-5825MHz IEEE 802.11axHE40: 5190-5230MHz,5270-5310MHz,5510-5670MHz,5755-5795MHz
Channel number:	4 Channels for 20MHz bandwidth(5180-5240MHz) 4 Channels for 20MHz bandwidth(5260-5320MHz) 11 Channels for 20MHz bandwidth(5500-5700MHz) 5 channels for 20MHz bandwidth(5745-5825MHz) 2 channels for 40MHz bandwidth(5190~5230MHz) 2 channels for 40MHz bandwidth(5270~5310MHz) 5 Channels for 40MHz bandwidth(5510-5670MHz) 2 channels for 40MHz bandwidth(5755~5795MHz)
Antenna type:	FPC antenna
Antenna gain*(Supplied by the customer):	2.97 dBi
Remark:*When the information provided by the customer was used to calculate test results, if the information provided by the customer is not accurate, shenzhen GUOREN Certification Technology Service Co., Ltd. does not assume any responsibility.	

1.3. Equipment Under Test

Power supply system utilised

Power supply voltage	:	☐ 230V / 50 Hz	☐ 120V / 60Hz
		☐ 12 V DC	☐ 24 V DC
		☒ Other (specified in blank below)	

DC 12V From External Circuit

1.4. Short description of the Equipment under Test (EUT)

This is a Electronic Shelf Label (ESL).

For more details, refer to the user's manual of the EUT.

1.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

● - supplied by the manufacturer

○ - supplied by the lab

☐ /	M/N: /
	Manufacturer: /

1.6. Modifications

No modifications were implemented to meet testing criteria.

2. TEST ENVIRONMENT

2.1. Address of the test laboratory

Shenzhen GUOREN Certification Technology Service Co., Ltd.

101#, Building K & Building T, The Second Industrial Zone, Jiazitang Community, Fenghuang Street, Guangming District, Shenzhen, China

2.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 920798 Designation Number: CN1304

Shenzhen GUOREN Certification Technology Service Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA-Lab Cert. No.: 6202.01

Shenzhen GUOREN Certification Technology Service Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

ISED#: 27264 CAB identifier: CN0115

Shenzhen GUOREN Certification Technology Service Co., Ltd. has been listed by Innovation, Science and Economic Development Canada to perform electromagnetic emission measurement.

CNAS-Lab Code: L15631

Shenzhen GUOREN Certification Technology Service Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories for the Competence of Testing and Calibration Laboratories.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.10 and CISPR 16-1-4:2010.

2.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

2.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the Shenzhen GUOREN Certification Technology Service Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen GUOREN Certification Technology Service Co., Ltd.:

Test Items	Measurement Uncertainty	Notes
Max output power	0.54 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

3. Method of measurement

3.1. 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.

KDB447498 D01 v06: RF EXPOSURE PROCEDURES AND EQUIPMENT AUTHORIZATION
POLICIES FOR MOBILE AND PORTABLE DEVICES

3.2. Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	6
3.0 – 30	1842/f	4.89/f	(900/f ²)*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	/	/	f/300	6
1500 – 100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 30	824/f	2.19/f	(180/f ²)*	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

3.3. MPE Calculation Method

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

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

Where: S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

3.4. Antenna Information

EUT can only use antennas certificated as follows provided by manufacturer;

Antenna No.	Model No. of antenna:	Type of antenna:	Gain of the antenna (Max.)	Frequency range:
BLE	/	FPC ANT	3.89 dBi for 2400MHz -2500MHz	
WIFI 2.4G	/	FPC ANT	3.89 dBi for 2400MHz -2500MHz	
WIFI 5G	/	FPC ANT	2.97 dBi for 5180MHz -5240MHz, 5260MHz to 5320MHz, 5500MHz to 5700MHz, 5745MHz to 5825MHz	

3.5. Manufacturing Tolerance

BLE(Peak)			
GFSK 1Mbps			
Channel	Channel 00	Channel 19	Channel 39
Target (dBm)	0.0	0.0	0.0
Tolerance $\pm$ (dB)	1.0	1.0	1.0
GFSK 2Mbps			
Channel	Channel 00	Channel 19	Channel 39
Target (dBm)	0.0	0.0	0.0
Tolerance $\pm$ (dB)	1.0	1.0	1.0

2.4G WIFI(Peak)			
Channel	802.11b		
	Channel 01	Channel 06	Channel 11
Target (dBm)	14.0	14.0	14.0
Tolerance $\pm$ (dB)	1.0	1.0	1.0
Channel	802.11g		
	Channel 01	Channel 06	Channel 11
Target (dBm)	14.0	14.0	14.0
Tolerance $\pm$ (dB)	1.0	1.0	1.0
Channel	802.11n(HT20)		
	Channel 01	Channel 06	Channel 11
Target (dBm)	14.0	14.0	14.0
Tolerance $\pm$ (dB)	1.0	1.0	1.0
Channel	802.11n(HT40)		
	Channel 03	Channel 06	Channel 09
Target (dBm)	14.0	14.0	14.0
Tolerance $\pm$ (dB)	1.0	1.0	1.0
Channel	802.11ax HE20		
	Channel 01	Channel 06	Channel 11
Target (dBm)	14.0	14.0	14.0
Tolerance $\pm$ (dB)	1.0	1.0	1.0
Channel	802.11ax HE40		
	Channel 03	Channel 06	Channel 09
Target (dBm)	14.0	14.0	14.0
Tolerance $\pm$ (dB)	1.0	1.0	1.0

5GHz WLAN

IEEE 802.11a (Average)												
Frequency (MHz)	5180	5200	5240	5260	5280	5320	5500	5580	5700	5745	5785	5825
Target (dBm)	14.0	14.0	13.0	14.0	14.0	13.0	13.0	13.0	13.0	14.0	13.0	13.0
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
IEEE 802.11n HT20 (Average)												
Frequency (MHz)	5180	5200	5240	5260	5280	5320	5500	5580	5700	5745	5785	5825
Target (dBm)	14.0	14.0	14.0	14.0	14.0	13.0	13.0	13.0	13.0	14.0	13.0	13.0
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
IEEE 802.11n HT40 (Average)												
Frequency (MHz)	5190	5230	5270	5310	5510	5550	5670	5755	5795			
Target (dBm)	14.0	14.0	14.0	13.0	14.0	14.0	12.0	14.0	14.0			
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
IEEE 802.11ac VHT20 (Average)												
Frequency (MHz)	5180	5200	5240	5260	5280	5320	5500	5580	5700	5745	5785	5825
Target (dBm)	14.0	14.0	13.0	13.0	13.0	12.0	14.0	14.0	14.0	14.0	14.0	14.0
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
IEEE 802.11ac VHT40 (Average)												
Frequency (MHz)	5190	5230	5270	5310	5510	5550	5670	5755	5795			
Target (dBm)	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0			
Tolerance ± (dB)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
IEEE 802.11ax HE20 (Average)												
Frequency (MHz)	5180	5200	5240	5260	5280	5320	5500	5580	5700	5745	5785	5825
Target (dBm)	14.0	14.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	14.0	14.0	14.0

Tolerance $\pm$ (dB)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
IEEE 802.11ax HE40 (Average)												
Frequency (MHz)	5190	5230	5270	5310	5510	5550	5670	5755	5795			
Target (dBm)	14.0	14.0	13.0	12.0	12.0	13.0	13.0	12.0	13.0			
Tolerance $\pm$ (dB)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0			

4. Evaluation Result

As declared by the Applicant, the EUT is a wireless device used in a fix application, at least 20 cm from any body part of the user or nearby persons; from the maximum EUT RF output power, the minimum separation distance, $r=20\text{cm}$, as well as the gain of the used antenna refer to antenna information, the RF power density can be obtained.

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm ²)	MPE Limits (mW/cm ²)
	dBm	mW				
BLE	1.0	1.2589	3.89	2.4491	0.00061	1.0000
2.4G WIFI	15.0	31.6228	3.89	2.4491	0.01542	1.0000
5G WIFI	15.0	31.6228	2.97	1.9815	0.01247	1.0000

Remark:

1. Output power (Peak) including turn-up tolerance;
2. MPE evaluate distance is 20cm from user manual provide by manufacturer.

5. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device.

.....End of Report.....