FCC Part 15 B TEST REPORT
FCC ID:2BDDW-WF3610

Report Number:	**ZKT-240506L4715E-1**
Date of Test:	Apr. 19, 2024 to Apr. 29, 2024
Date of issue:	May. 06, 2024
Total number of pages:	14
Test Result :	PASS
Testing Laboratory:	**Shenzhen ZKT Technology Co., Ltd.**
Address :	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Applicant's name :	**Thortron Technology Incorporated Co., Ltd.**
Address :	12F.,No.166 Fuxing N.Rd., Taipei 10487, Taiwan
Manufacturer's name :	**Jeytron Technology Co Ltd**
Address :	16 Gaoli 5th Rd Tang Xia Town Dong Guan Guang Dong China
Test specification:	
Standard:	FCC Part 15 B, ANSI C63.4:2014
Test procedure:	/
Non-standard test method :	N/A
Test Report Form No:	TRF-EL-117_V0
Test Report Form(s) Originator:	ZKT Testing
Master TRF :	Dated: 2020-01-06

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Product name:	**Power Pro Control System**
Trademark :	WFCO
Model/Type reference:	WF-3610,WF-3610-003,WF-3610-004,WF-3610-005
Ratings:	Input:DC 12V

Testing procedure and testing location:

Testing Laboratory.....:	**Shenzhen ZKT Technology Co., Ltd.**
Address.....:	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Tested by (name + signature).....:	Jim Liu
Reviewer (name + signature).....:	Jackson Fang
Approved (name + signature).....:	Lake Xie

TABLE OF CONTENT

1.VERSION

Report No.	Version	Description	Approved
ZKT-240506L4715E-1	Rev.01	Initial issue of report	May. 06, 2024

2.GENERAL INFORMATION

2.1 Description of Device (EUT)

EUT	:	Power Pro Control System
Trademark	:	WFCO
Model Number	:	WF-3610,WF-3610-003,WF-3610-004,WF-3610-005
Model Difference		The key panel is different, the function is different, and the other remains the same.
Serial No.:	:	ZKT-240506L4715E-1
Power Supply	:	DC 12V

2.2 Tested System Details

None.

2.3 Test Facility

Site Description

Name of Firm	:	Shenzhen ZKT Technology Co., Ltd.
Site Location	:	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 692225
Designation Number: CN1299
IC Registered No.: 27033

2.4 SUMMARY OF TEST RESULTS

FCC Part15 , Subpart B			
Standard Section	Test Item	Judgment	Remark
15.107	Conducted Emission	N/A	
15.109	Radiated Emission	PASS	

NOTE:
(1) ” N/A” denotes test is not applicable in this Test Report
(2) EUT DC power supply.
(3) the The internal module of the product has obtained FCC ID certification, and the FCC ID number is:2BDDW-BLM8723DS1.

2.5 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Test item	Value (dB)
Conducted Emission (150K-30MHZ)	3.20
Radiated disturbance30MHz-1000MHz	4.80

2.6 Test Instrument Used

Conducted emissions Test

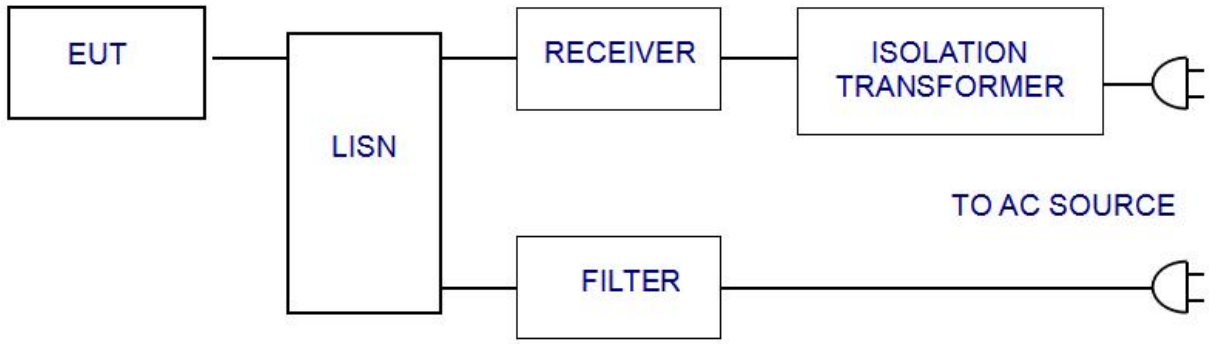
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	N/A	Oct. 21, 2023	Oct. 20, 2024
2	LISN	CYBERTEK	EM5040A	E1850400149	N/A	Oct. 21, 2023	Oct. 20, 2024
3	Test Cable	N/A	C-01	N/A	N/A	Oct. 21, 2023	Oct. 20, 2024
4	Test Cable	N/A	C-02	N/A	N/A	Oct. 21, 2023	Oct. 20, 2024
5	Test Cable	N/A	C-03	N/A	N/A	Oct. 21, 2023	Oct. 20, 2024
6	EMI Test Receiver	R&S	ESCI3	101393	4.42 SP3	Oct. 28, 2023	Oct. 27, 2024
7	Triple-Loop Antenna	N/A	RF300	N/A	N/A	Oct. 28, 2023	Oct. 27, 2024
8	Absorbing Clamp	DZ	ZN23201	15034	N/A	Oct. 31, 2023	Oct. 30, 2024
9	EMC Software	Frad	EZ-EMC	Ver.EMC-CON 3A1.1	N/A	\	\

Radiation emissions& Radio Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	9020A	MY55370835	A.17.05	Oct. 28, 2023	Oct. 27, 2024
2	Spectrum Analyzer (10kHz-39.9GHz)	R&S	FSV40-N	100363	1.71 SP2	Oct. 28, 2023	Oct. 27, 2024
3	EMI Test Receiver (9kHz-7GHz)	R&S	ESCI7	101169	4.32	Oct. 28, 2023	Oct. 27, 2024
4	Bilog Antenna (30MHz-1500MHz)	Schwarzbeck	VULB9168	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
5	Horn Antenna (1GHz-18GHz)	Agilent	AH-118	071145	N/A	Nov. 01, 2023	Oct. 31, 2024
6	Horn Antenna (15GHz-40GHz)	A.H.System	SAS-574	588	N/A	Oct. 28, 2023	Oct. 27, 2024
7	Loop Antenna	TESEQ	HLA6121	58357	N/A	Nov. 01, 2023	Oct. 31, 2024
8	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	060747	N/A	Nov. 15, 2023	Nov. 14, 2024
9	Amplifier (1GHz-26.5GHz)	Agilent	8449B	3008A00315	N/A	Oct. 28, 2023	Oct. 27, 2024
10	Amplifier (500MHz-40GHz)	全聚达	DLE-161	097	N/A	Oct. 28, 2023	Oct. 27, 2024
11	Test Cable	N/A	R-01	N/A	N/A	Oct. 28, 2023	Oct. 27, 2024
12	Test Cable	N/A	R-02	N/A	N/A	Oct. 28, 2023	Oct. 27, 2024
13	Test Cable	N/A	R-03	N/A	N/A	Oct. 28, 2023	Oct. 27, 2024
14	Test Cable	N/A	RF-01	N/A	N/A	Oct. 28, 2023	Oct. 27, 2024
15	Test Cable	N/A	RF-02	N/A	N/A	Oct. 28, 2023	Oct. 27, 2024
16	Test Cable	N/A	RF-03	N/A	N/A	Oct. 28, 2023	Oct. 27, 2024
17	D.C. Power Supply	LongWei	TPR-6405D	N/A	N/A	\	\
18	EMC Software	Frad	EZ-EMC	Ver.EMC-CON 3A1.1	N/A	\	\
19	Turntable	MF	MF-7802BS	N/A	N/A	\	\
20	Antenna tower	MF	MF-7802BS	N/A	N/A	\	\

3.CONDUCTED EMISSION AT THE MAINS TERMINALS TEST

3.1 Block Diagram Of Test Setup



3.2 Test Standard

FCC PART 15 B

3.3 Power Line Conducted Emission Limit

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

3.4 EUT Configuration on Test

The following equipments are installed on conducted emission test to meet FCC PART 15 B requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

3.5 Operating Condition of EUT

3.5.1 Setup the EUT and simulators as shown in Section 3.1.
3.5.2 Turn on the power of all equipments.
3.5.3 Let the EUT work in test modes and test it.

3.6 Test Procedure

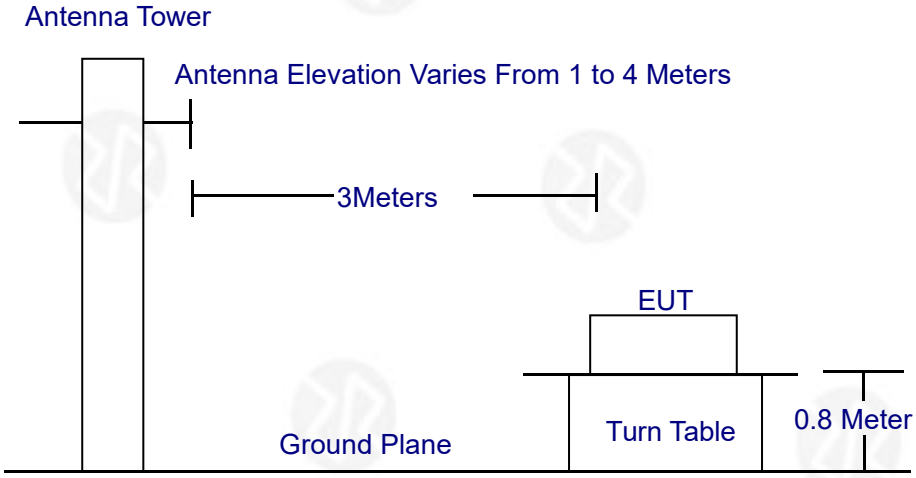
The EUT is put on the ground and connected to the AC mains through a Artificial Mains Network (AMN). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are checked to find out the maximum conducted emission levels according to the **FCC PART 15 B** regulations during conducted emission test.
The bandwidth of the test receiver (R&S Test Receiver ESCI) is set at 10KHz.
The frequency range from 150 KHz to 30 MHz is investigated.

3.7 Test Result

N/A

4.RADIATION EMISSION TEST

4.1 Block Diagram of Test Setup



4.2 Test Standard

FCC PART 15 B

4.3 Radiation Limit

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (dBμV/m)
30 ~ 88	3	40.0
88 ~ 216	3	43.5
216 ~ 960	3	46.0
960 ~ 1000	3	54.0

4.4 EUT Configuration on Test

The FCC PART 15 B regulations test method must be used to find the maximum emission during radiated emission test.The configuration of EUT is the same as used in conducted emission test.Please refer to Section 2.2.

4.5 Operating Condition of EUT

Same as conducted emission test, which is listed in Section 2.2 except the test set up replaced as Section 4.1.

4.6 Test Procedure

The EUT and its simulators are placed on a turned table that is 0.8 meter above the ground. The turned table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna that is mounted on the antenna tower. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated biconical and log periodical antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on test. In order to find the maximum emission levels, the interface cable must be manipulated according to FCC PART 15 B on radiated emission test.

The bandwidth setting on the field strength meter (R&S Test Receiver ESCI) is set at 120KHz below 1GHz, set at 1MHz above 1GHz.The frequency range from 30MHz to 1000MHz is checked.The highest frequency of the internal sources of the EUT was below 108MHz, so the measurement was only made up to 1GHz.

4.7 Test Result

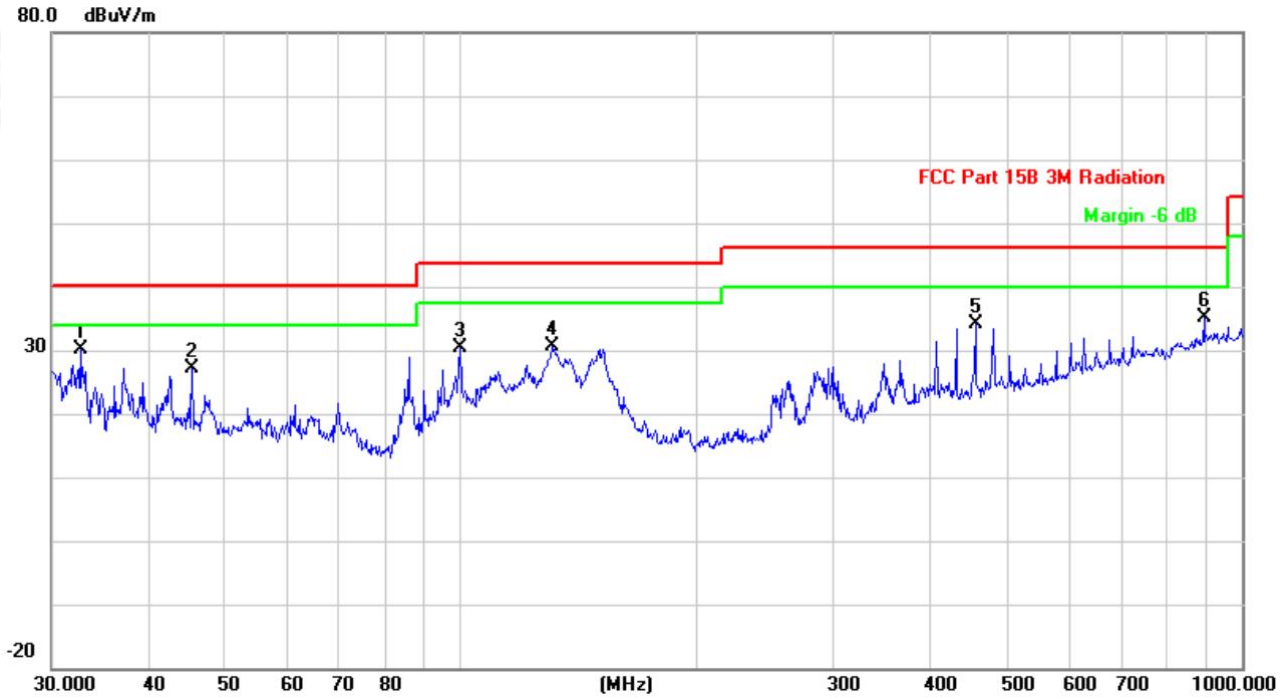
Radiation Emission Test Data			
Temperature:	26℃	Relative Humidity:	54%
Pressure:	1009hPa	Phase :	Horizontal
Test Voltage :	DC 12V	Test Mode:	Working

Between 30MHz-1GHz:

Node:EUT operates at full load

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB
1		42.4508	33.74	-9.50	24.24	40.00	-15.76
2	*	85.8983	46.85	-13.42	33.43	40.00	-6.57
3		130.8370	43.45	-9.38	34.07	43.50	-9.43
4		144.8417	42.68	-8.39	34.29	43.50	-9.21
5		348.0274	40.39	-7.66	32.73	46.00	-13.27
6		455.9058	40.27	-4.34	35.93	46.00	-10.07

Radiation Emission Test Data			
Temperature:	26℃	Relative Humidity:	54%
Pressure:	1009hPa	Phase :	Vertical
Test Voltage :	DC 12V	Test Mode:	Working



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB
1	*	32.6340	41.06	-10.83	30.23	40.00	-9.77
2		45.3754	36.50	-9.45	27.05	40.00	-12.95
3		99.8777	42.98	-12.71	30.27	43.50	-13.23
4		130.8370	39.92	-9.38	30.54	43.50	-12.96
5		455.9058	38.43	-4.34	34.09	46.00	-11.91
6		893.8566	31.78	3.24	35.02	46.00	-10.98

Note:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Level =Receiver Read level + Correct Factor -Limit
If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

1GHz-25GHz

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
V	4925.00	53.00	30.55	5.77	24.66	52.88	74.00	-21.12	Pk
V	4925.00	43.71	30.55	5.77	24.66	43.59	54.00	-10.41	AV
V	7418.00	53.61	30.33	6.32	24.55	54.15	74.00	-19.85	Pk
V	7418.00	43.04	30.33	6.32	24.55	43.58	54.00	-10.42	AV
V	9905.00	53.88	30.85	7.45	24.69	55.17	74.00	-18.83	Pk
V	9905.00	43.08	30.85	7.45	24.69	44.37	54.00	-9.63	AV
V	12426.00	53.81	31.02	8.99	25.57	57.35	74.00	-16.65	Pk
V	12426.00	43.38	31.02	8.99	25.57	46.92	54.00	-7.08	AV
V	18624.00	-	-	-	-	-	74.00	-	Pk
V	18624.00	-	-	-	-	-	54.00	-	AV
H	4960.00	51.90	30.55	5.77	24.66	51.78	74.00	-22.22	Pk
H	4960.00	43.26	30.55	5.77	24.66	43.14	54.00	-10.86	AV
H	7440.00	50.44	30.33	6.32	24.55	50.98	74.00	-23.02	Pk
H	7440.00	43.49	30.33	6.32	24.55	44.03	54.00	-9.97	AV
H	9920.00	51.03	30.85	7.45	24.69	52.32	74.00	-21.68	Pk
H	9920.00	44.00	30.85	7.45	24.69	45.29	54.00	-8.71	AV
H	12400.00	54.68	31.02	8.99	25.57	58.22	74.00	-15.78	Pk
H	12400.00	43.33	31.02	8.99	25.57	46.87	54.00	-7.13	AV
H	19624.00	-	-	-	-	-	74.00	-	Pk
H	19624.00	-	-	-	-	-	54.00	-	AV

Remark:
1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

5. EUT TEST PHOTOGRAPHS

Reference to the appendix I for details.

6 .EUT Photographs

Reference to the appendix Ⅱ for details.

※※※※※ END OF REPORT ※※※※※