

Report No.: KSEM220600075301

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# TEST REPORT

Application No.:KSEM2206000753ATFCC ID:2A7DJ-29366867652Applicant:PK Solutions LLC

Address of Applicant: 10811 E Harry St. Wichita, KS 67207, USA Manufacturer: Arima Communications (Jiangsu) Co., Ltd

Address of Manufacturer: No.168, Jiaotong North Road, WuJiang Zone, Suzhou City ,JiangSu

Province

Factory: Arima Communications (Jiangsu) Co., Ltd

Address of Factory: No.168, Jiaotong North Road, WuJiang Zone, Suzhou City ,JiangSu

Province

**Equipment Under Test (EUT):** 

**EUT Name:** wrangler Mass Charging Cradle

Model No.: WR01

Standard(s): 47 CFR Part 15, Subpart B

**Date of Receipt:** 2022-06-13

**Date of Test:** 2022-06-14 to 2022-06-14

**Date of Issue:** 2022-06-20

Test Result: Pass\*

Eric Lin Laboratory Manager



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<sup>\*</sup> In the configuration tested, the EUT complied with the standards specified above.



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	Revision Record								
Version	Chapter	Date	Modifier	Remark					
01		2022-06-20		Original					

Authorized for issue by:		
	Kun Gu	
	Kun_gu/Project Engineer	
	Eni fri	
	Eric Lin/Reviewer	



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# 2 Test Summary

Emission Part								
Item	Standard	Method	Requirement	Result				
Conducted Emissions at Mains Terminals (150kHz-30MHz)	47 CFR Part 15,	ANSI C63.4:2014	15.107(a);Class B	Pass				
Radiated Emissions (30MHz-1GHz)	Subpart B	ANSI C63.4:2014	15.109(a);Class B	Pass				



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### **General Information**

#### Details of E.U.T. 4.1

Power supply:	INPUT : DC20V/3A by Adapter
	OUTPUT: DC5 V(Charging Cradle*5)
	Test Voltage: AC120V/60Hz

### 4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Adapter	ABP	AD0651-2003000F	/
Smart Radios*5	Walt	/	/

### 4.3 Measurement Uncertainty & Decision Rule

### **Measurement Uncertainty:**

	modeli omone oncontainty.								
No.	Item Measurement Uncertainty (U <sub>LAB</sub> ) *		Ucispr						
1	Conducted Emission	2.4dB (9kHz to 150kHz)	3.8dB (9kHz to 150kHz)						
'	at mains port using AMN	2.2dB (150kHz to 30MHz)	3.4dB (150kHz to 30MHz)						
2	Conducted Emission at telecommunication port using AAN	4.0 dB (150kHz to 30MHz)	5.0dB (150kHz to 30MHz)						
3	Radiated Power	3.2dB	4.5dB (30MHz to 300MHz)						
4	Radiated Emission (10m)	4.1 dB	6.3dB (30MHz-1GHz)						
		4.6 dB (30MHz-1GHz)	6.3dB (30MHz-1GHz)						
_	Dadiated Emission (2m)	5.0dB (1GHz-6GHz)	5.2dB (1GHz-6GHz)						
5	Radiated Emission (3m)	5.2dB (6GHz-18GHz)	5.5dB (6GHz-18GHz)						
		5.3dB (18GHz-40GHz)	N/A						

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

CISPR 16-4-2 for emission measurements is as below described.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

 $U_{LAB}$  less than  $U_{CISPR}$ , therefore:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit.
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.
- For immunity testing no decision rule is applicable.



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#### 4.4 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted.

Note:

1.SGS is not responsible for wrong test results due to incorrect information (e.g. max. clock frequency, highest internal frequency, antenna gain, cable loss, etc.) is provided by the applicant. (if applicable).

2.SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (if applicable).

### 4.5 Test Facility

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

#### CNAS (No. CNAS L4354)

CNAS has accredited Compliance Certification Services (Kunshan) Inc. to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

#### • A2LA (Certificate No. 2541.01)

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

#### • FCC (Designation Number: CN1172)

Compliance Certification Services (Kunshan) Inc. has been recognized as an accredited testing laboratory.

Designation Number: CN1172.

#### ISED (CAB identifier: CN0072)

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.

Company Number: 2324E

#### • VCCI (Member No.: 1938)

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-20134, R-11600, C-11707, T-11499, G-10216 respectively.

### 4.6 Deviation from Standards

None

### 4.7 Abnormalities from Standard Conditions

None



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# 5 Equipment List

Conducted Emissions at Mains Terminals (150kHz-30MHz)								
Equipment Manufacturer Model No Inventory No Cal Date C								
EMI TEST RECEIVER	R&S	ESCI	KS301101	01/22/2022	01/21/2023			
TWO-LINE V- NETWORK	R&S	ENV216	KS301197	10/12/2021	10/11/2022			
V (V-LISN)	SCHWARZBECK	NNLK 8129	KS301091	10/12/2021	10/11/2022			
Pulse LIMITER	R&S	ESH3-Z2	KUS1902E001	01/22/2022	01/21/2023			
Software	Faratronic	EZ_EMC-v 3A1	N/A	N/A	N/A			

Radiated Emissions (30MHz-1GHz)								
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date			
EMI Test Receiver	R&S	ESCI	KS301196	10/11/2021	10/10/2022			
Antenna	TESEQ	CBL 6112D	KUS1806E006	03/05/2022	03/04/2024			
Spectrum Analyzer	R&S	FSU26	KS301206	04/01/2022	03/31/2023			
Signal Analyzer	R&S	FSV40	KUS1806E003	10/11/2021	10/10/2022			
Software	Faratronic	EZ_EMC v 3A1	N/A	N/A	N/A			

General used equipment							
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date		
Digital Pressure Meter	Mengde	DYM3	CZ750023	02/01/2022	01/31/2023		
			CZ720001-1				
		CZ720001-2					
Temperature & Humidity			CZ720001-3				
Recorder	Anymetre	TH603	CZ720001-4	10/14/2021	10/13/2022		
recorder			CZ720001-5				
			CZ720001-6				
			CZ720001-7				



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### 6 Emission Test Results

### 6.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

Test Requirement: 47 CFR Part 15, Subpart B

Test Method: ANSI C63.4:2014

Limit:

0.15MHz-0.5MHz:  $66dB(\mu V)$ - $56dB(\mu V)$  quasi-peak,  $56dB(\mu V)$ - $46dB(\mu V)$  average

0.5MHz-5MHz: 56dB( $\mu$ V) quasi-peak, 46dB( $\mu$ V) average 5MHz-30MHz: 60dB( $\mu$ V) quasi-peak, 50dB( $\mu$ V) average

Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

#### 6.1.1 E.U.T. Operation

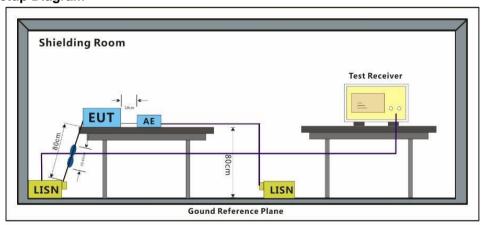
Operating Environment:

Temperature: 23.6 °C Humidity: 62.0 % RH Atmospheric Pressure: 1010 mbar

6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT charging for 5 Smart Radios
Pre-scan	01	Keep EUT charging for 4 Smart Radios
	02	Keep EUT charging for 3 Smart Radios
	03	Keep EUT charging for 2 Smart Radios
	04	Keep EUT charging for 1 Smart Radios

### 6.1.3 Test Setup Diagram





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#### 6.1.4 Measurement Procedure and Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

Remark: Level= Read Level+ Cable Loss+ LISN Factor



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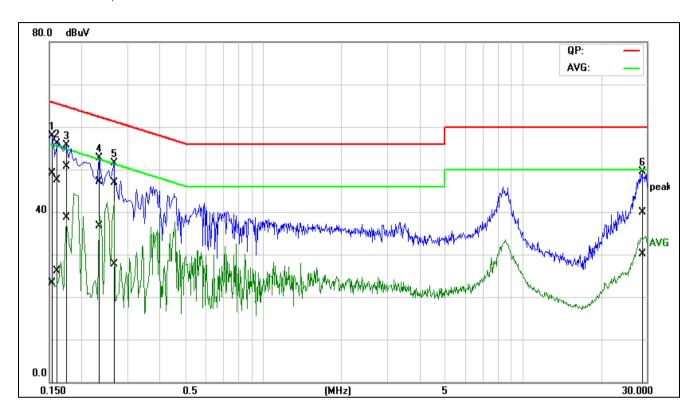
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Test Mode: 00; Line: Live line



No.	Frequency	QuasiPeak	Average	Correction	QuasiPeak	Average	QuasiPeak	Average	QuasiPeak	Average	Remark
		reading	reading	factor	result	result	limit	limit	margin	margin	
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.1531	29.67	3.72	19.50	49.17	23.22	65.83	55.83	-16.66	-32.61	Pass
2	0.1584	28.06	6.53	19.50	47.56	26.03	65.55	55.55	-17.99	-29.52	Pass
3*	0.1714	31.11	19.17	19.50	50.61	38.67	64.89	54.89	-14.28	-16.22	Pass
4	0.2326	27.69	17.14	19.50	47.19	36.64	62.36	52.36	-15.17	-15.72	Pass
5	0.2634	27.47	8.17	19.51	46.98	27.68	61.32	51.32	-14.34	-23.64	Pass
6	28.7417	19.70	9.88	20.28	39.98	30.16	60.00	50.00	-20.02	-19.84	Pass



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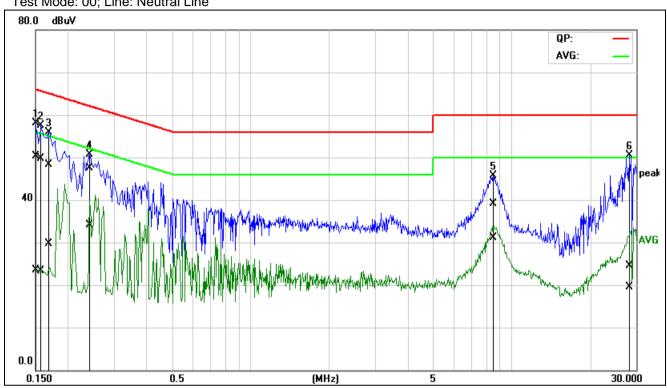
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Test Mode: 00; Line: Neutral Line



No.	Frequency	QuasiPeak	Average	Correction	QuasiPeak	Average	QuasiPeak	Average	QuasiPeak	Average	Remark
		reading	reading	factor	result	result	limit	limit	margin	margin	
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.1511	30.81	3.99	19.48	50.29	23.47	65.94	55.94	-15.65	-32.47	Pass
2	0.1560	30.21	3.83	19.48	49.69	23.31	65.67	55.67	-15.98	-32.36	Pass
3	0.1668	28.78	10.31	19.48	48.26	29.79	65.12	55.12	-16.86	-25.33	Pass
4*	0.2426	28.10	14.62	19.49	47.59	34.11	62.01	52.01	-14.42	-17.90	Pass
5	8.5355	19.18	11.18	20.01	39.19	31.19	60.00	50.00	-20.81	-18.81	Pass
6	28.2157	4.28	-0.86	20.29	24.57	19.43	60.00	50.00	-35.43	-30.57	Pass



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### 6.2 Radiated Emissions (30MHz-1GHz)

Test Requirement: 47 CFR Part 15, Subpart B

Test Method: ANSI C63.4:2014

Limit:

Class B

Test Distance: 3m

30MHz -88MHz 40.0(dBµV/m) quasi-peak 88MHz-216MHz 43.5(dBµV/m) quasi-peak 216MHz-960MHz 46.0(dBµV/m) quasi-peak 960MHz-1000MHz 54.0(dBµV/m) quasi-peak

Detector: Peak for pre-scan (120kHz resolution bandwidth) 30MHz to1000MHz

Class B

Test Distance: 10m

30MHz -88MHz 29.5(dBµV/m) quasi-peak 88MHz-216MHz 33.1(dBµV/m) quasi-peak 216MHz-960MHz 35.6(dBµV/m) quasi-peak 960MHz-1000MHz 43.5(dBµV/m) quasi-peak

Detector: Peak for pre-scan (120kHz resolution bandwidth) 30MHz to1000MHz

### 6.2.1 E.U.T. Operation

Operating Environment:

51.6 % RH Temperature: 26.2 °C Humidity: Atmospheric Pressure: 1010 mbar

#### 6.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	Keep EUT charging for 5 Smart Radios
Pre-scan	01	Keep EUT charging for 4 Smart Radios
	02	Keep EUT charging for 3 Smart Radios
	03	Keep EUT charging for 2 Smart Radios
	04	Keep EUT charging for 1 Smart Radios



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Test Report Form Version: Rev01

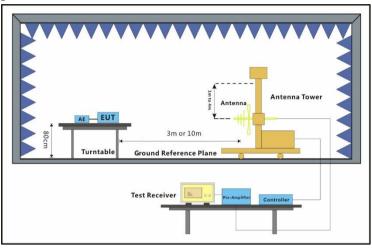
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#### 6.2.3 Test Setup Diagram



#### 6.2.4 Measurement Procedure and Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor



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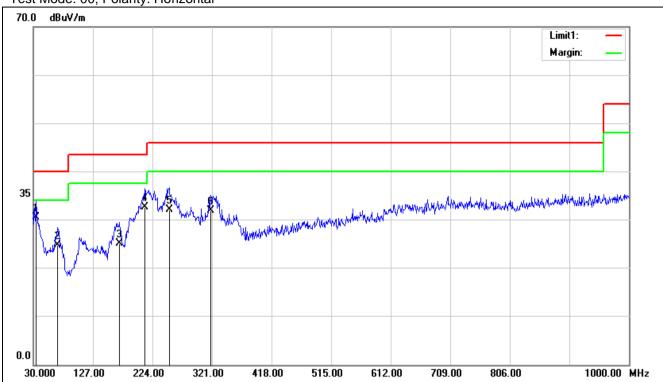
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Test Mode: 00; Polarity: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	34.8500	5.90	24.67	30.57	40.00	-9.43	201	25	QP
2	68.8000	9.09	15.60	24.69	40.00	-15.31	201	19	QP
3	170.6500	8.19	16.94	25.13	43.50	-18.37	100	243	QP
4	211.3900	15.76	16.82	32.58	43.50	-10.92	114	0	QP
5	251.1600	12.32	19.85	32.17	46.00	-13.83	100	337	QP
6	319.0600	10.77	21.09	31.86	46.00	-14.14	100	133	QP



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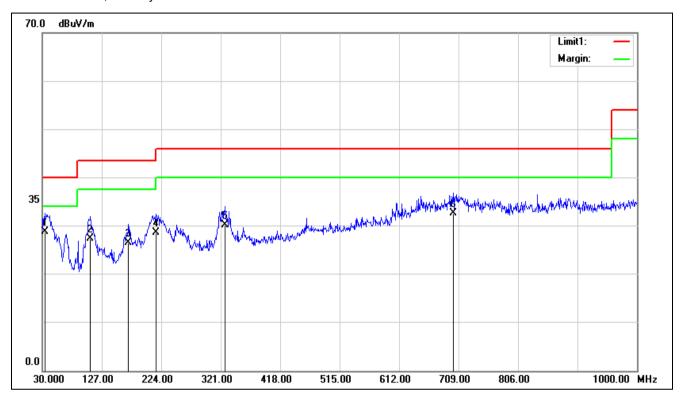
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Test Mode: 00; Polarity: Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	34.8500	4.06	24.67	28.73	40.00	-11.27	123	360	QP
2	108.5700	9.11	18.28	27.39	43.50	-16.11	100	211	QP
3	170.6500	9.64	16.94	26.58	43.50	-16.92	100	358	QP
4	215.2700	12.05	16.62	28.67	43.50	-14.83	100	354	QP
5	327.7900	9.02	21.17	30.19	46.00	-15.81	100	83	QP
6	700.2700	5.07	27.64	32.71	46.00	-13.29	131	360	QP



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### 7 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSEM2206000753AT

# 8 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for KSEM2206000753AT

- End of the Report -



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