MPE TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

Fetal&Maternal Monitor

ISSUED TO
Edan Instruments, Inc

#15 Jinhui Road, Jinsha Community, Kengzi Sub-District, Pingshan District, 518122 Shenzhen P.R. China

Tested by: Liyao Zong
Date: Apr. 08, 2022

Approved by: Wei Yanquan (Chief Engineer)
Date: Apr. 08, 2022

Report No.:	BL-SZ2040038-701
EUT Name:	Fetal&Maternal Monitor
Model Name:	F15 Air (refer section 2.4)
Brand Name:	EDAN
Test Standard:	47 CFR Part 1.1307 47 CFR Part 1.1310 (refer section 3.1)
FCC ID:	SMQF15EDAN
Test Conclusion:	Pass
Test Date:	Dec. 14, 2020
Date of Issue:	Apr. 08, 2022

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Revision History

Version	Issue Date	Revisions Content
Rev. 01	Oct. 27, 2021	Initial Issue
Rev. 02	Apr. 08, 2022	1. Updated EUT Stage. 2. Updated Section 4.4.

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1 GENERAL INFORMATION

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science & Technology Park, Shahe West Road, Nanshan District, Shenzhen, Guangdong Province, China
Phone Number	+86 755 6685 0100

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science & Technology Park, Shahe West Road, Nanshan District, Shenzhen, Guangdong Province, China
Description	All measurement facilities used to collect the measurement data are located at Block B, 1/F, Baisha Science & Technology Park, Shahe West Road, Nanshan District, Shenzhen, Guangdong Province, China.

1.3 Test Environment Condition

Ambient Temperature	21 to 23 ℃
Ambient Relative Humidity	40 to 50%
Ambient Pressure	100 to 102 KPa

1.4 Announce

(1) The test report reference to the report template version v1.2.

(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.

(3) The test report is invalid if there is any evidence and/or falsification.

(4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.

(5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.

(6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

(7) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

(8) The report without China inspection body and laboratory Mandatory Approval (CMA) mark has no effect of proving to the society.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Edan Instruments, Inc
Address	#15 Jinhui Road, Jinsha Community, Kengzi Sub-District, Pingshan District, 518122 Shenzhen P.R. China

2.2 Manufacturer Information

Manufacturer	Edan Instruments, Inc
Address	#15 Jinhui Road, Jinsha Community, Kengzi Sub-District, Pingshan District, 518122 Shenzhen P.R. China

2.3 Factory Information

Factory	Edan Instruments, Inc
Address	#15 Jinhui Road, Jinsha Community, Kengzi Sub-District, Pingshan District, 518122 Shenzhen P.R. China

2.4 General Description for Equipment under Test (EUT)

EUT Name	Fetal&Maternal Monitor
Model Name Under Test	F15 Air
Series Model Name	F15, F15 Air
Description of Model name differentiation	All models are same with electrical parameters and internal circuit structure, but only differ in model name.
Serial Number	N/A
Hardware Version	N/A
Software Version	N/A
Dimensions (Approx.)	N/A

2.5 Ancillary Equipment

Ancillary Equipment	Battery	
	Brand Name	Icon Energy System CO., LTD
	Model No.	ID996
	Serial No.	N/A
	Capacitance	5100 mAh
	Rated Voltage	10.8 V
	Limit Charge Voltage	12.6 V

2.6 Technical Information

Network and Wireless connectivity	WIFI 802.11b, Qi, NFC

The requirement for the following technical information of the EUT was tested in this report:

Operating Frequency	110.5~205 kHz	
Antenna Type	Coil Antenna	
About Product	Only Qi was tested in this report.	
Exposure Category	General Population/Uncontrolled exposure	
EUT Stage	Mobile	
Product	Type	
	☒ Production unit	☐ Identical prototype

3 STANDARD INFORMATION

3.1 Test Standard

No.	Identity	Document Title
1	47 CFR Part 1.1307	Actions that may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared.
2	47 CFR Part 1.1310	Radiofrequency radiation exposure limits.
3	KDB 680106 D01 v03r01	RF Exposure Considerations for Low Power Consumer Wireless Power Transfer Applications

3.2 Radiofrequency Radiation Exposure Limit

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW / cm ^{2})	Averaging time (minutes)
(A) 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
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f^2	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30
*f = frequency in MHz * = Plane-wave equivalent power density*				

NOTE:

Limits: According KDB 680106 D01, emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m.

General Population/Uncontrolled Exposure: Locations where there is the exposure of individuals who have no knowledge or control of their exposure. General population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

Occupational/Controlled Exposure: Locations where there is exposure that may be incurred by persons who are aware of the potential for exposure. In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully

aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

3.3 Measurement Uncertainly

Measurement uncertainly evaluation for electric filed strength and magnetic filed strength test

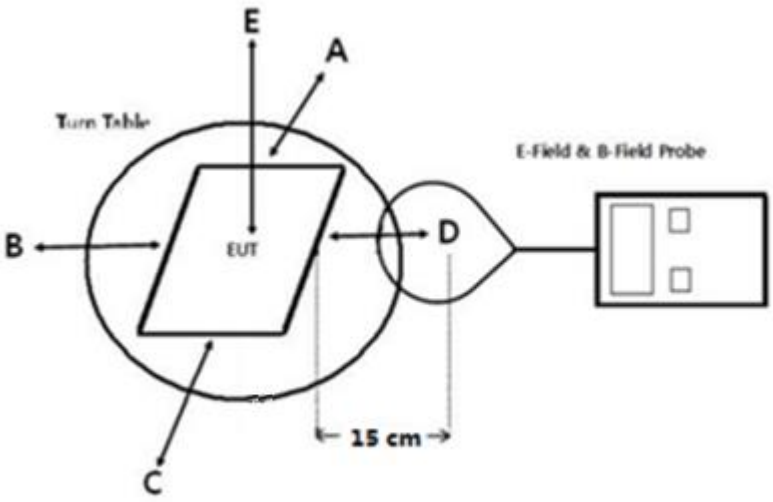
This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Value
Electric Filed Strength	1.13 dB
Magnetic Filed Strength	1.18 dB

4 TEST SETUP

4.1 Test Setup Photo

Maximum H-field and E-filed measurements were made on each of five sides of the EUT that could come in contact with a user. The five sides are defined as follows: Top (A), Left (B), Bottom (C), Right (D) and Front (E). Refer to the test position diagram below.



4.2 Measurement procedure

1. The RF exposure test was performed in anechoic chamber.
2. The measurement probe was placed at test distance (15 cm) which is between the edge of the charger and the geometric center of probe.
3. The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
4. The EUT was measured according the dictates of KDB 680106 D01v03.

4.3 Mobile Condition

Probe	Condition	Test Distance (cm) A/B/C/D	Test Distance (cm) E
H-field	Mobile	15	20
E-field	Mobile	15	20

4.4 Equipment Approval Considerations item 5.2 of KDB 680106 D01 v03.

1. Power transfer frequency is less than 1 MHz.
   - The device operates at a frequency 110.5KHz ~ 205 kHz

2. Output power from each primary coil is less than or equal to 15 watts.
   - Output power from primary coil 5 watts.

3. The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.
   -The transmission system consists of a charging system of three coils, capable of detecting the receiver device.

4. Client device is placed directly in contact with the transmitter.
   - Client device is placed directly in contact with the transmitter.

5. Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
   - On the normal use this EUT only support mobile exposure condition.

6. The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.
   - Refer to following test results.
   The EUT E-Field Strength levels at 15 cm < 50 % of the MPE E-Field Strength limit 307.0 V/m
   6.450 V/m (Max. at 15 cm) < 307 V/m
   The EUT H-Field Strength levels at 15 cm< 50 % of the MPE H-Field Strength limit
   0.062 A/m (Max. at 15 cm) < 0.815 A/m

4.5 Test Equipment

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
H-field Probe	SCHWARZBECK	FESP 5134-40	5134-40-242	2020.10.09	2021.10.08
E-field Probe	Narda	EP-602	611WX80276	2020.06.08	2021.06.08
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-30	103118	2020.06.08	2021.06.08
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2020.02.18	2021.02.17
Smart phone	Apple	A2104	G6TXENAKPJ3	N/A	N/A
Smart watch	Apple	A1859	FHLW2M4AJ5X5	N/A	N/A

4.6 Test Configuration

To check all kinds of possible modes, the EUT was evaluated with appropriate client and under each charging condition as the below table:

Test Mode NO.	Description	
1	Charging Mode	AC/DC Adapter + EUT+ Load1 + Load2 + Load3(Battery Status: <1%)
2	Charging Mode	AC/DC Adapter + EUT+ Load1 + Load2 + Load3(Battery Status: <50%)
3	Charging Mode	AC/DC Adapter + EUT+ Load1 + Load2 + Load3(Battery Status: 100%)

5 TEST RESULT

5.1 H-field

Distance (cm)	Test Mode	EUT Edges				Limit (A/m)
		A (A/m)	B (A/m)	C (A/m)	D (A/m)	
15	1	**0.132**	0.091	0.009	0.085	1.63
15	2	0.108	0.075	0.008	0.084	1.63
15	3	0.125	0.088	0.010	0.093	1.63

Distance (cm)	Test Mode	EUT Edge	Limit (A/m)
		E (A/m)	
20	1	0.075	1.63
20	2	0.068	1.63
20	3	0.073	1.63

5.2 E-field

Distance (cm)	Test Mode	EUT Edges				Limit (V/m)
		A (V/m)	B (V/m)	C (V/m)	D (V/m)	
15	1	**14.652**	10.854	3.215	9.985	614
15	2	14.593	11.365	3.548	8.464	614
15	3	13.456	10.165	2.155	9.543	614

Distance (cm)	Test Mode	EUT Edge	Limit (V/m)
		E (V/m)	
20	1	8.198	614
20	2	9.356	614
20	3	8.054	614

6 Test Conclusion

6.1 H-field

Distance (cm)	Worst-case Test Mode	EUT Edge A (A/m)	Limit (A/m)	50% Limit (A/m)	Verdict
15	1	0.132	1.63	0.815	Pass

6.2 E-field

Distance (cm)	Worst-case Test Mode	EUT Edge A (V/m)	Limit (V/m)	50% Limit (V/m)	Verdict
15	1	14.652	614	307	Pass

According KDB 680106 D01v03, the EUT is compliant with the 50% of the MPE limits.

--END OF REPORT--