

RF Exposure Evaluation Report

Product : DREO BABY MONITOR
Trade mark : DREO
Model/Type reference : DR-BBM001, WDR-BM001
Serial Number : N/A
Report Number : EED32N81477102
FCC ID : 2A3SY-BBM001
Date of Issue : Mar. 04, 2022
Test Standards : 47 CFR Part 1.1307
47 CFR Part 1.1310
KDB447498D01 General RF Exposure Guidance v06
Test result : PASS

Prepared for:

Hesung Innovation Limited
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2 Version

Version No.	Date	Description
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4 General Information

4.1 Client Information

Applicant:	Hesung Innovation Limited
Address of Applicant:	Room 803, Chevalier House, 45-51 Chatham Road South, Tsim Sha Tsui, Kowloon
Manufacturer:	Shenzhen Hesung Innovation Technology Co., LTD
Address of Manufacturer:	26th Floor, Building A7, Chuangzhiyuncheng, Liuxian Avenue, Nanshan District, Shenzhen
Factory:	Power7 Technology (Dong Guan) Co., Ltd.
Address of Factory:	No.28 Binjiang Street.Shishuikou Village, Qiaotou Town, Dongguan City, Guangdong Province P.R.China

4.2 General Description of EUT

Product Name:	DREO BABY MONITOR	
Model No.(EUT):	DR-BBM001, WDR-BM001	
Test Model No:	DR-BBM001	
Trade Mark:	DREO	
Power Supply:	Adapter:(Camera)	Model: TPA211F-06050-US Input:100-240V~50/60Hz 0.2A Output: 5V  1.2A
Operation Frequency:	2410MHz - 2477MHz	
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)	
Test Power Grade:	Default	
Test Software of EUT:	N/A(manufacturer declare)	
Modulation Type:	GFSK	
Number of Channel:	20	
Hopping Channel Type:	Adaptive Frequency Hopping systems	
Antenna Type and Gain:	Dipole antenna, 2dBi	
Test Voltage:	AC 120V,60Hz	
Sample Received Date:	Dec. 31, 2021	
Sample tested Date:	Dec. 31, 2021 to Jan. 27, 2022	
<p>Company Name and Address shown on Report, the sample(s) and sample information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.</p> <p>Model No.: DR-BBM001, WDR-BM001</p> <p>Only the model DR-BBM001 was tested, The difference between each model is only for the product name is different, the color is different, the rest circuit principle, the internal structure, the PCB Layout and the safety key parts are the same, does not affect the EMC and safety test.</p>		

4.3 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.4 Deviation from Standards

None.

4.5 Abnormalities from Standard Conditions

None.

4.6 Other Information Requested by the Customer

None.

5 SAR Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

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 Exposures				
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
(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
300–1500 .....	.....	.....	f/1500	30
1500–100,000 .....	.....	.....	1.0	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

5.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

5.1.3 EUT RF Exposure

For FHSS 2.4G

Antenna Gain: 2dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1.0 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2410MHz)	0.85	0.5±0.5	1	1.259
Middle(2441.5MHz)	1.54	1.5±0.5	2	1.585
Highest(2477MHz)	1.47	1.5±0.5	2	1.585

The worst case:

Maximum tune-up Power (mW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
1.585	2	0.0006	1.0	PASS

Note: 1) Refer to report No. EED32N81477101 for EUT test Max Conducted Peak Output Power value.

2) $P_d = (P_{out} * G) / (4 * \pi * R^2) = (1 * 3.162) / (4 * 3.1416 * 20^2) = 0.0006$

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32N81477101 for EUT external and internal photos.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

*** End of Report ***