Radio Test Report

FCC ID:2AUDF-CQ425B&IC:29207-CQ425B

Report No.	:	TBR-C-202409-0194-18
Applicant	:	Shenzhen ADDX Innovation Technology co., LTD.
Equipment Under Test (EUT)		
EUT Name	:	Smart Battery Camera
Model No.	:	CQ1
HVIN	:	CQ125
Series Model No.	:	X85,X88,D3,D3B,D3K,D3KD,BC3,BC52,A16-V66P,CN-V30PB, KP-CA189, PBC1001,SC-2028WS,SC-2028WSP,SN-VP01,Uho-B85, V-B1S,VIS-SMAR505,BY-X85,CQ1S, CQ1H ,CQ1F ,CQ1X ,CQ1K , CQ1D,CQ4
Brand Name	:	N/A
Sample ID	:	HC-C-202409-0194-01-01&HC-C-202409-0194-01-02
Receipt Date	:	2024-09-30
Test Date	:	2024-09-30 to 2024-11-07
Issue Date	:	2024-11-07
Standards	:	FCC Part 15 Subpart C 15.247 RSS-247 Issue 3 August 2023 RSS-Gen Issue 5 April 2018+Amendment 1 (March 2019)+Amendment 2 (February 2021)
Test Method	:	ANSI C63.10: 2013 KDB 558074 D01 15.247 Meas Guidance v05r02
Conclusions	:	**PASS**
		In the configuration tested, the EUT complied with the standards specified above.
Test By	:	Jolin Lee
Reviewed By	:	Henry Huang
Approved By	:	Ivan Su

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

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Revision History

Report No.	Version	Description	Issued Date
TBR-C-202409-0194-18	Rev.01	Initial issue of report	2024-11-14

1. General Information about EUT

1.1 Client Information

Applicant	:	Shenzhen ADDX Innovation Technology co., LTD.
Address	:	NO.2013, Building 9B-3. Shenzhen Bay, Technology and Ecological Park, Nanshan District, shenzhen, China
Manufacturer	:	Shenzhen ADDX Innovation Technology co., LTD.
Address	:	NO.2013, Building 9B-3. Shenzhen Bay, Technology and Ecological Park, Nanshan District, shenzhen, China

1.2 General Description of EUT (Equipment Under Test)

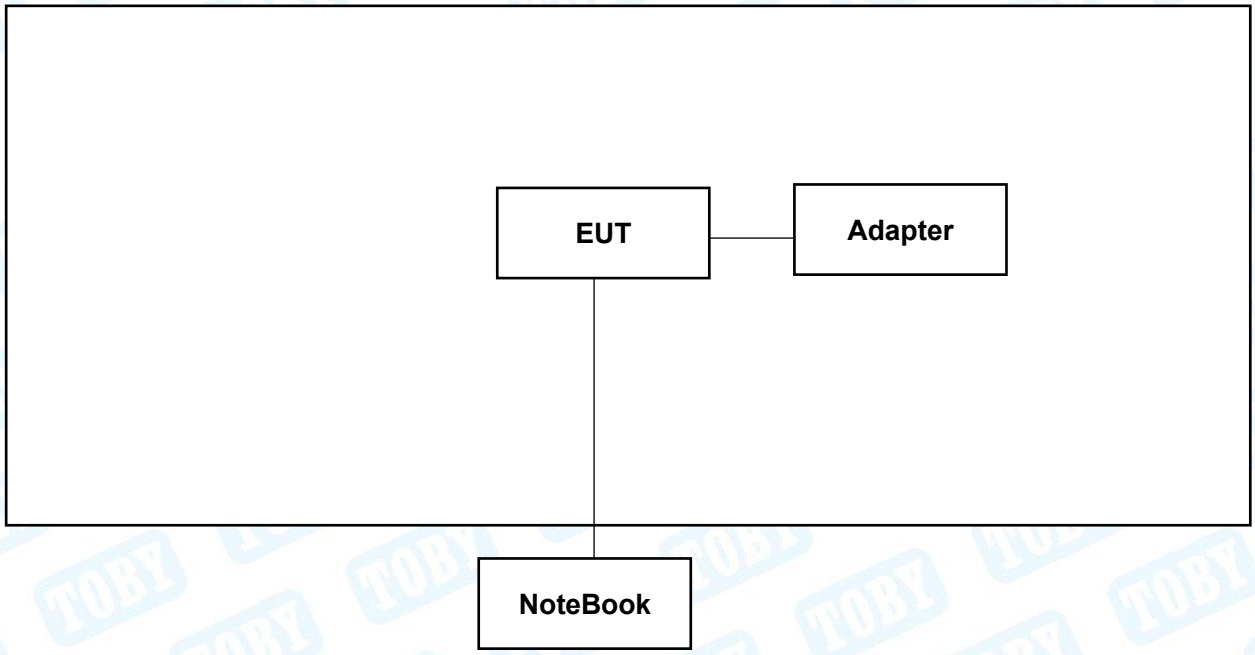
EUT Name	:	Smart Battery Camera	
Models No.	:	CQ1,X85,X88,D3,D3B,D3K,D3KD,BC3,BC52,A16-V66P, CN-V30PB,KP-CA189, PBC1001,SC-2028WS,SC-2028WSP, SN-VP01,Uho-B85,V-B1S,VIS-SMAR505,BY-X85,CQ1S, CQ1H ,CQ1F ,CQ1X ,CQ1K ,CQ1D,CQ4	
Model Different	:	All these models are identical in the same PCB, layout and electrical circuit, The only difference is model name.	
Product Description	:	Operation Frequency:	2412MHz~2462MHz
		Number of Channel:	11 channels
		Antenna Gain:	3.85dBi FPC Antenna
		Modulation Type:	802.11b: DSSS (DQPSK, DBPSK, CCK) 802.11g: OFDM (BPSK, QPSK,16QAM, 64QAM) 802.11n: OFDM (BPSK, QPSK,16QAM, 64QAM)
Power Rating	:	USB Input:5V DC 3.7V 4400mAh Rechargeable Li-ion battery（XL18650-2200-2P） DC 3.6V 4400mAh Rechargeable Li-ion battery（INR18650） （Battery differences are mainly based on the applicant and model and capacity differences, only the worst mode is assessed （INR18650）	
Software Version	:	V1.14.0	
Hardware Version	:	CQ425_C01_V3	

Remark:
The adapter provided by the TOBY ,the antenna gain from the manufacturer, the verified for the RF conduction test provided by TOBY test lab.The above antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

(1) Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	**2412**	05	2432	09	2452
02	2417	**06**	**2437**	10	2457
03	2422	07	2442	**11**	**2462**
04	2427	08	2447		
Note: CH 01~CH 11 for 20MHz Bandwidth **CH 03~CH 09 for 40MHz Bandwidth**					

1.3 Block Diagram Showing the Configuration of System Tested



1.4 Description of Support Units

Equipment Information				
Name	**Model**	**S/N**	**Manufacturer**	**Used "√"**
Notebook	HYLR-WFQ9	AAMFPM1418000165	honour	√

1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

For Conducted Emission Test(AC POWER)	
Final Test Mode	**Description**
Mode 1	TX b Mode Channel 01
For Radiated and RF Conducted Test	
Final Test Mode	**Description**
Mode 2	TX Mode b Mode Channel 01/06/11
Mode 3	TX Mode g Mode Channel 01/06/11
Mode 4	TX Mode n(HT20) Mode Channel 01/06/11

Note:

(1) For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate.

According to ANSI C63.10 standards, the measurements are performed at the highest, middle, lowest available channels, and the worst case data rate as follows:

802.11b Mode: CCK

802.11g Mode: OFDM

802.11n (HT20) Mode: MCS 0

(2) During the testing procedure, the continuously transmitting with the maximum power mode was programmed by the customer.

(3) The EUT is considered a Mobile unit; in normal use it was positioned on X-plane. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.

1.6 Description of Test Software Setting

During testing channel& Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of RF setting.

Test Software: SecureCRT			
	Test Mode: Continuously transmitting		
Mode	**Data Rate**	**Channel**	**Parameters**
802.11b	CCK/ 1Mbps	01	0
	CCK/ 1Mbps	06	6
	CCK/ 1Mbps	11	6
802.11g	OFDM/ 6Mbps	01	-4
	OFDM/ 6Mbps	06	2
	OFDM/ 6Mbps	11	2
802.11n(HT20)	MCS 0	01	0
	MCS 0	06	0
	MCS 0	11	0

1.7 Measurement Uncertainty

The reported uncertainty of measurement y±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

Test Item	Parameters	Expanded Uncertainty (U_{Lab})
Conducted Emission	Level Accuracy: 9kHz~150kHz 150kHz to 30MHz	±3.50 dB ±3.10 dB
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	±4.60 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	±4.50 dB
Radiated Emission	Level Accuracy: Above 1000MHz	±4.20 dB

1.8 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1/F.,Building 6, Rundongsheng Industrial Zone, Longzhu, Xixiang, Bao'an District, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)
The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

A2LA Certificate No.: 4750.01
The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.FCC Accredited Test Site Number: 854351. Designation Number: CN1223.

IC Registration No.: (11950A)
The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A. CAB identifier: CN0056.