



RF Exposure Evaluation Declaration

Report No.: S20240925789104 Issue Date: 11-21-2024

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2711 Centerville Road - Suite 400, Wilmington, Address: Delaware, United States

FCC ID: 2AKAF-CAM18

Al Recorder II Product:

CAM18 Model No.:

Trade Mark: 1

CFR 47, FCC Part 2.1091 Radio frequency radiation FCC Rule Part(s): exposure evaluation: mobile devices.

Sep. 29, 2024 Item Receipt date:

Test Date: Oct. 08, ~ Oct. 29, 2024

Hang

(Chuang Li) Senior Test Engineer

Approved By

Compiled By

(Line Chen) Engineer Manager

The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in KDB 558074 D01. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of Fangguang Inspection & Testing Co., Ltd. Wuxi Branch

The test report must not be used by the client to claim product certifications, approval, or endorsement by NVLAP, NIST or any agency of U.S. Government.

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Revision History

Report No.	Version	Description	Issue Date
S20240925789104	Rev. 01	1	11-21-2024



1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name:	Al Recorder II					
Model Name:	CAM18					
Trade Mark:	/	,				
Input Voltage Range:	DC: 14V 1A					
Wi-Fi Specification:	802.11b/g/n-HT20/n-HT4	0				
Bluetooth Version:	4.2					
	LTE Band	TX(MHz)	RX(MHz)			
	2	1850~1910	1930~1990			
	4	1710~1755	2110~2155			
LTE Frequency Range:	5	824~849	869~894			
	12	699~716	729~746			
	17	704~716	734~746			
	66	1710~1780	2110~2200			
Software Version:	1.2.01		-			
Hardware Version:	TWN_V5					
Nata.	This information is provided by the Customer and its authenticty is the					
NOTE:	responsibility of the Customer.					



1.2. Product Specification Subjective to this Report

Frequency Range:	802.11b/g/n-HT20: 2412 ~ 2472MHz			
	802.11n-HT40: 2422 ~ 2462MHz			
	BT/BLE:2402~2480MHz			
Channel Number:	802.11b/g/n-HT20: 13			
	802.11n-HT40: 5			
	BT: 79			
	BLE: 40			
Antenna Type:	PCB softboard Antenna			
Antenna Gain:	WLAN&BT: 2.93dBi			
	LTE Band 2 : 3.01dBi			
	LTE Band 4 : 1.59dBi			
	LTE Band 5 : 0.05dBi			
	LTE Band 12 : -3.8dBi			
	LTE Band 17 : -3.8dBi			
	LTE Band 66 : 1.24dBi			
Type of Modulation:	802.11b/g/n: CCK/DBPSK/BPSK/OFDM/QPSK//DQPSK/16QAM/64QAM			
	BT: GFSK, П/4 DQPSK, 8DPSK			
	BLE: GFSK			
	LTE: QPSK, 16QAM			
Data Rate:	802.11b: 1/2/5.5/11Mbps			
	802.11g: 6/9/12/18/24/36/48/54Mbps			
	802.11n: MCS0~MCS7			
	BT: 1Mbps (GFSK), 2Mbps (Π/4 DQPSK), 3Mbps (8DPSK)			
	BLE: 1Mbps			
Note:	/			



2. **RF Exposure Evaluation**

2.1. Limits

According to FCC 1.1310: 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 1.1307(b)

Frequency Range	Electric Field	Magnetic Field	Power Density	y Average Time			
(MHz)	Strength (V/m)	Strength (A/m)	(mW/cm ²)	(Minutes)			
(A) Limits for Occupational/ Control Exposures							
300-1500			f/300	6			
1500-100,000			5	6			
(B) Limits for General Population/ Uncontrolled Exposures							
300-1500			f/1500	6			
1500-100,000			1	30			

f= Frequency in MHz

Calculation Formula: $Pd = (Pout^{*}G)/(4^{*}pi^{*}r^{2})$

Where

 $Pd = power density in mW/cm^2$

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

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

Pd is the limit of MPE, 1mW/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.

MPE

(mW/cm²)

0.0211

0.0020

0.0014

(mW)

105.93

9.82

7.18

(dBm)

20.25

9.92

8.56

MPE

Limits

 (mW/cm^2)

1.00

1.00

1.00



Mode

WIFI

ΒT

BLE

2.2. Test Result of RF Exposure Evaluation

Conducted

OutputPower

(dBm)

17.32

6.99

5.63

Frequency

(MHz)

2412~2462

2402~2480

2402~2480

Product	AI	Al Recorder II				
Test Item	RF	RF Exposure Evaluation				
		Maximum	Antonna	PG		MDE

Antenna

Gain

(dBi)

2.93

2.93

2.93

Mode	Frequency (MHz)	Tune-up	Antenna	P	G	MDE	MPE
		Conducted	Gain	(dBm)	m) (mW)	(mW/cm ²)	Limits
		Power (dBm)	(dBi)				(mW/cm ²)
LTE Band 2	1850~1910	25.0	3.01	28.01	632.41	0.1258	1.00
LTE Band 4	1710~1755	25.0	1.59	26.59	456.04	0.0907	1.00
LTE Band 5	824~849	25.0	0.05	25.05	319.89	0.0636	0.5493
LTE Band 12	699~716	25.0	-3.8	21.2	131.83	0.0262	0.466
LTE Band 17	704~716	25.0	-3.8	21.2	131.83	0.0262	0.4693
LTE Band 66	1710~1780	25.0	1.24	26.24	420.73	0.0837	1.00

Remark: 1. MPE use distance is 20cm from manufacturer declaration of user manual.

Remark: 2.Use the maximum gain of all bands when evaluating.

Remark: 3. The results of LTE Maximum Conducted OutputPower please refer to the LTE module test report (Report No. RSHIA240408005-00B) which was issued by Bay Area Compliance Laboratories Corp.(Kunshan) on 2024.05.30.

Remark: 4. The device only has single WLAN/BT Antenna and single LTE Main Antenna, without LTE Diversity Antenna. WLAN/BT can operate simultaneously with the cellular mode.

CONCULISON:

The Max Power Density at R (20 cm) = 0.1258mW/cm² < 1.00mW/cm².

The Max MPE of simultaneous transmission = 0.1258mW/cm²+0.0211mW/cm²

 $= 0.1469 \text{mW/cm}^2 < 1.00 \text{mW/cm}^2$

So the EUT complies with the requirement.

The End