RF EXPOSURE EVALUATION REPORT

FCC ID	: 2ADWC-AI7688H
Equipment	: 802.11b/g/n IoT Module
Brand Name	: Acsip
Model Name	: AI7688H
Applicant	: AcSiP Technology Corporation 9F, No. 242, Bo'ai St., Shulin Dist, New Taipei 23805, Taiwan
Manufacturer	: Lite-On Technology Corporation 29F, No.555, Siyuan Rd., Xinzhuang Dist., New Taipei City, Taiwan (R.O.C.)
Standard	: 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part2.1091 and it complies with applicable limit.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Laboratory, the test report shall not be reproduced except in full

Approved by: Cona Huang / Deputy Manager

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Table of Contents

1. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT) 4
2. MAXIMUM RF AVERAGE OUTPUT POWER AMONG PRODUCTION UNITS 5
3. RF EXPOSURE LIMIT INTRODUCTION 6
4. RADIO FREQUENCY RADIATION EXPOSURE EVALUATION 7
4.1. Standalone Power Density Calculation 7

History of this test report

Report No.	Version	Description	Issued Date
FA280912	Rev. 01	Initial issue of report	Oct. 18, 2022

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	802.11b/g/n IoT Module
Brand Name	Acsip
Model Name	AI7688H
FCC ID	2ADWC-AI7688H
Wireless Technology and Frequency Range	WLAN 2.4GHz Band: 2400 MHz ~ 2483.5 MHz
Mode	WLAN: 802.11b/g/n HT20/HT40
Host Information	
EUT Type	EV Charger
Brand Name	LITEON
Model Name	IC3-32A-H, IC3-32A-N, SC3-32A-H, SC3-32A-N, IC3-40A-H, IC3-40A-N, SC3-40A-H, SC3-40A-N,
Integrated WWAN Module	Brand Name: Quectel Model Name: EG91-NAXD
Integrated RFID Module 1	Brand Name: Elatec Model Name: TWN4 MultiTech 3M
Integrated RFID Module 2	Brand Name: REYAX Model Name: RYORR2L
Wireless Technology and Frequency Range	WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz RFID : 13.56 MHz
Mode	RMC 12.2Kbps HSDPA HSUPA DC-HSDPA LTE: QPSK, 16QAM RFID:ASK
EUT Stage	Production Unit

Reviewed by: Jason Wang

Report Producer: Daisy Peng

2. Maximum RF average output power among production units

WWAN

Radio Tech	Band Number	Maximum Transmit Power Level (dBm)
		Default
WCDMA	B2	24.00
WCDMA	B4	24.00
WCDMA	B5	24.00
LTE	B2	24.50
LTE	B4	24.50
LTE	B5	24.50
LTE	B12	24.50
LTE	B13	24.50
LTE	B25	25.00
LTE	B26	25.00

WLAN

	Mode	Tune-Up Limit
2.4GHz WLAN	802.11b	20.00
	802.11g	17.00
	802.11n-HT20	17.00
	802.11n-HT40	16.50

3. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

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/f2)	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/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:
S = Power Density
P = Output Power at Antenna Terminals
G = Gain of Transmit Antenna (linear gain)
R = Distance from Transmitting Antenna

4. Radio Frequency Radiation Exposure Evaluation

4.1. Standalone Power Density Calculation

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 20cm (mW/cm^2)	Limit (mW/cm^2)	Power Density / Limit
WCDMA Band 2	2.60	24.00	26.6	0.46	457.09	0.091	1.000	0.091
WCDMA Band 4	2.40	24.00	26.4	0.44	436.52	0.087	1.000	0.087
WCDMA Band 5	2.10	24.00	26.1	0.41	407.38	0.081	0.536	0.151
LTE Band 2	2.60	24.50	27.1	0.51	512.86	0.102	1.000	0.102
LTE Band 4	2.40	24.50	26.9	0.49	489.78	0.097	1.000	0.097
LTE Band 5	2.10	24.50	26.6	0.46	457.09	0.091	0.549	0.166
LTE Band 12	1.20	24.50	25.7	0.37	371.54	0.074	0.466	0.159
LTE Band 13	1.40	24.50	25.9	0.39	389.05	0.077	0.518	0.149
LTE Band 25	2.60	25.00	27.6	0.58	575.44	0.115	1.000	0.115
LTE Band 26	2.10	25.00	27.1	0.51	512.86	0.102	0.543	0.188
WLAN2.4GHz Band	2.00	20.00	22.0	0.16	158.49	0.032	1.000	0.032

WWAN Power Density / Limit	WLAN Power Density / Limit	∑(Power Density / Limit) of WWAN+WLAN
0.188	0.032	0.22

Note:

1. ∑(Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + WLAN
2. Considering the WWAN collocation with the WLAN transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 2 collocated transmitters is compliant

Conclusion:

According to 47 CFR §1.1307, the RF exposure analysis concludes that the RF Exposure is FCC compliant.