

RF EXPOSURE EVALUATION REPORT

FCC ID : ZAT-1312PSIP-3
Equipment : CC1312PSIP
Brand Name : Texas Instruments
Model Name : CC1312PSIPMOT3
Applicant : Texas Instruments Incorporated
12500 TI BLVD., Dallas, Texas, 75243
Manufacturer : Texas Instruments Incorporated
12500 TI BLVD., Dallas, Texas, 75243
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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History of this test report

Report No.	Version	Description	Issued Date
FA341305-02	Rev. 01	Initial issue of report	Feb. 7, 2024
FA341305-02	Rev. 02	Updtae FCC ID	May 06, 2024



1. Description of Equipment Under Test (EUT)

Table with 2 columns: Feature Name and Specification. Rows include EUT Type, Brand Name, Model Name, FCC ID, Wireless Technology and Frequency Range, and Mode.

Reviewed by: Jason Wang

Report Producer: Daisy Peng

Table with 5 columns: Index, Brand, Antenna Type, Model, and 915MHz Gain. Lists various antenna models and their gain values.

2. Maximum RF average output power among production units

Table with 2 columns: Mode and Maximum Average power(dBm). Lists power levels for MIOTY, WB-DSSS, TI 15.4, Wi-SUN, and PowerG PHY.

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/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

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)
MIOTY	2.69	19.50	22.2	0.17	165.58	0.033	0.601
WB-DSSS	2.69	15.00	17.7	0.06	58.75	0.012	0.601
TI 15.4	2.69	19.00	21.7	0.15	147.57	0.029	0.601
Wi-SUN	2.69	19.00	21.7	0.15	147.57	0.029	0.601
PowerG PHY	2.69	20.00	22.7	0.19	185.78	0.037	0.601

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.