
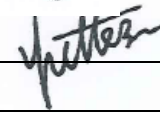


RF Exposure Evaluation Report

Report Reference No.	MTEB23110133 -H	
FCC ID	2AD6G-PN81	
Compiled by (position+printed name+signature)...	File administrators Alisa Luo	
Supervised by (position+printed name+signature)...	Test Engineer Sunny Deng	
Approved by (position+printed name+signature)...	Manager Yvette Zhou	
Date of issue.....	Nov.14,2023	
Representative Laboratory Name ..:	Shenzhen Most Technology Service Co., Ltd.	
Address	No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China.	
Applicant's name	Rongta Technology (Xiamen) Group Co., Ltd.	
Address	No.88, Tonghui South Road, Tongan, Xiamen,China.	
Test specification/ Standard	47 CFR Part 1.1307;47 CFR Part 1.1310 KDB447498D01 General RF Exposure Guidance v06	
TRF Originator.....	Shenzhen Most Technology Service Co., Ltd.	
Shenzhen Most Technology Service Co., Ltd. All rights reserved.		
This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen Most Technology Service Co., Ltd. is acknowledged as copyright owner and source of the material. Shenzhen Most Technology Service Co., Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.		
Test item description	A4 Portable Printer	
Trade Mark	N/A	
Model/Type reference.....	PN81	
Listed Models	PN81A,PN81B,PN81C,PN81D,PN81N,PN82,PN82A,PN82N, PN83,PN83N,PN84,PN84N,PN85,PN85N,PN86,PN86N,PN87, PN88,PN89	
Modulation Type	GFSK GFSK, $\pi/4$ DQPSK, 8DPSK	
Operation Frequency.....	2402MHz to 2480MHz	
Hardware Version.....	PN81_HC_BU_V1.0_230922	
Software Version	PN81_BU_HC32F460_300DPI_RT_V1.04_231101.bin	
Rating	DC 11.1V by Battery DC 5V by USB Port	
Result.....	PASS	

TEST REPORT

Equipment under Test : A4 Portable Printer

Model /Type : PN81

Listed Models : PN81A,PN81B,PN81C,PN81D,PN81N,PN82,PN82A,PN82N,
PN83,PN83N,PN84,PN84N,PN85,PN85N,PN86,PN86N,PN87,
PN88,PN89

Remark : Only the name of the product, the name of the model and the color of the appearance are different between the models, other are the same, the differences do not affect the safety and Electromagnetic compatibility of the product.

Applicant : Rongta Technology (Xiamen) Group Co., Ltd.

Address : No.88, Tonghui South Road, Tongan, Xiamen,China.

Manufacturer : Rongta Technology (Xiamen) Group Co., Ltd.

Address : No.88, Tonghui South Road, Tongan, Xiamen,China.

Test Result:	PASS
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The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

1. Revision History

Revision	Issue Date	Revisions	Revised By
00	2023.11.14	Initial Issue	Alisa Luo

2. SAR Evaluation

2.1 RF Exposure Compliance Requirement

2.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

2.1.2 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.

2.1.3 EUT RF Exposure

WIFI and BT do not support simultaneous transmission.

Antenna Gain: 1.91dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.4 in linear scale. Output Power Into Antenna & RF Exposure Evaluation Distance:

BLE

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	7.860	7.860 ± 1	8.86
Middle(2440MHz)	6.917	6.917 ± 1	7.917
Highest(2480MHz)	5.112	5.112 ± 1	6.112

BLE

Worst case: GFSK						
Channel	Maximum tune-up Power (dBm)	Maximum tune-up Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
Lowest(2402MHz)	8.86	7.69	-0.58	0.0013	1.0	Pass

Note: 1) Refer to report MTEB23090179-R for EUT test Max Conducted average Output Power value.

Note: 2) $P_d = (P_{out} * G) / (4 * \pi * R^2) = (7.69 * 0.87) / (4 * 3.1416 * 20^2) = 0.0013$

BT classic

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	7.575	7.575 ± 1	8.575
Middle(2441MHz)	6.545	6.545 ± 1	7.545
Highest(2480MHz)	4.357	4.357 ± 1	5.357

π /4DQPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	7.565	7.565 ± 1	8.565
Middle(2441MHz)	6.537	6.537 ± 1	7.537
Highest(2480MHz)	4.436	4.436 ± 1	5.436

8DPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	7.641	7.641 ± 1	8.641
Middle(2441MHz)	6.370	6.370 ± 1	7.37
Highest(2480MHz)	4.408	4.408 ± 1	5.408

Worst case: 8DPSK						
Channel	Maximum tune-up Power (dBm)	Maximum tune-up Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
Lowest(2402MHz)	8.641	7.31	-0.58	0.0013	1.0	Pass

Note: 1) Refer to report MTEB23090179-R1 for EUT test Max Conducted average Output Power value.

Note: 2) $P_d = (P_{out} * G) / (4 * \pi * R^2) = (7.31 * 0.87) / (4 * 3.1416 * 20^2) = 0.0013$

Note: 3) EUT's Bluetooth module is more than 20cm away from the human body.

.....**THE END OF REPORT**.....