

RF EXPOSURE Test Report

Report No. : MTi260206010-0202E4
Date of issue : 2026-05-18
Applicant : Zhuhai Quin Technology Co., Ltd.
Product : Label Printer
Model(s) : D421R
Series model : Please refer to the Series model remark
FCC ID : 2ASRB-D421R

Shenzhen Microtest Co., Ltd.

Series model Remark:

D423BT, D425BT, D426BT, D427BT, D428BT, D429BT, D423D, D425D, D426D, D427D, D428D, D429D, D420Air, D423Air, D425Air, D426Air, D427Air, D428Air, D429Air, A641M, A64M, A642M, A643M, A645M, A646M, A647M, A649M, A64MD, A641MD, A642MD, A643MD, A645MD, A646MD, A647MD, A649MD, A64Plus, A641Plus, A642Plus, A643Plus, A645Plus, A646Plus, A647Plus, A648Plus, A649Plus, A64Pro, A641Pro, A642Pro, A643Pro, A645Pro, A646Pro, A647Pro, A648Pro, A649Pro, D422S, D6, D6 Pro, D423 Pro, D425 Pro, D426 Pro, D427 Pro, D428 Pro, D429 Pro, D423H, D425H, D426H, D427H, D428H, D429H, D423H Pro, D425H Pro, D426H Pro, D427H Pro, D428H Pro, D429H Pro, D423D Pro, D425D Pro, D426D Pro, D427D Pro, D428D Pro, D429D Pro, D423R, D425R, D426R, D427R, D428R, D429R, D421R Pro, D421 Pro, D421BT, D421D, D421Air, D421H, D421WF, D423WF, D425WF, D426WF, D427W, D428WF, D429WF, PM-241H, D450 Pro, D450H

Table of contents

1	RF EXPOSURE EVALUATION	5
2	Measurement Result	6

Test Result Certification		
Applicant	Zhuhai Quin Technology Co., Ltd.	
Applicant Address	1ST FLOOR, BUILDING 1, NO. 456 CHUANGYUAN ROAD, XIANGZHOU DISTRICT, ZHUHAI CITY	
Manufacturer	Zhuhai Quin Technology Co., Ltd.	
Manufacturer Address	1ST FLOOR, BUILDING 1, NO. 456 CHUANGYUAN ROAD, XIANGZHOU DISTRICT, ZHUHAI CITY	
Product description		
Product name	Label Printer	
Trademark	N/A	
Model name	D421R	
Series Model(s)	Please refer to the Series model remark	
Standards	47 CFR Part 2.1091	
Test method	KDB 447498 D01 v06	
Testing Information		
Date of test	2026-03-06 to 2026-05-15	
Test Result	Pass	
Prepared by:	Letter Lan	<i>Letter. Lan.</i>
Reviewed by:	David Lee	<i>David. Lee</i>
Approved by:	Lewis Lian	<i>Lewis Lian</i>

1 RF EXPOSURE EVALUATION

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)

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 Exposure				
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
300-1,500			f/300	6
1,500-100,000			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
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

MPE Calculation Method

Friis transmission formula: $P_d = (P_{out} \cdot G) \cdot (4 \cdot \pi \cdot R^2)$

Where

P_d = Power density in mW/cm²

P_{out} = output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

π = 3.1415926

R = distance between observation point and center of the radiator in cm(20cm)

P_d the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

2 Measurement Result

BT&BLE:

Operation Frequency: 2402-2480MHz,

Power density limited: 1mW/ cm²

Antenna Type: PCB Antenna

Antenna gain: -0.58dBi

R=20cm

$mW=10^{(dBm/10)}$

Antenna gain Numeric= $10^{(dBi/10)}=10^{(-0.58/10)}=0.87$

BT:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density Limits
		(dBm)		tune-up power		Gain			
				(dBm)	(dBm)	(mW)	(dBi)	Numeric	(mW/cm ²)
2402	GFSK	-0.19	0±1	1	1.259	-0.58	0.87	0.0002	1
2441		-0.04	0±1	1	1.259	-0.58	0.87	0.0002	1
2480		1.00	1±1	2	1.585	-0.58	0.87	0.0003	1
2402	π/4-DQPSK	0.63	0±1	1	1.259	-0.58	0.87	0.0002	1
2441		0.77	0±1	1	1.259	-0.58	0.87	0.0002	1
2480		1.80	1±1	2	1.585	-0.58	0.87	0.0003	1

BLE:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density Limits
		(dBm)		tune-up power		Gain		(mW/cm ²)	(mW/cm ²)
				(dBm)	(mW)	(dBi)	Numeric		
2402	GFSK-1M	-0.21	0±1	1	1.259	-0.58	0.87	0.0002	1
2440		0.30	0±1	1	1.259	-0.58	0.87	0.0002	1
2480		0.92	0±1	1	1.259	-0.58	0.87	0.0002	1
2402	GFSK-2M	-0.18	0±1	1	1.259	-0.58	0.87	0.0002	1
2440		0.41	0±1	1	1.259	-0.58	0.87	0.0002	1
2480		0.93	0±1	1	1.259	-0.58	0.87	0.0002	1

RF ID:

9.5 Equations to calculate EIRP

Calculate the EIRP from the radiated field strength in the far field using Equation (22):

$$EIRP = E_{Meas} + 20 \log(d_{Meas}) - 104.7 \quad (22)$$

where

$EIRP$ is the equivalent isotropically radiated power, in dBm
 E_{Meas} is the field strength of the emission at the measurement distance, in dBμV/m
 d_{Meas} is the measurement distance, in m

NOTE—Because this equation yields the identical result whether the field strength is extrapolated using the default 20 dB/decade of distance extrapolation factor, or the field strength is not extrapolated for distance, this equation can generally be applied directly (with no further correction) to determine EIRP. In some cases, a different distance correction factor may be required; see 9.1.

Transmit Frequency (MHz)	Mode	H-field Level@3m (dBuV/m)	Exempted power Result (V/m)	Exempted power limit((V/m)
13.56	ASK	44.82	0.0019	60.76

Conclusion:

Band	Mode	Result calculation	1g SAR test exclusion threshold	Fraction of limit (%)
2402~2480MHz	BLE	0.0002	1	0.020%
2402~2480MHz	BR&EDR	0.0003	1	0.030%
Band	Mode	Exempted power Result (V/m)	Exempted power limit((V/m)	Fraction of limit (%)
13.56MHz	NFC	0.0019	60.76	0.003%
Sum of Fraction (%)			0.033%	

For the max result: 0.033%<100% for 1g SAR test exclusion threshold, No SAR is required.

Statement

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***** END OF REPORT *****