

SAR Exemption Evaluation

Applicant	Dspread Technology (Beijing) Inc.
FCC ID	2AGQ6-MINIIN
Product	mPOS
Brand	Dspread
Model	QPOS mini
Report No.	R2306A0680-S1
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1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA Technology (Shanghai) Co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein .Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2 Test Facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.

Address: Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China

City: Shanghai

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1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards.	
Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

2 Description of Equipment Under Test

Client Information

Applicant	Dspread Technology (Beijing) Inc.
Applicant address	Rm.407, B12C, #10(Universal Business Park), Jiuxianqiao Road, Chaoyang District, Beijing, China
Manufacturer	Dspread Technology (Beijing) Inc.
Manufacturer address	Rm.407, B12C, #10(Universal Business Park), Jiuxianqiao Road, Chaoyang District, Beijing, China

General Technologies

EUT Stage	Identical Prototype
Model	QPOS mini
SN	0276001202303230027
Hardware Version	2.3.1
Software Version	1.3.6
Antenna Type	Internal Antenna
Date of Testing	June 19, 2023 ~ June 21, 2023
Date of Sample Received	June 13, 2023
Note: The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.	

Wireless Technology and Frequency Range

Wireless Technology		Modulation	Operating Mode	Tx (MHz)
Bluetooth	2.4G	Version 4.1 BR + LE		2402 ~2480
NFC	13.56MHz			

3 Test Specification, Methods and Procedures

Reference Standards

KDB 447498 D01 General RF Exposure Guidance v06

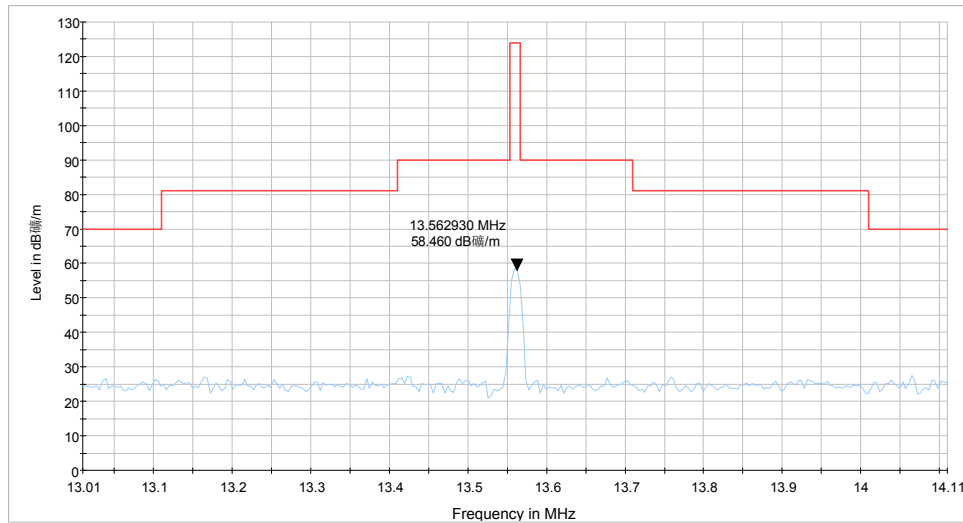
4 Output Power

Bluetooth	Conducted Power(dBm)		
	Channel/Frequency(MHz)		
	Ch 0/2402 MHz	Ch 39/2441 MHz	Ch 78/2480 MHz
GFSK	-4.22	-4.64	-4.39
Bluetooth LE	Ch 0/2402 MHz	Ch 19/2440 MHz	Ch 39/2480 MHz
GFSK(1M)	-5.92	-6.02	-5.74

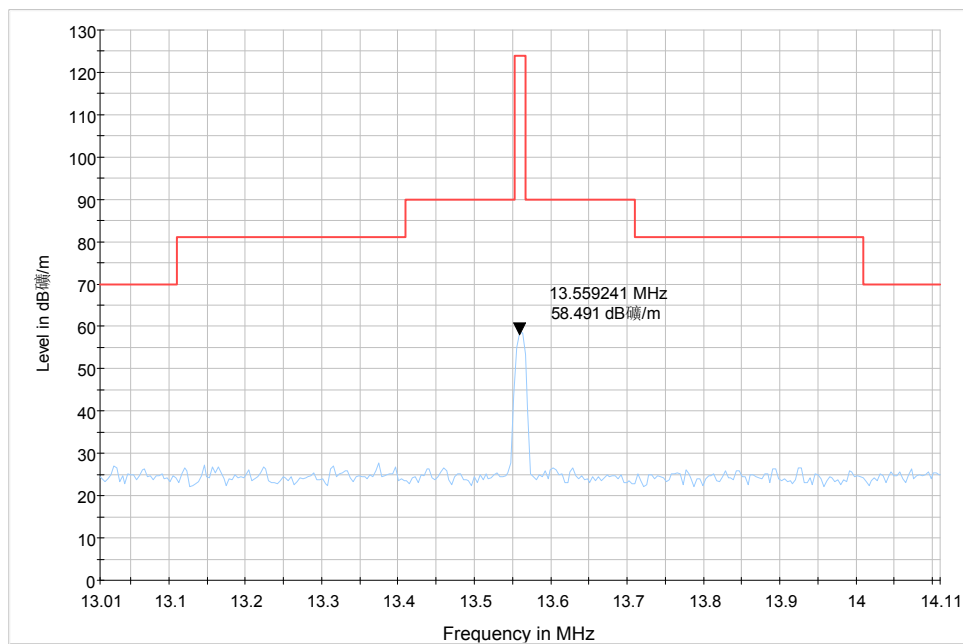
NFC

A symbol (dB μ V/m) in the test plot below means (dB μ V/m)

NFC-A



NFC-B



Note: Test data comes from RF report and please refer to the RF report for testing related information.

Carrier Frequency (MHz)		Max.E-field strength (dB μ V/m)
NFC-A	13.563	58.460
NFC-B	13.559	58.491

NFC-A

The worst-case peak radiated emission for the EUT is 58.460 dBμV/m in the frequency 13.560MHz according to RF Report.

$$\text{EIRP[dBm]} = \text{E[dB}\mu\text{V/m]} - 95.2 = -36.740 \text{ dBm}$$

$$\text{Gain} = 0 \text{ dBi}$$

So

$$\text{Maximum Output Power} = \text{EIRP} - \text{Gain} = -36.740 \text{ dBm}$$

NFC-B

The worst-case peak radiated emission for the EUT is 58.491 dBμV/m in the frequency 13.560MHz according to RF Report.

$$\text{EIRP[dBm]} = \text{E[dB}\mu\text{V/m]} - 95.2 = -36.709 \text{ dBm}$$

$$\text{Gain} = 0 \text{ dBi}$$

So

$$\text{Maximum Output Power} = \text{EIRP} - \text{Gain} = -36.709 \text{ dBm}$$

5 Standalone SAR Test Exclusion Considerations

Bluetooth

Per KDB 447498 D01, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

Per KDB 447498 D01, when the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Band	Configuration	Frequency (MHz)	Distance (mm)	MAX Power (dBm)	Ratio	SAR test exclusion thresholds	Evaluation
Bluetooth	Body-worn	2480	15	-4.22	0.04	3	No
	Extremity SAR	2480	5	-4.22	0.12	7.5	No
Bluetooth LE	Body-worn	2480	15	-5.74	0.03	3	No
	Extremity SAR	2480	5	-5.74	0.08	7.5	No

NFC

Per KDB 447498 D01, the 1-g SAR test exclusion thresholds for frequencies below 100 MHz and test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \cdot 0.5 \leq 3.0$ for 1-g SAR and ≤ 7.5 for product specific 10-g SAR

where

- The test separation distance at 5mm
- The test frequency at 13.563(NFC-A) and 13.559(NFC-B)MHz

Per KDB 447498 D01, when the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Frequency (MHz)	Distance (mm)	MAX Power (dBm)	Ratio	Evaluation
13.563	5	-36.740	0.000005	No
13.559	5	-36.709	0.000005	No

Note: Based on SAR test exclusion, all values meet the SAR test exclusion thresholds and are exempt from routine RF exposure evaluation.

ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

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