



Shenzhen Global Test Service Co.,Ltd.

No.7-101 and 8A-104, Building 7 and 8, DCC Cultural and Creative Garden, No.98, Pingxin North Road, Shangmugu Community, Pinghu Street, Longgang District, Shenzhen, Guangdong

RF Exposure evaluation

Report Reference No...... : **GTS20220424022-1-7**

FCC ID..... : **2A8A5-MB701**

Compiled by
(position+printed name+signature)...: File administrators Peter Xiao

Supervised by
(position+printed name+signature)...: Test Engineer Jenny Zeng



Approved by
(position+printed name+signature)...: Manager Simon Hu

Date of issue: Aug.11, 2022

Representative Laboratory Name : **Shenzhen Global Test Service Co.,Ltd.**

Address.....: No.7-101 and 8A-104, Building 7 and 8, DCC Cultural and Creative Garden, No.98, Pingxin North Road, Shangmugu Community, Pinghu Street, Longgang District, Shenzhen, Guangdong,China

Applicant's name: **Shenzhen Minbay Technoloy Co.,Ltd**

Address.....: 1511 Zhongan Building, Plaza Road, Longgang District, Shenzhen City, China.

Test specification :

Standard: **47CFR §1.1310**
47CFR §2.1093
KDB 447498 D04 Interim General RF Exposure Guidance v01

TRF Originator.....: Shenzhen Global Test Service Co.,Ltd.

Master TRF.....: Dated 2014-12

Shenzhen Global Test 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 Global Test Service Co.,Ltd. is acknowledged as copyright owner and source of the material. Shenzhen Global Test 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 : **Pixel Artboard**

Trade Mark: minbay

Manufacturer.....: Shenzhen Minbay Technoloy Co.,Ltd

Model/Type reference.....: MB701

Listed Models: N/A

Exposure category.....: General population/uncontrolled environment

EUT Type.....: Portable

Hardware Version: N/A

Software Version: N/A

Rating: DC 3.7V by Battery
Recharged by DC 5.0V

Result.....: **PASS**

TEST REPORT

Test Report No. :	GTS20220424022-1-7	Aug.11, 2022 Date of issue
--------------------------	---------------------------	-------------------------------

Equipment under Test : Pixel Artboard

Model /Type : MB701

Listed model : N/A

Applicant : **Shenzhen Minbay Technoloy Co.,Ltd**

Address : 1511 Zhongan Building, Plaza Road, Longgang District, Shenzhen City, China.

Manufacturer : **Shenzhen Minbay Technoloy Co.,Ltd**

Address : 1511 Zhongan Building, Plaza Road, Longgang District, Shenzhen City, China.

Test Result:	PASS
---------------------	-------------

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.

Contents

1. SUMMARY	4
1.1. EUT configuration	4
1.2. Product Description	4
2. TEST ENVIRONMENT	5
2.1. Address of the test laboratory	5
2.2. Test Facility	5
2.3. Environmental conditions	5
2.4. Statement of the measurement uncertainty	5
3. METHOD OF MEASUREMENT	6
3.1. Applicable Standard	6
3.2. Evaluation Method and Limit	6
4. CONDUCTED POWER RESULTS	7
5. MANUFACTURING TOLERANCE	8
6. EVALUATION RESULTS	9
6.1. Standalone Evaluation	9
7. CONCLUSION	10

1. SUMMARY

1.1. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

● - supplied by the manufacturer

○ - supplied by the lab

<input type="radio"/>	Adapter	Length (m) :	0.4m
		Shield :	Non-Shielded
		Detachable :	Non- Detachable

1.2. Product Description

Product Name	Pixel Artboard
Trade Mark	minbay
Model/Type reference	MB701
List Models	N/A
Model Declaration	N/A
Power supply:	DC 3.7V by Battery Recharged by DC 5.0V
Sample ID	GTS20220424022-1-S0001-1# & GTS20220424022-1-S0001-2#
Bluetooth	
Operation frequency	2402-2480MHz
Channel Number	40 channels for Bluetooth (DTS)
Channel Spacing	2MHz for Bluetooth (DTS)
Modulation Type	GFSK for Bluetooth (DTS)
Antenna Description	PCB Antenna, 0.74dBi(Max.) for 2.4G Band

2. TEST ENVIRONMENT

2.1. Address of the test laboratory

Shenzhen Global Test Service Co.,Ltd.

No.7-101 and 8A-104, Building 7 and 8, DCC Cultural and Creative Garden, No.98, Pingxin North Road, Shangmugu Community, Pinghu Street, Longgang District, Shenzhen, Guangdong,China

2.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS (No. CNAS L8169)

Shenzhen Global Test Service Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2019 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA (Certificate No. 4758.01)

Shenzhen Global Test Service Co., Ltd. has been assessed by the American Association for Laboratory Accreditation (A2LA). Certificate No. 4758.01.

Industry Canada Registration Number. is 24189.

FCC Designation Number is CN1234.

FCC Registered Test Site Number is165725.

2.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

2.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01” Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1” and TR-100028-02 “Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 “ and is documented in the Shenzhen Global Test Service Co.,Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen GTS laboratory is reported:

Test Items	Measurement Uncertainty	Notes
Transmitter power conducted	0.57 dB	(1)

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3. Method of measurement

3.1. Applicable Standard

[ANSI C95.1–1999](#): IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

[KDB 447498 D04 Interim General RF Exposure Guidance v01](#): Mobile and Portable Device, RF Exposure, Equipment Authorization Procedures

[FCC CFR 47 part1 1.1310](#): Radiofrequency radiation exposure limits.

[FCC CFR 47 part2 2.1093](#): Radiofrequency radiation exposure evaluation: portable devices

3.2. Evaluation Method and Limit

FCC: According to 447498 D04 Interim General RF Exposure Guidance v01.

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula (B.2).

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}}(d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}}\sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and ERP_{20cm} is per Formula (B.1).

The example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)										
	5	10	15	20	25	30	35	40	45	50	
300	39	65	88	110	129	148	166	184	201	217	
450	22	44	67	89	112	135	158	180	203	226	
835	9	25	44	66	90	116	145	175	207	240	
1900	3	12	26	44	66	92	122	157	195	236	
2450	3	10	22	38	59	83	111	143	179	219	
3600	2	8	18	32	49	71	96	125	158	195	
5800	1	6	14	25	40	58	80	106	136	169	

4. Conducted Power Results

Bluetooth(BT)

Mode	Channel	Frequency (MHz)	Peak Conducted Output Power (dBm)
GFSK(BLE)	00	2402	3.02
	19	2440	3.06
	39	2480	3.26

5. Manufacturing Tolerance

Bluetooth(BT)

GFSK BLE(Peak)			
Channel	Channel 00	Channel 19	Channel 39
Target (dBm)	3.0	3.0	3.0
Tolerance \pm (dB)	1.0	1.0	1.0

6. Evaluation Results

6.1. Standalone Evaluation

Bluetooth(BT)

Band/Mode	f (GHz)	Antenna Distance (mm)	RF output power		Limit Pth(mW)	SAR Test Exclusion
			dBm	mW		
GFSK(BLE)	2.480	5	4.00	2.51	3.00	Yes

Remark:

1. Output power including tune up tolerance;
2. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to f) in section 4.1 of KDB447498 D04 Interim General RF Exposure Guidance v01 is applied to determine SAR test exclusion.

7. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB447498 D04 Interim General RF Exposure Guidance v01, No SAR is required.

.....End of Report.....