REPORT No.：SZ18010063S02

RF EXPOSURE EVALUATION REPORT

APPLICANT	:	Shenzhen Chainway Information Technology Co.,Ltd.
PRODUCT NAME	:	Mobile Data Terminal
MODEL NAME	:	C72
BRAND NAME	:	CHAINWAY
FCC ID	:	2AC6AC72
STANDARD(S)	:	47CFR 2.1093 KDB 447498
ISSUE DATE	:	2018-04-28

Tested by: Gan Yueming

Gan Yueming (Test engineer)

Approved by: Peng Huarui

Peng Huarui (Supervisor)

MORLAB

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DIRECTORY

Change History		
Issue	**Date**	**Reason for change**
1.0	2018-04-28	First edition

1. Technical Information

Note: Provide by manufacturer.

1.1 Applicant and Manufacturer Information

Applicant:	Shenzhen Chainway Information Technology Co.,Ltd.
Applicant Address:	9/F, Building 2, Daqian Industrial Park, Longchang Rd., District 67, Bao'an, Shenzhen
Manufacturer:	Shenzhen Chainway Information Technology Co.,Ltd.
Manufacturer Address:	9/F, Building 2, Daqian Industrial Park, Longchang Rd., District 67, Bao'an, Shenzhen

1.2 Equipment Under Test (EUT) Description

EUT Type:	C72
Hardware Version:	C70SE_MB_V11
Software Version:	C72A_MT6735_V1.1_AM_GIT938ee72_20171205
Frequency Bands:	RFID:902 MHz ~928 MHz Bluetooth: 2402 MHz ~ 2462 MHz
Modulation Mode:	RFID Bluetooth BR+EDR, Bluetooth 4.0LE
Antenna type:	N/A

1.3 Photographs of the EUT

1. EUT front view

2. EUT rear view

1.4 Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	47 CFR§2.1093	Radio frequency Radiation Exposure Evaluation: portable devices
2	KDB 447498 D01v06	General RF Exposure Guidance

2. RF Exposure Limit

Per user manual, this device is a RFID transmitter. Based on 47CFR 2.1093, this device belongs to portable device category with General Population/Uncontrolled exposure.

Portable Devices:

47CFR 2.1093(b)

For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.

GENERAL POPULATION / UNCONTROLLED EXPOSURE

47CFR 2.1093(d) (2)

Limits for General Population/Uncontrolled exposure: 0.08 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 1.6 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 4 W/kg, as averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). General Population/Uncontrolled limits apply when the general public may be exposed, or when persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or do not exercise control over their exposure. Warning labels placed on consumer devices such as cellular telephones will not be sufficient reason to allow these devices to be evaluated subject to limits for occupational/controlled exposure in paragraph (d)(1) of this section.

3. Measurement Of conducted Output Power

1. Bluetooth output power

Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
BR / EDR	CH 00	2402	3.87	3.14	3.25
	CH 39	2441	5.94	4.94	5.01
	CH 78	2480	5.01	5.04	4.15
Tune-Up Limit (dBm)			6.5	5.5	5.5

Mode	Channel	Frequency (MHz)	Peak power (dBm)
			GFSK
LE	CH 00	2402	-3.16
	CH 19	2440	-3.21
	CH 39	2480	-3.98

2. RFIDR output power

Frequency (MHz)	Output Power	Tune-Up Limit	Power level
	(dBm)	(dBm)	(dBm)
902.75	28.82	29.0	30
915.25	28.17	29.0	30
927.25	27.39	29.0	30

4. RF Exposure Evaluation

Standalone transmission SAR evaluation:

According to KDB 447498 section 4.3.1, the 1-g SAR test exclusion thresholds at test separation Distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)] ≤ 3.0

1) For Bluetooth, The maximum tune-up limit power is **4.47mW** @ **2.441GHz**
   And use **5mm** as the most conservative minimum test separation distance,
   [(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)] **=1.25**≤ 3.0
2) For RFID, The maximum tune-up limit power is **794.33mW** @ **0.903GHz**
   And use **10mm** as the most conservative minimum test separation distance,
   [(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)] **=75.45**>3.0

Therefore, SAR measurement is not required for Bluetooth and the RFID SAR evaluation is necessary and it is recorded in SAR report SZ18010063S01.

Annex A General Information

1. Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Department:	Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Responsible Test Lab Manager:	Mr. Su Feng
Telephone:	+86 755 36698555
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2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

END OF REPORT