



REPORT No.: SZ22080047S01

TEST REPORT

APPLICANT : Y Soft Corporation, a.s.
PRODUCT NAME : USB Card Reader
MODEL NAME : MUS3078
BRAND NAME : YSoft Ultimate reader
FCC ID : XUY0YX0MUS3078
STANDARD(S) : FCC 47CFR Part 2(2.1091)
RECEIPT DATE : 2022-08-04
TEST DATE : 2022-09-02
ISSUE DATE : 2022-09-09

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MORLAB

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Change History		
Version	Date	Reason for change
1.0	2022-09-09	First edition

1. MPE Results Summary

Operation Frequency	MPE Summary	
	E-field(V/m)	H-field(A/m)
125KHz	23.08	0.852
132KHz	24.06	0.417
134.2KHz	22.96	0.532

2. Technical Information

Note: Provide by applicant.

2.1. Applicant and Manufacturer Information

Applicant:	Y Soft Corporation, a.s.
Applicant Address:	Technická 2948/13, 61600, Brno, Czech Republic
Manufacturer:	Y Soft Corporation, a.s.
Manufacturer Address:	Technická 2948/13, 61600, Brno, Czech Republic

2.2. Equipment under Test (EUT) Description

Product Name:	USB Card Reader
EUT No.:	5#
Hardware Version:	N/A
Software Version:	N/A
Frequency Bands:	Bluetooth: 2402 MHz ~ 2480 MHz 125KHz, 132KHz, 134.2KHz NFC: 13.56MHz
Modulation Mode:	Bluetooth LE: GFSK(1Mbps) 125KHz/132KHz/134.2KHz: AM NFC: AM
Antenna Type:	Bluetooth: Chip antenna 125KHz/132KHz/134.2KHz: Coil antenna NFC: Coil antenna
Antenna Gain:	Bluetooth: -3.5 dBi

**Note:**

When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% Confidence intervals.

2.3. Photographs of the EUT

Please refer to the External Photos for the Photos of the EUT

2.4. Applied Reference Documents

Leading reference documents for testing:

Identity	Document Title	Method determination /Remark
FCC 47 CFR Part 2(2.1091)	Radio Frequency Radiation Exposure Evaluation: mobile devices	No deviation
KDB 447498 D01v06	General RF Exposure Guidance	No deviation
Note 1: The test item is not applicable. Note 2: Additions to, deviation, or exclusions from the method shall be judged in the "method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.		

3. RF Exposure Limits

Per user manual, Based on 47CFR 2.1091, this device belongs to mobile device category with General Population/Uncontrolled exposure.

Mobile Devices: 47CFR 2.1091(b)

For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. In this context, the term "fixed location" means that the device is physically secured at one location and is not able to be easily moved to another location. Transmitting devices designed to be used by consumers or workers that can be easily re-located, such as wireless devices associated with a personal computer, are considered to be mobile devices if they meet the 20 centimeter separation requirement.

General Population/Uncontrolled Exposure:

The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity. Warning labels placed on low-power consumer devices such as cellular telephones are not considered sufficient to allow the device to be considered under the occupational/controlled category, and the general population/uncontrolled exposure limits apply to these devices

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)
(B) Limits for General Population/Uncontrolled Exposure				
0.1–1.34	614	1.63	*(100)	30
1.34-30	824/f _M	2.19/f _M	*(180/f _M ²)	30
30-300	27.5	0.073	0.2	30

Note:

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

4. MPE Requirement

4.1. General Information

For devices designed for typical desktop applications, RF exposure evaluation should be conducted assuming a user separation distance of 0 cm. E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from Surface of the primary/client pair, with the 0 cm measured from the center of the probe(s) to the edge of the device.

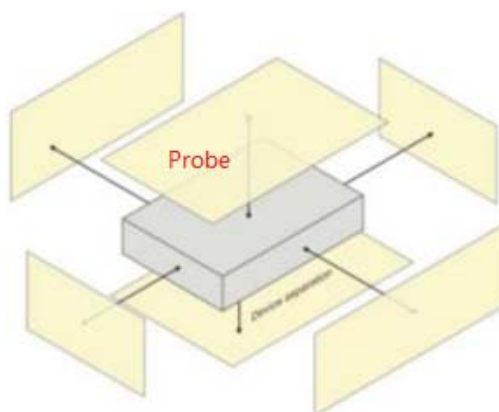
4.2. Measurement Uncertainty (95% confidence levels, k=2)

Test Item	Uncertainty
Uncertainty for Radiated Frequency	7×10^8
Uncertainty for test site temperature and humidity	0.6 °C
	3%

4.3. Test Information

The EUT working at normal charging mode, use the E-Probe measure the H-field Strength, E-field Strength separately.

4.4. Test Setup





5. RF Output Power

<Bluetooth>

Mode	Channel	Frequency (MHz)	Average power (dBm)
			GFSK
LE	CH 00	2402	0.37
	CH 19	2440	0.15
	CH 39	2480	0.26
Tune-up Limit			1.00

Note:

The output power of Bluetooth is derived from the report SZ22080047W01.

6. Assess Results

6.1. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial No./ SW Version	Calibration	
				Last Cal.	Due Date
STT	Broadband Field meter	SEM-600	D-1044	2021.11.15	2024.11.14
STT	Probe	LF-04	I-1044	2021.11.15	2024.11.14
STT	Probe holder	TR-01	N/A	N/A	N/A
STT	Optical fiber line	L=5M	N/A	N/A	N/A

6.2. Test Results

EUT: USB Card Reader	Test Date: 2022.09.02
Temperature: 18~25 °C	Humidity: 20~60%

➤ E-field Strength Result

E-field Strength Result (Test frequency 125KHz)					
Test Loading	Exposure Position	Distance (mm)	E-Field (V/m)	Limit (V/m)	Verdict
125Kbps	Front Side	10	23.08	614	PASS
	Back Side	10	1.68	614	PASS
	Left Side	10	1.81	614	PASS
	Right Side	10	2.01	614	PASS
	Top Side	10	3.00	614	PASS
	Bottom Side	10	5.73	614	PASS

E-field Strength Result (Test frequency 132KHz)					
Test Loading	Exposure Position	Distance (mm)	E-Field (V/m)	Limit (V/m)	Verdict
132Kbps	Front Side	10	24.06	614	PASS
	Back Side	10	1.71	614	PASS
	Left Side	10	1.79	614	PASS
	Right Side	10	2.04	614	PASS
	Top Side	10	2.98	614	PASS
	Bottom Side	10	4.43	614	PASS

E-field Strength Result (Test frequency 134.2KHz)					
Test Loading	Exposure Position	Distance (mm)	E-Field (V/m)	Limit (V/m)	Verdict
134.2Kbps	Front Side	10	22.96	614	PASS
	Back Side	10	1.65	614	PASS
	Left Side	10	1.83	614	PASS
	Right Side	10	2.06	614	PASS
	Top Side	10	3.04	614	PASS
	Bottom Side	10	3.82	614	PASS

➤ **H-field Strength Result**

H-field Strength Result (Test frequency 125KHz)					
Test Loading	Exposure Position	Distance (mm)	H-Field (A/m)	Limit (A/m)	Verdict
125Kbps	Front Side	10	0.852	1.63	PASS
	Back Side	10	0.245	1.63	PASS
	Left Side	10	0.249	1.63	PASS
	Right Side	10	0.239	1.63	PASS
	Top Side	10	0.388	1.63	PASS
	Bottom Side	10	0.254	1.63	PASS

H-field Strength Result (Test frequency 132KHz)					
Test Loading	Exposure Position	Distance (mm)	H-Field (A/m)	Limit (A/m)	Verdict
132Kbps	Front Side	10	0.417	1.63	PASS
	Back Side	10	0.249	1.63	PASS
	Left Side	10	0.254	1.63	PASS
	Right Side	10	0.243	1.63	PASS
	Top Side	10	0.393	1.63	PASS
	Bottom Side	10	0.195	1.63	PASS

H-field Strength Result (Test frequency 134.2KHz)					
Test Loading	Exposure Position	Distance (mm)	H-Field (A/m)	Limit (A/m)	Verdict
134.2Kbps	Front Side	10	0.532	1.63	PASS
	Back Side	10	0.255	1.63	PASS
	Left Side	10	0.250	1.63	PASS
	Right Side	10	0.246	1.63	PASS
	Top Side	10	0.386	1.63	PASS
	Bottom Side	10	0.198	1.63	PASS

Note:

1. The most conservative distance gap of 10mm was used for testing.
2. This device designed for typical desktop applications, therefore mobile exposure conditions are applied and client device is placed directly in contact with the transmitter.
3. The maximum average output power of Bluetooth is 0.37dBm and the tune-up tolerance was set to 1.0dBm adjusted to e.i.r.p. is 0.56mW, therefore the maximum power density of Bluetooth was calculated as 0.0001mW/cm².
4. The maximum radiated emission of NFC mode at 3m is 26.59 dBμV/m, adjusted to Power density is closed to 0mW/cm².
5. This device contains transmitters that may operate simultaneously

No.	Applicable Combination	Yes or No
1	125KHz/132KHz/134.2KHz+Bluetooth	Yes
2	NFC+Bluetooth	Yes

6. therefore simultaneous transmission analysis is required and should be compliance the following requirement:

$$\sum_{i=1} \frac{\text{E-Field}}{\text{limit } i} + \frac{\text{PD}}{\text{Limit } 2} \leq 1 \text{ and } \sum_{i=1} \frac{\text{H-Field}}{\text{limit } i} + \frac{\text{PD}}{\text{Limit } 2} \leq 1$$

Applicable Combination	Strength		Power Density		Result
	E-Field	Limit1	Bluetooth	Limit2	
125KHz/132KHz/134.2KHz+Bluetooth	24.06	614	0.0001	1	0.040
NFC+Bluetooth	0	824/f	0.0001	1	0.000

Transmission Condition	Strength		Power Density		Result
	H-Field	Limit1	Bluetooth	Limit2	
125KHz/132KHz/134.2KHz+Bluetooth	0.852	1.63	0.0001	1	0.523
NFC+Bluetooth	N/A	2.19/f	0.0001	1	N/A



Annex A General Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address:	FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

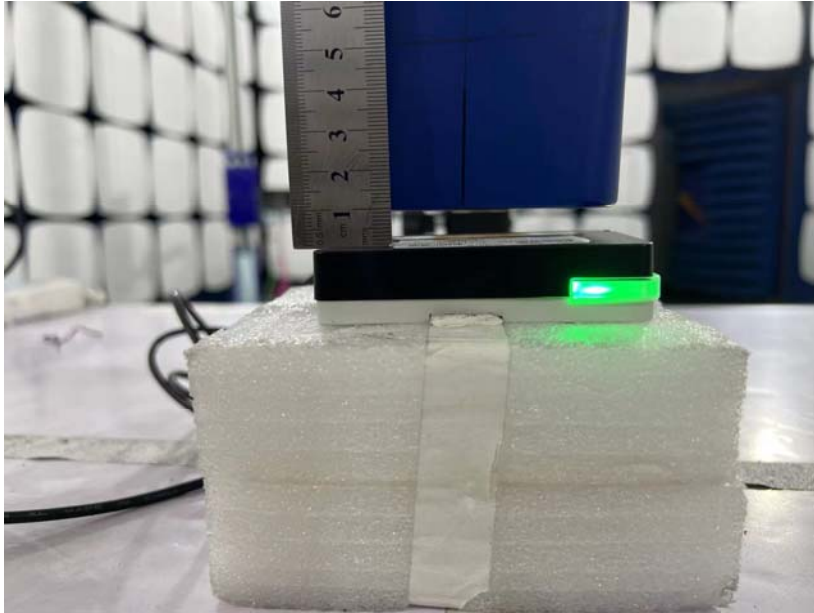
3. Facilities and Accreditations

The FCC designation number is CN1192, the test firm registration number is 226174.

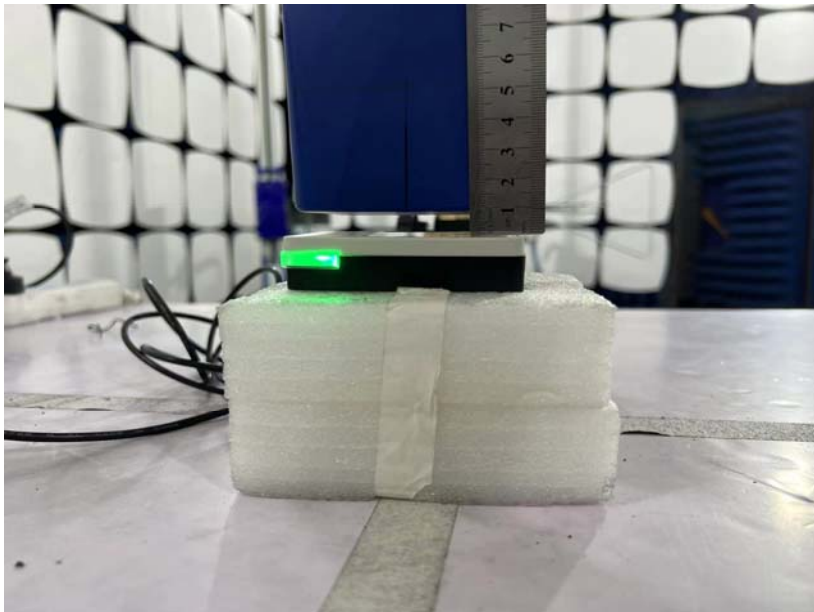
Note:

The main report is end here and the other Annex B will be submitted separately.

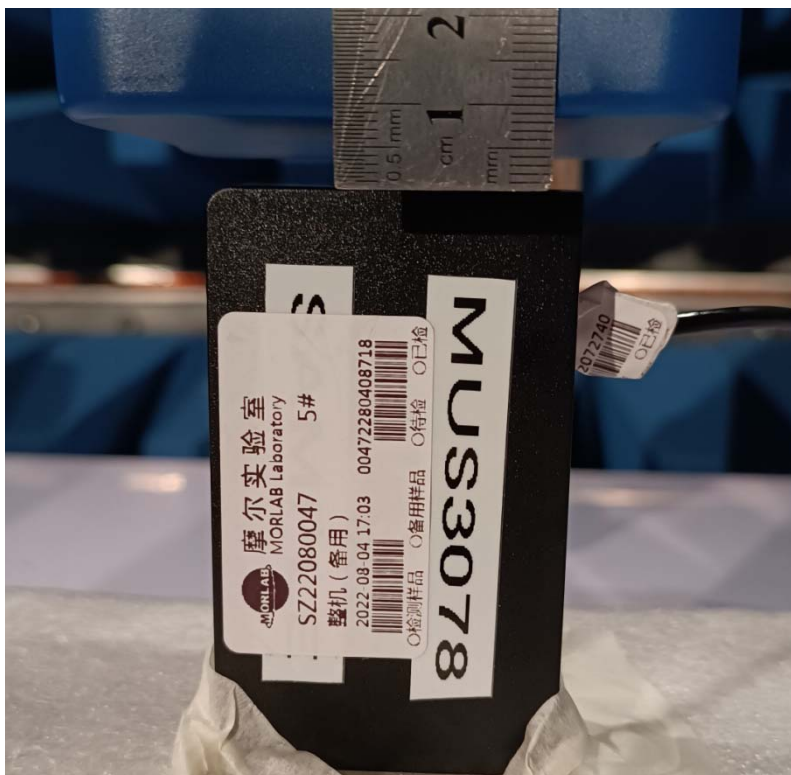
Annex B Test Setup Photos



Front Side_10mm



Back Side_10mm



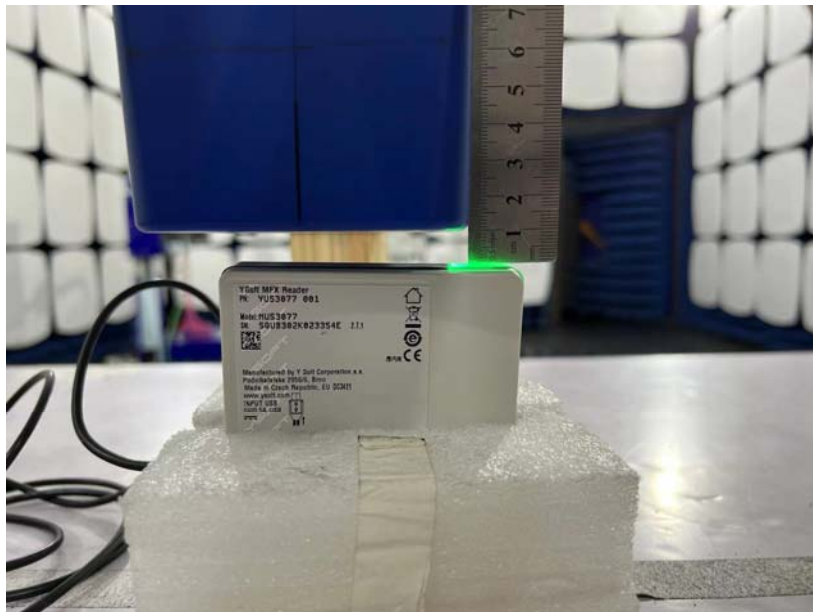
Left Side_10mm



Right Side_10mm



Top Side_10mm



Bottom Side_10mm