X8

Requirement Specification

1.00

Document Name:

01-REQ-X8 1.00.docx

	Name	Signature	Date
Prepared by:	Vincent Zhong		
Reviewed by:			
Approved by:			

Version History

Date	By	Changes	Version
2016-05-18	Vincent Zhong	Initial Version	1.00

Contents

1.0. Introduction

X8-Pay is a mobile payment device, it supports standalone mode. With NFC feature built-in, it can be used to connect to the mobile phone or tablet, make the payment transaction, then send the result to the mobile phone or tablet. User can do second embedded software development in X8-Pay, so it's flexible to install different applications, including mobile payment, taxi payment and so on.

2.0. Features

- [REQ-001] Contactless card reader/writer
    - [REQ-001a] Read/write cards compliant with ISO14443 part 1-4
        - [REQ-001a-01] Support Type A cards, such as Mifare DESFire，Mifare Plus
        - [REQ-001a-02] Support Type B cards, such as EZ-Link
        - [REQ-001a-03] Support T=CL protocol
        - [REQ-001a-04] Mifare Classic 1K, support 7 bytes UID
        - [REQ-001a-05] Support direct transmit control for Mifare Plus
        - [REQ-001a-06] Product Current: 0.5A
    - [REQ-001b] Reading distance: 4 cm
- [REQ-002] Support 192 x 64 dot matrix LCD
    - [REQ-002a] Support 4 rows x 24 characters with ASCII code
    - [REQ-002b] Support multiple languages such as English, Chinese, Persian, Arabic and Italian
    - [REQ-002c] Each character is 16x16 dots
    - [REQ-002d] LCD backlight adjustment
- [REQ-003] 16-key keypad
    - [REQ-003a] Number Keys 0-9 with character input support similar to mobile phone
    - [REQ-003b] Function, Cancel, Clear, Enter keys
    - [REQ-003c] Up, Down, * and # keys
- [REQ-004] 4 LED Status Indicators
    - [REQ-004a] From left most: blue, yellow, green, red
    - [REQ-004b] User controllable
- [REQ-005] Rechargeable Lithium Ion Battery
    - [REQ-005a] Voltage: 3.7V
    - [REQ-005b] 1000mAh
    - [REQ-005d] Rechargeable via power adaptor (Micro USB port) with max 2 hours
    - [REQ-005e] Operating duration time：8 hours
- [REQ-006] USB 2.0 Device
    - [REQ-006a] Standard Micro USB connector
    - [REQ-006b] CCID interface class
    - [REQ-006c] Support USB firmware upgrade
- [REQ-007] Built-in real time clock (RTC)
- [REQ-008] Security
    - [REQ-008a] Physical protection for sensitive data
    - [REQ-008b] Unique ID number for each device
    - [REQ-008c] Support symmetric cryptographic algorithms: 3DES, AES-128 and AES-256
    - [REQ-008d] Support asymmetric cryptographic algorithms: RSA with the key size up to 2048 bits
    - [REQ-008e] Support hash algorithms: SHA-1, SHA-256
- [REQ-010] Environment Condition
    - [REQ-010a] Operation Temperature：0 to 50 ºC
    - [REQ-010b] Operation Relative humidity：10% - 90%
    - [REQ-010c] Storage Temperature : - 20 to 60 ºC
    - [REQ-010d] Storage Relative humidity : 5% - 95%
- [REQ-011] Certifications

- [REQ-011a] CE
- [REQ-011b] FCC
- [REQ-011c] Contactless EMV L1 (Compliant)

3.0. Size and Weight

3.1. Sample Casing Design

Figure 3-1 X8 Appearance

3.2. Physical Specifications

 Size: 92.92mm (L) x 63.29mm (W) x 11.8mm (H)
 Weight: 65 g
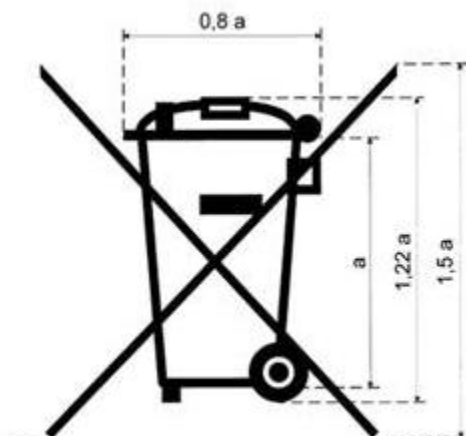
4.0. Development Time Estimation

About 1.5 month

5.0. CAUTION:

Risk of explosion if battery is replaced by an incorrect type.Dispose of used battery a ccording to the instructions.
This device complies
with part 15 of the FCC Rules. Operation is subject to the following two
conditions: (1) This device may not cause harmful interference, and (2) this
device must accept any interference received, including interference that may
cause undesired operation.

a=3.33mm

FCC Statement
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions,
may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be
determined by turning the equipment off and on, the user is encouraged to try to correct the
interference by one or more of the following measures:

    Reorient or relocate the receiving antenna.
    Increase the separation between the equipment and receiver.
    Connect the equipment into an outlet on a circuit different from that to which the receiver
is connected.
    Consult the dealer or an experienced radio/TV technician for help.

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.