POPBOX

Product Hardware Requirements

Specification

Version：	V1.0.1	No：	TH-TL-POP-10
Security level：	A+	Department/Project：	Product department
Product：	POPBOX	Subsystem：	

About the book

Book overview

This book is the blockchain project of POPCHAIN Foundation - POPCHAIN hardware terminal-POPBOX product hardware requirements specification.

POPCHAIN Foundation provides software and hardware design and implementation solutions for the project. The POPCHAIN Foundation has the final right to modify and interpret this document and program.

Contents

I. Introduction

This document, as a product development portal, can be used as a requirement document for internal hardware development, provide development direction and guidelines for the next product design, and provide basis and standard for product testing and acceptance. The overall product design and hardware design documentation are subject to the requirements described in this document.

1. Purpose

The purpose of this document is primarily to clarify the requirements for hardware development.

2. Scope

The main readers of this document are project managers, APP and server software developers, and hardware-related staff.

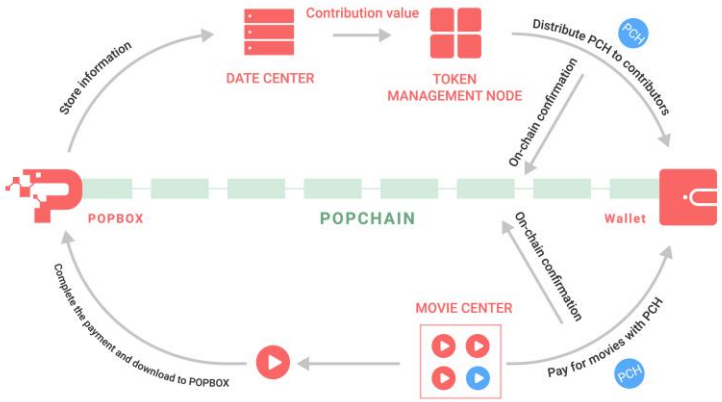
II. User role description

User role	User description
Ordinary user	POPBOX purchasers and users

III. Product Overview

This product is mainly used for Korean users, providing users with content viewing/sharing, private cloud disk, mobile screen, external screen display, Token management, mining, etc.

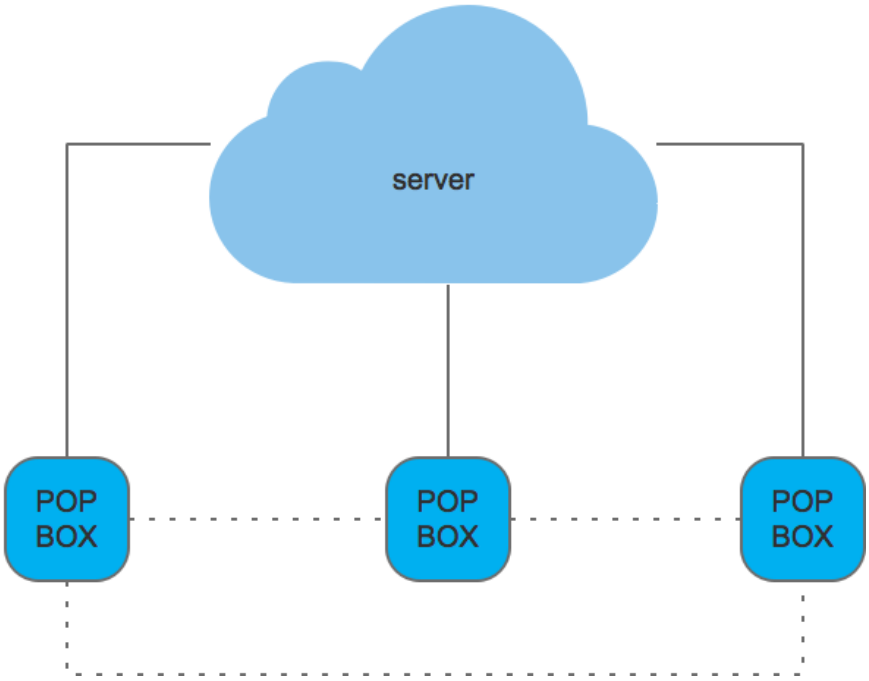
1. General process description



[General process descriotion]

2. Architecture diagram

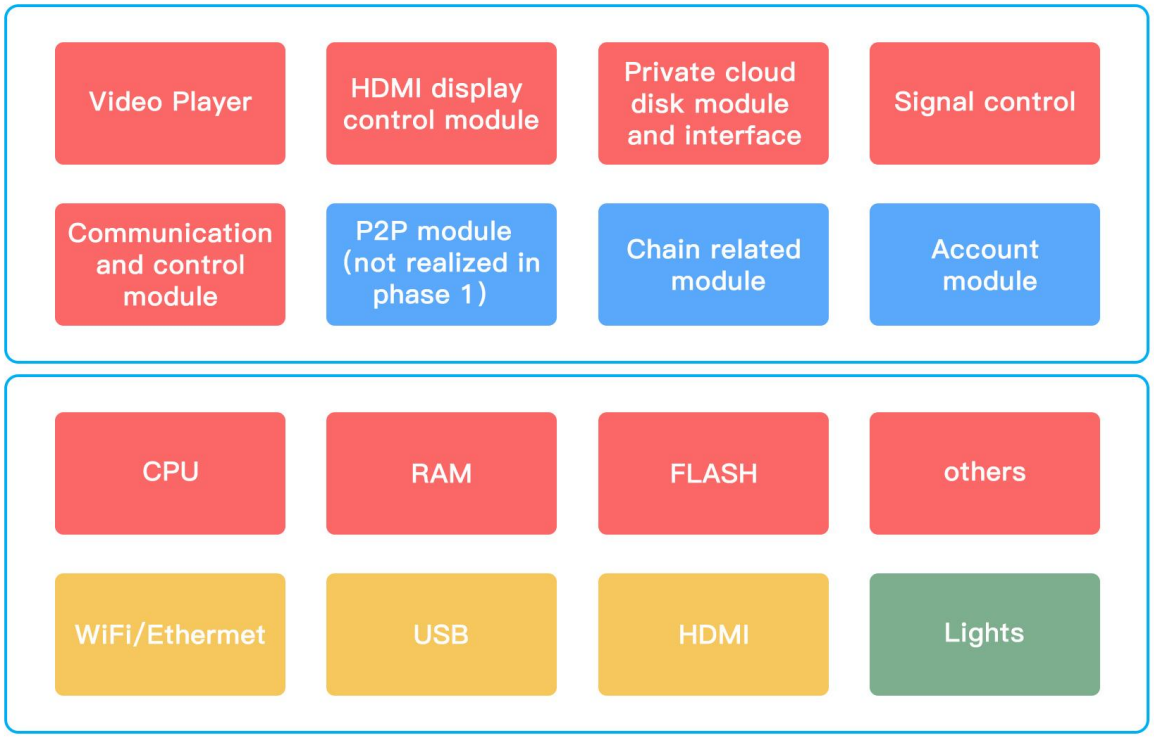
The whole product architecture adopts the central server and client structure, and the POPBOX is used as a client for the end user. The central server controls all POPBOXes and provides various services (Token management, content management, etc.). The POPBOX can access locally saved content and content on other POPBOXes through the server, and each POPBOX is shared and accessed through P2P authorization (Note: this function is not implemented in the first phase). As shown below:



[Architecture diagram]

3. Main function description

The main functional modules are as follows

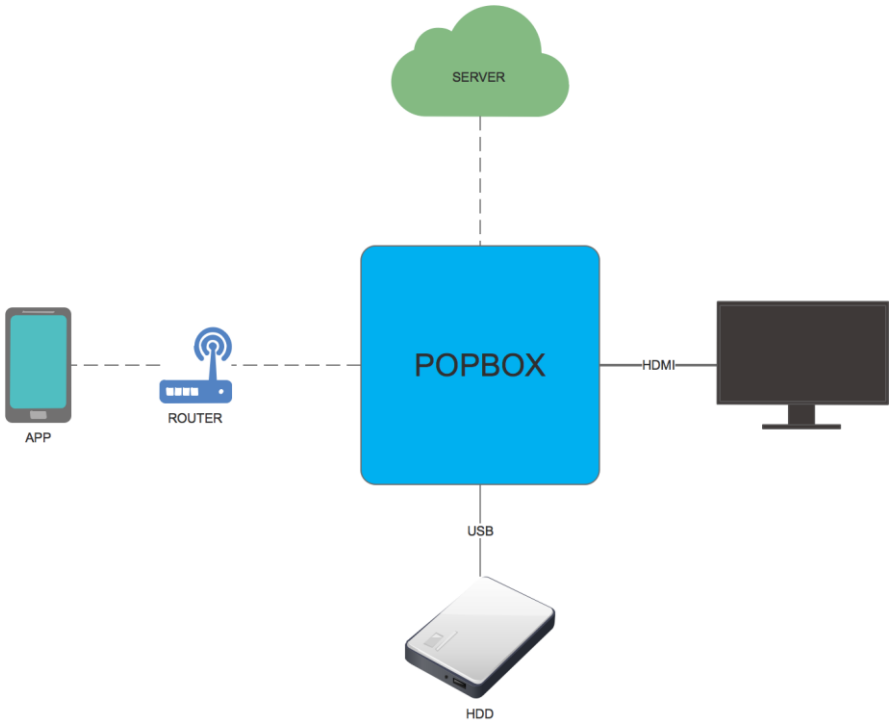


[Main function description]

IV. Product function requirements

1. Physical architecture and business process

The physical architecture is shown below



[Physical architecture and business process]

Business process：

1) USB：Private cloud interface. Through USB, an external hard disk can be used as a private cloud disk to manage the storage of video, text, etc.

2) HDMI：An external display interface through which an external 4K display image is displayed.

3) APP：Through APP, the POPBOX mining revenue and the content of the corresponding user account can be managed, including private cloud disk management and content management.

4) Server: See the server related documentation.

2. Appearance function segmentation and definition

1) Ethernet interface :1 standard RJ45 interface

2) Power socket: 1

3) USB interface: 1 USB 2.0 interface

4) HDMI interface: 1

5) Indicators: 3, as defined below

6) Power indicator: When the power is turned on, the red light is always on; when the power is not turned on, it is always dark.

7) Network signal indicator: it flashes 2 times 1s in blue during the connection process, and it is always bright blue after the connection. If the connection fails, it shows bright red.

8) Hard disk mount indicator: the mount completed is steady blue, and the failed mount is red.

V. Other non-functional product requirements

1. Configuration requirements

1) CPU: Main frequency is no less than 2GHz/dual core

2) RAM：Not less than 1GB, DDR3

3) WiFi：Support 2.4G with Bluetooth module

4) Ethernet: no less than 100M

5) USB: At least 1 USB2.0 interface, the load capacity not lower than 500mA

6) HDMI：At least 1 HDMI 2.0 interface with 4K 30fps output

7) Power supply: Support Korean specifications and meet KC certification requirements

2. Product application environment

1) Use environment: indoor scenes such as homes and offices

2) Market positioning: Korea's exclusive supply

3) Working temperature: 0~50 degrees, humidity: 10%~90% (non-condensing)

4) Storage temperature: -20~60 degrees, humidity: 5%~95% (non-condensing)

3. Detailed hardware and structure requirements table

Hardware configuration	
CPU	Hi3798M V200:Quad-Core Cortex-A53 CPU up to 2GHz,Penta-Core ARM Mali-450 up to 750MHz
RAM	Support dual channel 32-bit DDR3-2133， 1GB DDR3-1600
Memory storage	Support JEDEC eMMC5.0,product planning eMMC5.0 8bit ,Data width
Wifi/ Bluetooth	BT4.0 Integrated Combo Module AP6212 802.11a/b/g/n 2.4G single admission；BT4.0
USB	A USB2.0 interface with a load capacity of no less than 500mA, support common hard disks
HDMI	HDMI2.0 Output interface, support 4K 60fps

Ethernet	100/1000M Network port
Power interface	Outlet，2.0mm of the diameter of pin Power socket, 2.0mm diameter pin, 6.0mm aperture
Switch	Power Off Self-locking switch, press lock Power On, unlock popup Power Off
Serial port	Board reserved 4Pin socket for pre-development and debugging. No post-production after mass production
System power supply	DCDC+LDO mode
Mainboard	No：1； Layer：4 ； Size: To be determined according to the appearance size
Power Adapter	DC12V-1A Wall Plug , Korean specifications, meet KC certification requirements
Overall power consumption	The maximum power consumption of the whole machine is not higher than 10W, and the standby power consumption is not required
Cooling solution	If necessary, heat sink, thermal pad, graphite sheet are allocated according to requirement
Back plate configuration	
Padded back panel	Stroke self-locking switch, power socket, RJ45 network port socket, HDMI socket, USB2.0 socket
Front panel configuration	
1 power indicator light; 1 WIFI signal light; 1 hard disk mount light	

4. Other Requirements

Structure appearance	
External view	To be determined
Colour	Black
Material	ABS plastic
Marking	Design according to customer
Size	To be determined
Appendix	
Power adapter	1
User manual	1
Warranty card	1
Barcode	1
Cable	1
Packaging	
Inner box	The packaging, the inner box label, the inner box pattern and color, the inner box size, and the inner box weight are to be determined.

Outer box	The packaging, the outer box label, the outer box pattern and color, the outer box size, and the outer box weight are to be determined.
Security certificate	
KC	
Certification standards	
Meet Korea's KC certification requirements	

VI. Risk Analysis

Risk	Possibility	Severity	Strategy	Responsiveness
Undetermined appearance leads to construction delay	100%	Severe	Determine the appearance with the customer as soon as possible	Strong
Undetermined suppliers leads to construction delay	100%	Severe	Coordinate customers to identify suppliers as soon as possible	Strong