

<sup>1</sup>  
RFID

RFID

RFID

RFID

RFID

<sup>2</sup> RFID

<sup>3</sup>

Radio Frequency Identification RFID

<sup>4</sup>

<sup>5</sup>

<sup>6</sup>

RFID

RFID

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RFID

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RFID

RFID

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RFID

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RFID

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RFID

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RFID



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RFID

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13.56MHz RFID

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RFID

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RFID

FM11RF08 Mifare1 S50

S70 Mifare Ultralight NTAG203 I-CODE2 H3 M4QT  
250mm × 25mm -30 ~ 75°C.

ISO 18000-6C 14443A

RFID

2



RFID

RFID

RFID

231 RFID

RFID

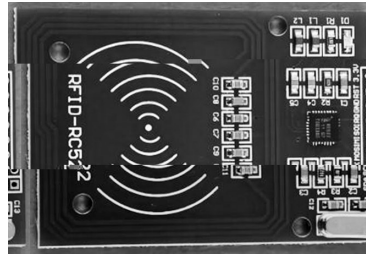
Philips

RC522

12

ISO/IEC14443 TypeA MIFARE

424kbit/s	ISO14443A/MIFARE	50mm	ISO 14443	212kbit/s
1°C	MIFARE Classic		10Mbit/s	SPI
1228.8kbit/s	400kbit/s	3400kbit/s	UART	
	27.12MHz	-30 ~ 85°C.	RC522	3

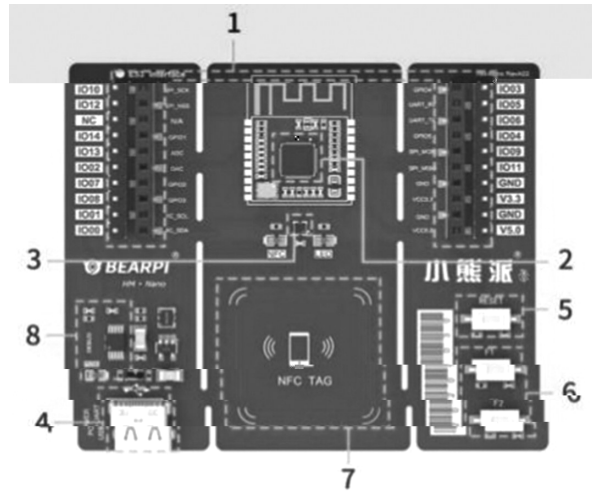


RFID	SPI	RC522	RFID	SPI	10Mbit/s
					ISO/IEC 14443A

2.3.2 RFID

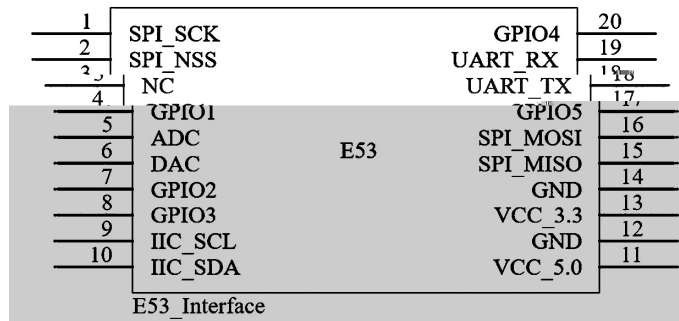
RFID		BearPi-HM Nano	System on Chip	SoC <sup>13</sup>
Nano	73.2mm × 62.7mm × 11.1mm	SoC		
	HarmonyOS			
Nano SoC		USB	E53	NFC

4



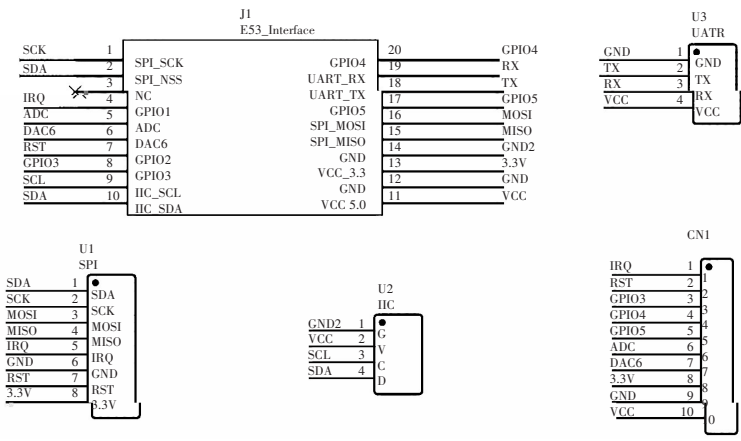
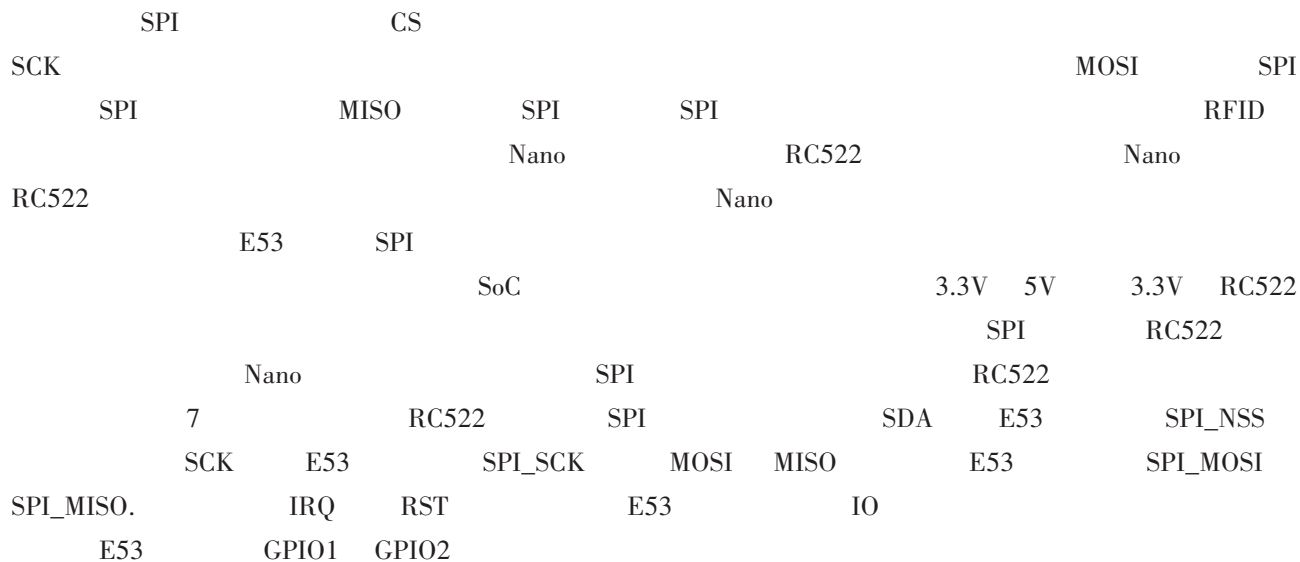
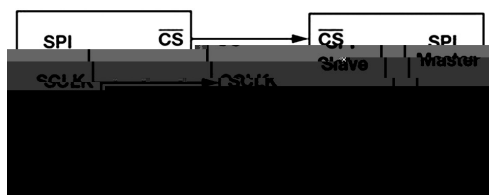
- 1.E53 Interface
- 2.MCU:Hi3861RNIV100
- 3.NFC:NT3H1201W0FHKH
- 4.USB Type-C power supply
- 5.Reset Key
- 6.User's Key
- 7.NFC 天线
- 8.CH340E

	Nano SoC	SPI	MF-RC522	
14	SoC	E53	SPI	E53
	RC522	E53	5	SPI

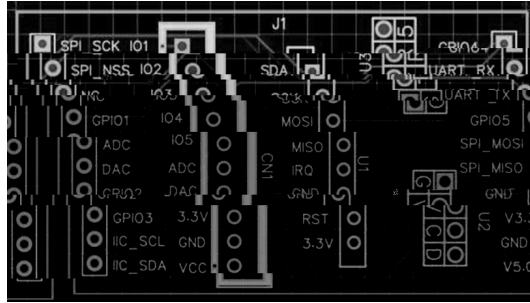


Serial Peripheral Interface SPI

6

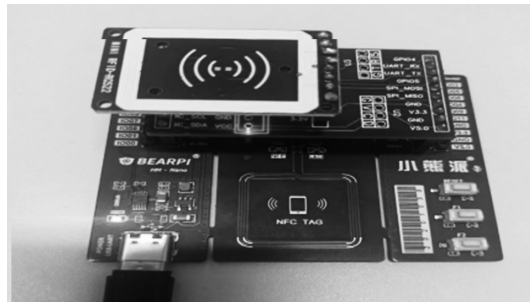


E53 SPI PCB 8 U1 SPI



RC522 PCB E53 RC522

9



PC RFID RFID

2

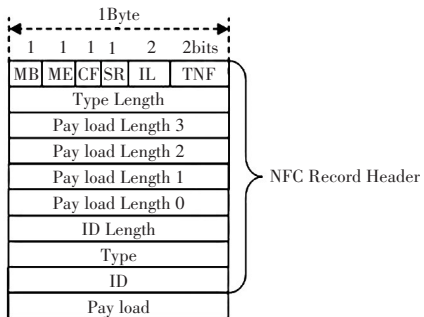
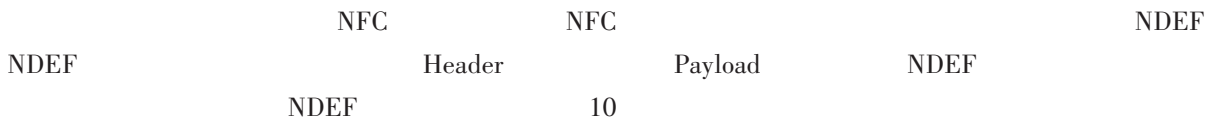
3

2 PC 1 3 4 5

3.21

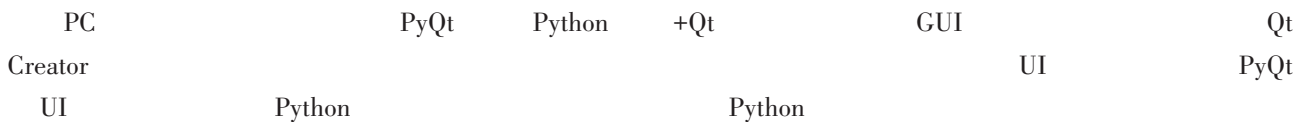
PC

RFID Python PEP 8 PC RFID PC HTTP RFID PC PC RFID PC PC NDEF NDEF

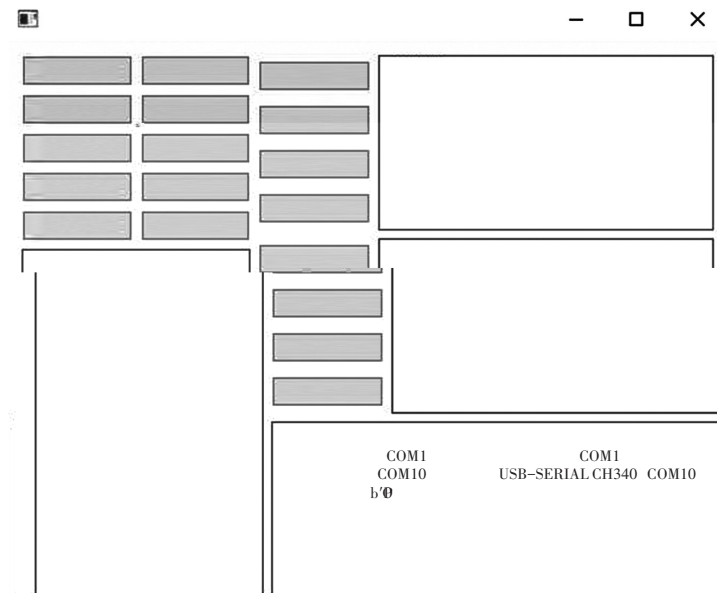


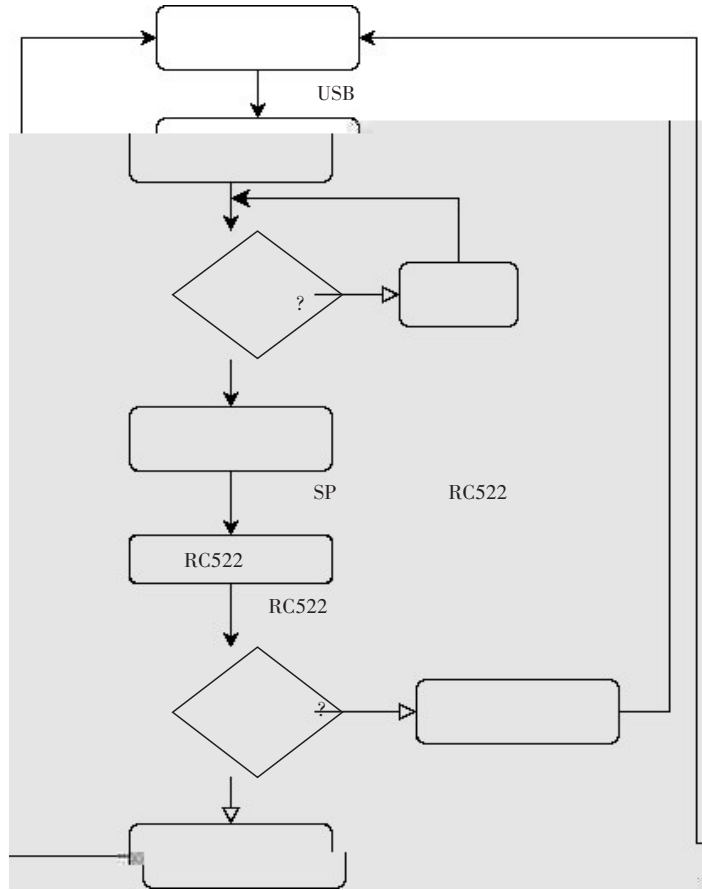
3.2.2

3.2.3



11





RFID                      PC                      PC

RFID

RFID  
RC522

PC

PC

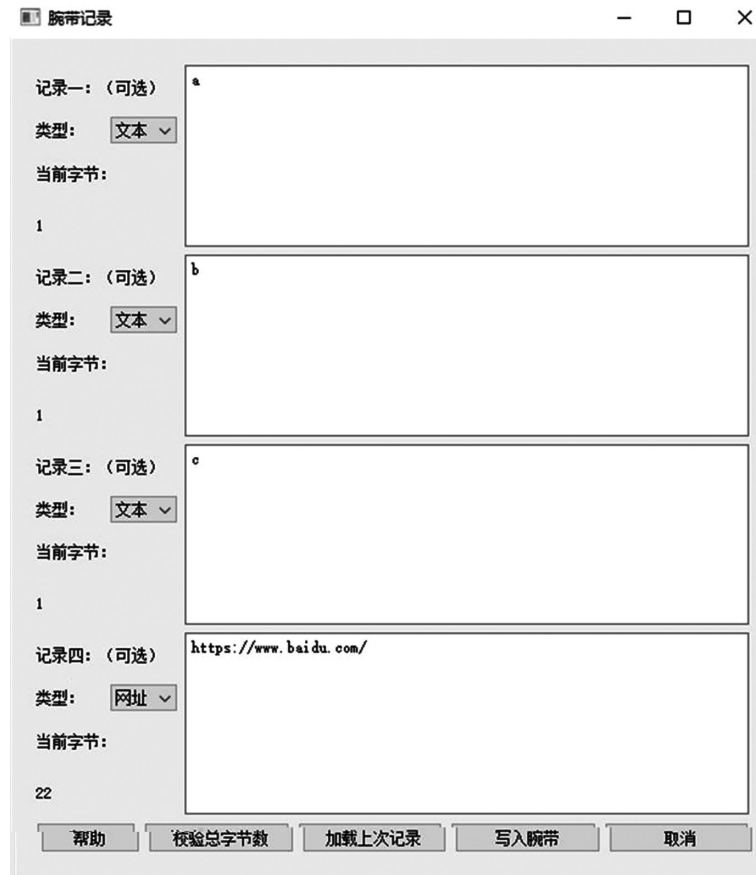
13

PC

PC

RFID  
NDEF





RFID

RFID

SoC RFID

1	. SMIW	RFID	J .	2021 49 03
	471-475 509.			
2	.	J .	2012 11 171-172.	
3	.	J .	2023 266 02 47-48.	
4	.	J .	2019 26 02 82-85.	
5	. RFID	J .	2018 02 9-13.	
6	. RFID	J .	2022 41 06 68-72.	
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- 11 . J . 2023 42 04 160-161.  
12 . RFID J . 2023 20 15 125-127.  
13 . Hi3861 STM32 J . 2023 13 01 85-88.  
14 . RC522 RFID J . 2014 12 168-169.  
15 . J . 2015 34 01 29-33.

## Design of Medical Wristband Application System based on RFID

*School of Physics and Electronic Engineering Xinjiang Normal University Urumqi Xinjiang 830054 China*

With the continuous development of medical technology Radio Frequency Identification RFID technology is widely used in the medical field. This article mainly discusses the development of Radio Frequency Identification technology in the field of medical wristbands and designs a medical wristband application system based on RFID readers. This system can achieve accurate and rapid recognition of patient information. Based on the application scenarios in the medical field a requirement analysis summary design and detailed design were carried out on the hardware and software systems. Finally a suitable model of RFID medical wristband appropriate reader selection and appropriate technical solution were selected. Based on this actual design and development were carried out and a usable overall solution was ultimately achieved.

RFID Medical wristband NFC SoC