







## Opterna-Biometrics Systems


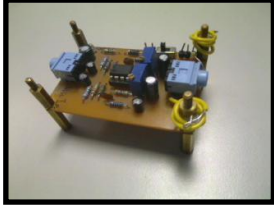
### I. Introduction



The character of biometric identification technology is using human-specific features of the biological signs, such as voice, face, fingerprint, action, etc, carry out identity by computing. Current biometric technology has been widely used in identity authentication, access control and crime investigation. Europe, the United States and Japan at the airport, customs and other control points are extensively used of biometric technology to enhance homeland security solutions.

### II. Product List

| name                      | picture   | name   | picture   |
|---------------------------|---|--|---|
| Host experiment system X1 |  | accessory box X1                             |  |
| voice control board X1    |  | fingerprint scanner X1                       |  |
| Camera X1                 |  | stereo microphone(including connect line) X1 |  |

|                           |   |                       |   |
|---------------------------|---|-----------------------|---|
| voice<br>connection<br>X1 |  | voice amplifier<br>X1 |  |
| mouse X1                  |   |                       |   |

### III. The hardware resources experimental host system

#### voice board

Surplus SPCE061A voice board

#### fingerprint scanner

fingerprint scanning area size: 16.26x24.38mm

image resolution is 480x320 pixels, 500 DPI

original fingerprint image file size is 150K byte

a live finger detection (LFD) capacity

unique serial number built into the USB device descriptors (Device Descriptor)

have 16K Byte memory space, used for application-specific data storage

USB 2.0 compatible interface, plug in devices

standard 2M USB transmission line

66x 66 x 29 mm small size

only 150 grams

Operating temperature: -10 to +55 degree centigrade

#### Camera

Sensor Type: CCD

sensor pixels (million): 130

highest dots per inch (dpi): 1280x 960

maximum number of frames (FPS): 30

color digits (bit): 24

### IV software resources

#### supporting Book

The book explains various types of biometric identification systems technology, use plain language to introduce, minimize the use of arcane mathematical formula model, meanwhile accompany with a vivid demonstration of the experimental operation of video commentary, I am sure the readers can have an enjoyable learning experience

#### Part I Identification of image-related experiments

1. A license plate recognition

2. motion recognition

3. identification of the objects

4. gesture recognition

**Part II sound-related identification experiment**

5. DTMF signal recognition

6. long-range source localization

7. identification of animal sound

8. identification of musical instruments

9. identification of songs

**Part III sound related recognition experiments**

10. treble cycle tracking

11. speaker recognition

12. small key words identify

**Part IV characteristics related human identification experiment**

13. fingerprint recognition

14. face recognition