Java Ring

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Introduction

A Java Ring is a finger ring that contains a small microprocessor with built-in capabilities for the user, a sort of smart card that is wearable on a finger.
Java Ring
Components

- Java iButton – the micro processor
- JVM
- 134 KB of RAM
- 32 KB of ROM
- Real-time clock
- Lithium battery
External Interfacing

- iButton
- Blue Dot receptor
- RS232C serial port adapter
- NVRAM
Features

- Java Card 2.0 standard
- Large RAM and ROM memory capacity
- Unalterable real time clock
- 1-Wire bus standard
- SRAM memory
Features...

- Rapid zeroization
- 1024 bit encryption
- Unique 8-byte serial number
- Can hold files and subdirectories
- Easy read and write
Features...

- Password-protected file areas
- Built-in counters
- Temperature sensors
- Continuously running date/time clock
- Powerful microprocessor support
History

• Dallas Semiconductor Corporation
• 1989: 1-Wire communication protocol
• 1990: “touch memory" devices
• 1998: JavaOne Conference – Java Ring
• Test run: Celebration School, Orlando, FL.
The postal security device

- The U.S. Postal Service application.
- Permit printing of valid U.S. postage on any PC.
- Crypto iButton
Crypto iButton

- High processor performance
- High-speed cryptography
- Exceptional protection mechanism
- E-Commerce firmware
- OOD and Byte code interpreter
- The Java connection – Java iButton
Physical Security

- Metallurgically bonded silicon die
- Near-instantaneous clearing of all memory
- Single data line
- Unstabilized ring oscillator
Internal Architecture
The Java Card applet model

- Client/server architecture
- Network protocol packets
- Application Program Data Units (APDUs)
- Applets
Conclusion

Java Ring permits attachment to a wide variety of personal accessories that includes rings, watchbands or necklaces. The user can select a variation that suits his or her lifestyle and this device is becoming more popular in these days.
References

- www.javaworld.com
- www.ibutton.com
- www.java.sun.com
Thank You