

# EFIS Software Development Kit Users Manual

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SDK Version 3.20.02  
June 15, 2009

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# Software Development Kit

## ***Purpose***

This document describes the EFIS Software Development Kit (SDK) and the functions exported by the SDK for use by a calling application.

The SDK is a “thin” software interface between a calling application and EFIS scanners.

SDK supports the Windows 98SE /2000 / XP operating environments and serves the EFIS scanner with Ethernet interface.

## ***SDK Files***

The SDK consists of following files:

1. efisc.h        SDK header file
2. efisc.lib     SDK import library
3. efisc.dll     SDK

## ***SDK Testing***

This SDK version was tested with EFIS (Ethernet interface) scanners running firmware versions 1.0, under Windows 98SE /2000 / XP/VISTA.

## **SDK Functions (Passive mode)**

This section lists all the externally visible SDK functions

### **efisOpenDevice**

Syntax: `int efisOpenDevice(int typescanner, unsigned char * addr, int port)`

Description: Opens and initializes the EFIS scanner.

Parameters: typescanner – type of scanner

|                     |   |         |
|---------------------|---|---------|
| TYPESCANNER_EFIS120 | - | EFIS120 |
| TYPESCANNER_EFIS121 | - | EFIS121 |
| TYPESCANNER_EFIS220 | - | EFIS220 |
| TYPESCANNER_EFIS320 | - | EFIS320 |
| TYPESCANNER_EFIS321 | - | EFIS321 |
| TYPESCANNER_IFIS130 | - | IFIS130 |

addr – IP address of device,  
port – port of device (default port is 5000)

Return values: from 0 to 63 is handle of device  
Other is error

### **efisCloseDevice**

Syntax: `int efisCloseDevice(int handle)`

Description: Closes the EFIS scanner.

Parameters: handle - handle of the device

Return values: rcOK,

### **efisStartupSensor**

Syntax: `int efisStartupSensor(int handle)`

Description: Startups the EFIS scanner. This is first function after efisOpenDevice as usual.

Parameters: handle - handle of the device

Return values: rcOK,

### **efisIsFingerPresent**

Syntax: `int efisIsFingerPresent(int handle)`

Description: Detects the finger presence on the sensor's surface. We must call this function after efisStartupSensor.

Parameters: handle - handle of the device

Return values: rcOK,  
rcFINGER\_NOT\_PRESENT

#### **efisGetImage**

Syntax: void efisGetImage(int handle, unsigned char \* img)

Description: This function grabs the **image of a fingerprint** from the fingerprint scanner.

Parameters: handle - handle of the device, img is pointer of the array. You must allocate the memory for the image array.

Return values: void

#### **efisIsFingerPresentV2**

Syntax: int efisIsFingerPresentV2(int handle);

Description: Detects the finger presence on the sensor's surface. We must call this function after efisStartupSensor.

Parameters: handle - handle of the device

Return values: rcOK,  
rcFINGER\_NOT\_PRESENT

#### **efisGetImageV2**

Syntax: void efisGetImageV2(int handle, unsigned char \* img);

Description: This function grabs the **image of a fingerprint** from the fingerprint scanner. We must call this function after efisIsFingerPresentV2 in case return rcOK.

Parameters: handle - handle of the device, img is pointer of the array. You must allocate the memory for the image array.

Return values: void

#### **efisConvertToBmp24**

Syntax: unsigned char \* efisConvertToBmp24(int handle)

Description: This function converts the row image to bitmap image (24 bits).

Parameters: handle - handle of the device

Return values: Pointer to the bitmap image buffer,  
NULL – any errors.

#### **efisGetLengthBmp24**

Syntax: int efisGetLengthBmp24(int handle)

Description: This function returns the length of the bitmap image (24 bits).

Parameters: handle - handle of the device

Return values: the length of the bitmap image

**efisGetHeight**

Syntax: `int efisGetHeight(int handle);`

Description: The function returns the height of the image;

Parameters: handle - handle of the device

Return values: The number of pixel

**efisGetWidth**

Syntax: `int efisGetWidth(int handle);`

Description: The function returns the width of the image;

Parameters: handle - handle of the device

Return values: The number of pixel

**efisLedON**

Syntax: `int efisLedON(int handle, unsigned char flag);`

Description: control of the LEDs, turn on

Parameters: handle - handle of the device, flag – mask for LED

Return values: rcOK - success, -2 – error

**efisLedOFF**

Syntax: `int efisLedOFF(int handle, unsigned char flag);`

Description: control of the LEDs, turn off

Parameters: handle - handle of the device, flag – mask for LED

Return values: rcOK - success, -2 – error

## **SDK Functions (Active mode)**

You must design the TCP server and use the functions with “ServerSock”.

You can switch in active mode by winefisconxxx.exe  
(only for EFIS120 and EFIS320)

### **efisStartActive**

Syntax: `int efisStartActive(unsigned char * addr, int port);`

Description: Switch the EFIS scanner in active mode (use only for debug)

Parameters: addr – IP address of device, port – port of device.

Return values: rcOK, if It is OK

### **efisStopActive**

Syntax: `int efisStopActive(unsigned char * addr, int port);`

Description: Switch the EFIS scanner in passive mode (use only for debug)

Parameters: addr – IP address of device, port – port of device.

Return values: rcOK, if It is OK

### **efisGetImageFromClient**

Syntax: `int efisGetImageFromClient(int typescanner, int ServerSock);`

Description: capture of the fingerprint image to internal buffer

Parameters: typescanner – type of scanner  
ServerSock – socket handle

Return values: rcOK - success, -2 – error

### **efisTransmitImage**

Syntax: `int efisTransmitImage(int typescanner, int ServerSock, unsigned char * img);`

Description: Transfer of the image to host

Parameters: typescanner – type of scanner,  
ServerSock – socket,  
img is pointer of the array. You must allocate the memory for the image array.

Return values: rcOK

### **efisCloseConnection**

Syntax: `int efisCloseConnection(int ServerSock);`

Description: Close the connection

Parameters: ServerSock – socket

Return values: rcOK - success, -2 – error

#### **efisClientLedON**

Syntax: `int efisClientLedON(int ServerSock, unsigned char flag);`

Description: control of the LEDs, turn on

Parameters: ServerSock – socket, flag – mask for LED

Return values: rcOK - success, -2 – error

#### **efisClientLedOFF**

Syntax: `int efisClientLedOFF(int ServerSock, unsigned char flag);`

Description: control of the LEDs, turn off

Parameters: ServerSock – socket, flag – mask for LED

Return values: rcOK - success, -2 – error

### Code Samples (Passive mode)

This section contains a sample of program. It demonstrate of the usage of the complete set of SDK calls.

```
#include <stdlib.h>
#include <stdio.h>
#include "efisc.h"

void main(void)
{
    short rc;
    byte * pimg;
    int    handle, length;

    handle = efisOpenDevice("192.168.100.2, 5000");

    if ( handle < 0 ) {
        printf("Error OpenDevice\n");
        exit(1);
    }

    if ( efisStartupSensor(handle) != rcOK ) {
        printf("Error StartupSensor \n");
        exit(1);
    }

    while(1) {
        if ( efisIsFingerPresent(handle) == rcOK ) {

            //      Convert row image to bitmap
            pimg = efisConvertToBmp24(handle);
            length = efisGetLengthBmp24(handle);

            if ( efisStartupSensor(handle) != rcOK ) {
                printf("Error StartupSensor \n");
            }
        }
    }
    efisCloseDevice(handle);
}
```