A Series of Standalone Products

Communication SDK manual

Version 6.12

2009-9-15

Development Guide of Serial Standalone Communication SDK

Release History

Date	Revision	Change
2006.12	5.10	Add the supports for the newly-added functions of black-white screen fingerprint machine
2007.07	6.0	Add the supports for color-screen fingerprint machine
2008.02	6.1	Revise BUG, add the supports for the newly-added functions of color-screen
2009.09	6.12	Add the supports of USB communication Add the ZKFinger10.0 algorithm, mixed-identification terminal support of face and fingerprint

Claim:

- The information in this document is subject to change without notice.
- ZKSoftware Inc. is the logo of ZKSoftware technology, which has been registered in China and the United States.
- The other trademarks and product names referred in this document are the companies or the manufactured products which own the corresponding trademarks and product names.
- ZKSoftware Inc has no ownership of other company's trademarks and product names.
- The using not the SDK problems during the developing, please solve them by yourself.
- Not responsible for the data loss caused by man-made or program itself during using this SDK.

Content

1. About standalone communication SDK

Standalone communication SDK is an Application Program Interface (API) for communication of the standalone fingerprint machine, it provides with convenience to manage user information and fingerprint, download T&A record, and configure fingerprint machine and Access Control Option. Main function is as follow.

1、Download T&A record.

2、Download, upload user information, card information and fingerprint

3、Configure the Access Control machine option.

4、Setup various configtion like as standalone fingerprint machine time, and matching threshold and so on.

5、Ability to trigger various event, such as press fingerprint, verify to pass

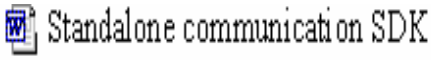
6、Can set user " Short message"(only apply to the machine which own this function).

2. SDK Installation

2.1Folder and Contents

1、 

2、 

3、 

2.2 How to install the SDK

Copy all dll file under the system32 of system directory, click start—>run regsvr32 Zkemkeeper.dll, the prompt will appear to indicate that register is successful, import this control to development tool. (Please refer to actual tools application) ability to use it through simply drag and drop.

Explanation

Following illustration take C syntax to explain function protocol, VB syntax illustrate function purpose, the function is classed by its purpose, and in the example the CZKEM1 is control name. The machineNumber is machine No, SDK default as standalone communication SD.

3. Easy Start

Before executing all API functions, firstly connect the device, if the network is connected well, pleas use connect_net (The detail use, please see this function explanation). If use serial port or 485 to connect, please use connect_com to connect the device. All connection parameters such as device IP, machine number, baud rate can be set in device menu.
During connection processs, don't need how to use the detail protocol, and the development package has been encapsulated perfectly, and just calling the control interface is OK.
Note: when the network is connecting, the port is 4370.

3.1 The common function to upload, download and manage user basic data

3.1.1 Download attendance record

The flow of execution：first, use the function ReadAllGLogData to read in all attendance record to the memory(SDK automatically administrate memory)， then execute the function GetGeneralLogData to read in each attendance record. When the function GetGeneralLogData return False, that means all records have been taken in, please refer to follow functions which maybe use in this course, for more detail about the function using, can see the following actual explanation. After completing operation, perform the function DisConnect to disconnect the linked equipment, the SDK will release the resource which is used by SDK itself.

1 ReadAllGLogData

Read in all attendance record to the memory，prepare for the functionGetGeneralLogData to get the attendance records which purpose is same the function ReadAllGLogData.

2 GetGeneralLogDataStr

Get the attendance record from the memory, which purpose is same with the function GetGeneralLogData, only the parameter form of return time is different.

3 ClearGLog

Clear all attendance record.
Note: All function gets the each item of the attendance record one by one, when returning Failure, the indication is that all records have been taken in. for more detail, please refer to detailed handbook of the function interface. If the machinet provides Work Code function , may use the function GetGeneralExtLogData to read the attendance record from the memory.

3.1.2 Users data to add, delete, change, look up

To add the user and to upload the user, the deletion includes to delete the fingerprint, the password, the user. The revision refers to revision user name, the privilege, the password and so on; the fingerprint cannot to be revised. Inquiry and user downloading.
General the flow of downloading user: which is same with the downloading attendance record, first carries out the function ReadAllUserID, the ReadAllTemplate reads user all information to the memory (Note: Even if reads in all user information, the capacity is very smaller than PC memory). Then may execute the correlation function to gain (get), like GetUserInfo, GetUserTmp and so on, gain user information

1 ReadAllUserID

Read in the user all information (serial number, name, password, without fingerprint) to the memory

2 ReadAllTemplate

Read the user all fingerprints template in the memory.

3 SetUserInfo

To add or revise user's information, if user exists, then covers it, otherwise create it. It is better to use this function.

4 SetUserTmp

To add (Upload) the user fingerprint template. Other functions with same purpose include: SetUserTmp, SetEnrollData, SetEnrollDataStr, please refer to other chapter descriptions.

5 CardNumber attribute

This attribute means that user uploads or downloads some user's card information.

Firstly set cardnumber[0]=the card number to create a user, then use setuserinfor to write the card information of user. During the download, get this attribution after the function getuserinfo, that it, get the card number of user.

Read: FAQ, A5, K8 RF management card's problem

6 DeleteEnrollData

Delete user itself either user password or fingerprint.

7 DelUserTmp

Delete user fingerprint template.

8 GetUserInfo

According to the serial number to inquiry user information, that includes the password, the

name and so on.

9 GetUserTmp

Inquiry (download or obtain) the user fingerprint template, the fingerprint template of this function returns by the character string, may refer to other functions, for example: GetEnrollDataStr, GetUserTmp, GetEnrollData all may obtain the fingerprint template, a lot of functions are compatible with existences, its internal realization is same

10 ModifyPrivilege

Modify user privilege

11 GetAllUserID

Get some user information from the memory, this function every time execute a time, the user record which point to the memory transfers to the next record, when this function returns to False, download all user informations, may according to the user serial number this function return, download fingerprint template. Coordinates ReadAllUserID, ReadAllTemplate, the GetUserTmp function, may download all user information.

3.1.3 Download the management record

The process to download management record and attendance record process are quite same, all is first to read in the memory, then obtains each record.

1 ReadAllSLogData

Read in all management record memory, to prepare for getting he management record The function with same function has ReadSuperLogData

2 GetAllSLogData

Get the management record from the memory. The purposer is same with the function GetSuperLogData function.

3 ClearSLog

Clear the management record.

3.2 Commonly used functions to Access Control Operation

Mainly include: the Time Zone, the group used Time Zone, user the Time Zone to upload, download, unlocking combination and so on. There are 50 Time Zone, 5 groups, 10 the locking combination in the machine. If you do not understand the detail, please refer to the function explanation.

1 GetTZInfo

Download The Time Zone setup.

2 SetTZInfo

Upload The Time Zone setup.

3 SetUserTZStr

Upload the used Time Zone by user.

4 GetUserTZStr

Download the used Time Zone by user.

5 SetUserGroup

Set that users belong to some group.

6 GetUserGroup

Inquiry the group that user was assigned to.

7 SetGroupTZStr

Upload the used Time Zone by group.

8 GetGroupTZStr

Download the used Time Zone by group.

9 SetUnlockGroups

Return the unlocking combination of the fingerprint Access Control Device

10 GetUnlockGroups

Download the unlocking combination.

11 ACUnlock

The order to open the door

3.3 Commonly used functions to Equipment Operation

Mainly includes: Machine parameter, like time, communication parameter, power source managemen and so on.

1 Beep

Bell ring.

2 ClearLCD

Clear LCD displaying content, prepares to reads in character which want to write. WriteLCD may read the character in LCD which wants to display.

3 Connect_Com

Connect with machine, user of the Connect_Net function connect to the machine by network..

4 EnableDevice

Make the machine to be at shield condition or the cancellation shield to the auxiliary equipment. EnableClock is used to stop the glittering of the stopwatch. The similar function has DisableDeviceWithTimeOut, this function not only shield the auxiliary equipment but also have the overtime limit. Uses the EnableDevice function, the programmer may follow own procedure to control the state.

Whether permit the fingerprint machine to punch cards, and not perminting the fingerprint machine to punch cards can improve the speed and effeciency of communication when there is a larger amount of data comunication.

5 GetDeviceInfo

Get the configure parameter of the relative equipment. The function with the similar function includes: GetDeviceStatus, SetDeviceInfo, SetDeviceInfo, and other functions, like to revise the time function SetDeviceTime, SetDeviceTime2 in the machine. Modify IP function SetDeviceIP in the machine. can get a number of the equipment by The user's function GetSerialNumber, please refer to the equipment management function in the development handbook. In the notmal state, if there is a downloading the equipment parameter, there will be uploading in the equipment, the function name also is changed from the Get... to the Set... The purpose of the function is symmetrical; certainly some parameters could not revise, like as the equipment name, sequence number and so on.

6 RestartDevice

Restart equipment，the correlation function has PowerOffDevice, the shut-down power source.

7 SetWiegandDefine

Set the Wiegand output form to the Access Control machine. Corresponds the Get function also be allowed to gain this form.

3.4 Commonly used events

1 OnAttTransaction

When works as the fingerprint successfully, triggers this event. The monitor program may very easy real situation find out the difference situation. General name this event the real-time event.

2 OnAlarm

Real-time alarm the event, may monitor the equipment to the alarm condition.

3 OnKeyPress

Works as according to the keyboard, triggers this event, may monitor keybord situation

4 RegEvent

When the connection succeeds, calling the function, real-time event will be activated. For example, activate the OnAttTransaction, OnAlarm event.

RegEvent (LONG dwMachineNumber, LONG EventMask, VARIANT_BOOL * pVal)

function;

Below is the definition of registered events. All registered events is EventMask = 0x7FFF (depend on the bit to register events)

Define EF_ATTLOG 1 / / track the attendance log events / OnAttTransaction

Define EF_FINGER (1 <<1)

Define EF_ENROLLUSER (1 <<2)

Define EF_ENROLLFINGER (1 <<3)

Define EF_BUTTON (1 <<4)

Define EF_UNLOCK (1 <<5) / / unlock

Define EF_STARTUP (1 <<6) / / Starting System

Define EF_VERIFY (1 <<7) / / fingerprint verification

Define EF_FPFTR (1 <<8) / / Extract Fingerprint Feature Point

Define EF_ALARM (1 <<9) / / Alarm signals

Define EF_HIDNUM (1 <<10) / / RF card number

Define EF_WRITECARD (1 <<11) / / write card successfully

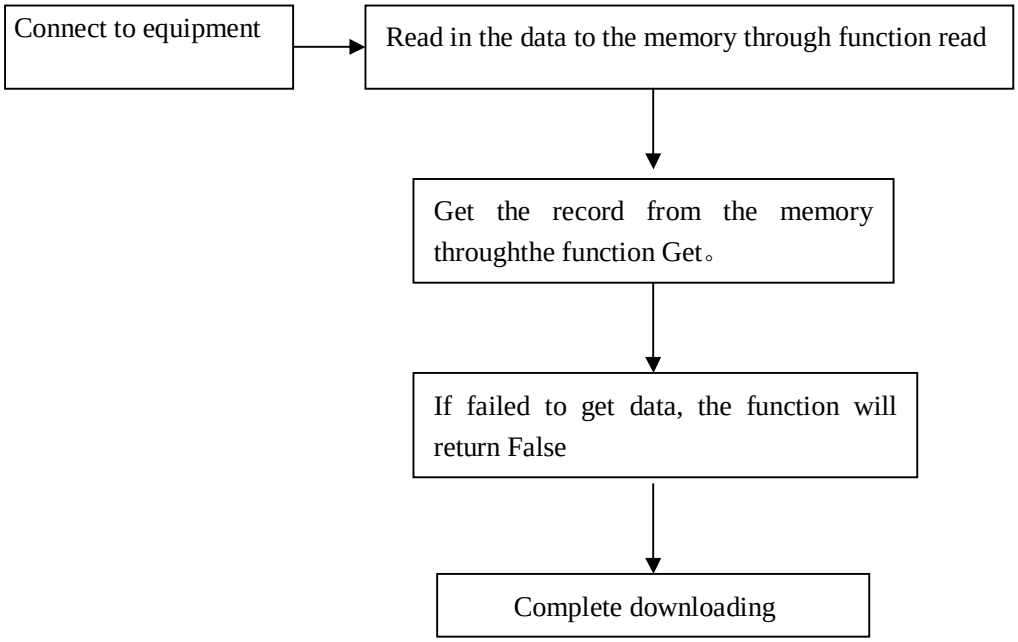
Define EF_EMPTYCARD (1 <<12) / / removals card successfully

For example: IF CZKEM1.RegEvent (devID, 1) then / / registration events OnAttTransaction

Showmessage ('regevent sucess!');

IF CZKEM1.RegEvent (devID, 32767) then / / registration all events, reg all event

3.5The flow of downloading data (attendance record, user information, fingerprint)



4. Function Description

4.1 Data Management

4.1.1 User infomation

4.1.1.1 GetUserInfo

[Protocal]

VARIANT_BOOL GetUserInfo([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] BSTR * Name, [in] BSTR * Password, [in] LONG * Privilege, [in] VARIANT_BOOL * Enabled)

[Purpose]

Via registered user No. get user information.

[Parameter]

Pleaserefer to SetUserInfo

[Return Value]

Return True for success, otherwise False.

[Exanple]

```
Dim dwEnrollNumber
Dim name As String
Dim password As String
Dim privileg As Integer
Dim enable As Boolean
Dim temp As Boolean
dwEnrollNumber = 55555
temp = CZKEM1.GetUserInfo(machineNumber, dwEnrollNumber, name, password, privileg, enable)
```

4.1.1.2 SetUserInfo

[Protocal]

VARIANT_BOOL SetUserInfo([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] BSTR Name, [in] BSTR Password, [in] LONG Privilege, [in] VARIANT_BOOL Enabled)

[Purpose]

Enroll one user and write in his information.

[Parameter]

dwEnrollNumber

Regitered No.the user has enolled.

Name

User Name

Password

User Password

Privilege

User's Privilege；0，Commone User；1，enroller ；2，Administrator;3，Supper Administrator

Enabled

Whetherthe user is forbided or not, False is forbid.

[Return Value]

Return True for success, otherwise False.

[Example]

Dim dwEnrollNumber As Long
Dim name As String
Dim password As String
Dim privileg As Long
Dim enabled As Boolean

dwEnrollNumber = 1
name = "Henry"
password = "12"
privileg = 3
enabled = True
'CZKEM1.CardNumber(0) = 234 here setup user's Card No.
CZKEM1.SetUserInfo MACHINENUMBER, CInt(dwEnrollNumber), CStr(name), CStr(password), CInt(privileg), CBool(enabled)

[Special Consideration]

This function takes responsibility as enrolling user, but it still does not write in fingerprint template, may use the function SetUsertmpStr\SetUsertmp to upload fingerprint template data.

4.1.1.3 ClearAdministrators

[Protococol]

VARIANT_BOOL ClearAdministrators ([in] LONG dwMachineNumber)

[Purpose]

Clear all administrators' privileges

[Parameter]

dwMachineNumber

Currently all machine's No. you want to use.

[Return Value]

If sucessfulthe function returns True, if failed the function returns False.

[Example]

CZKEM1.ClearAdministrators MACHINENUMBER

[Special Consideration]

This function only to be used deletes administrator's privilege, unable to cancel the user who owns administrator privilege.

4.1.1.4 DeleteEnrollData

[Function]

VARIANT_BOOL DeleteEnrollData([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG dwEMachineNumber, [in] LONG dwBackupNumber)

[Purpose]

Delete one user.

[Parameter]

dwMachineNumber

The machine No.

dwEnrollNumber

The user registered No.

dwEMachineNumber

The machine No. you want to operate.

dwBackupNumber

The backup No. more detail see explain.。

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim dwEnrollNumber As Integer
Dim dwEmachineNumber As Integer
Dim dwBackupNumber As Integer

dwEnrollNumber = 1
dwEmachineNumber = 1
dwBackupNumber=0

CZKEM1.DeleteEnrollData MACHINENUMBER, dwEnrollNumber,
dwEmachineNumber, dwBackupNumber
CZKEM1.RefreshData MACHINENUMBER ‘refurbish data.
```

[Special Consideration]

The backup No. apply to assign the user's, who has enrolled more than two, fingerprint template if user want to delete the second fingerprint template which have been enrolled two fingerprint, so the dwBackupNumber is 1, like this, if more than 9 , means 10; password data 11;all fingerprint 12; all fingerprint and password data

4.1.1.5 GetUserInfoByCard

[Proctocol]

VARIANT_BOOL GetUserInfoByCard([in] LONG dwMachineNumber, [in] BSTR * Name, [in] BSTR * Password, [in] LONG * Privilege, [in] VARIANT_BOOL * Enabled)

[Purpose]

Thourgh the card No. get user information.

[Parameter]

Please refer to GetUserInfoByPIN2 function

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim name As String
Dim password As String
Dim privileg As Long
Dim enabled As Boolean
Dim MachineNumber

CZKEM1.CardNumber(0) = 234
MachineNumber = 1
CZKEM1.GetUserInfoByCard MachineNumber, name, password, privileg, enabled
```

4.1.1.6 BeginBatchUpdate

[Function]

BeginBatchUpdate([in] LONG dwMachineNumber,[in] LONG UpdateFlag, [out,retval] VARIANT_BOOL* pVal)

[Purpose]

Start to upload in the batch mode, at present; only ZEM100 series products support this function after 5.11 editions. ZEM200 product will own this function in 2006-9-15 later product. Inspect product depending on the actual situation. Before uploading the user information, the fingerprint template, be sure to perform this function, SDK will store all data temporarily in buffer till all uploading is executed, there are corresponding function BatchUpdate to upload the data to the machine in once time. The efficiency of this function is enormously enhanced than the function SetUserinfo\SetUserTmp in the circle uploading.

[Parameter]

UpdateFlag: Upload lable. 1: Forcefully covers the fingerprint which exists in the machine. 0: Do not cover the fingerprint which already existed. PVal: the return value of the function.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim sqlstr As String
Dim tempUserID As Long
Dim tempdata() As Byte
```

```
Dim tempdataSize As Long
Dim recCount As Long
Dim i As Long
Dim falg As Boolean

tempUserID = 0
i = 0
Set recFPTEST = New Recordset
sqlstr = "select USERID,FINGERID,TEMPLATE3 from TEMPLATE"
recFPTEST.Open sqlstr, connTEST, adOpenKeyset, adLockOptimistic, -1
‘please difine connect cable by youself connTEST
'sqlstr = "select USERID,FINGERID from TEMPLATE"
recCount = recFPTEST.RecordCount

CZKEM1.BeginBatchUpdate 1, 1    ‘batch upload。
While Not recFPTEST.EOF
        If tempUserID <> recFPTEST.Fields("USERID") Then
            falg = CZKEM1.SetUserInfo(CLng(devid),
recFPTEST.Fields("USERID"), "Henry", 0, 0, True) ‘devid device No.。
            tempUserID = recFPTEST.Fields("USERID")
        End If
        tempdataSize = Len(recFPTEST.Fields("TEMPLATE3"))
        ReDim tempdata(tempdataSize) As Byte
        tempdata = recFPTEST.Fields("TEMPLATE3")
        'necessary condition:user must exist
        'if user have a template for this finger id,it will retrun false.do not upload
template.
        flag = CZKEM1.SetUserTmp(CLng(devid), recFPTEST.Fields("USERID"),
recFPTEST.Fields("FINGERID"), tempdata(0))
        i = i + 1
        recFPTEST.MoveNext
        DoEvents
Wend
CZKEM1.BatchUpdate 1     ‘Start batch
CZKEM1.RefreshData CLng(devid)
sqlstr = ""
recFPTEST.Close
```

4.1.1.7 BatchUpdate

[Function]

BatchUpdate([in] LONG dwMachineNumber, [out,retval] VARIANT_BOOL*

pVal)

[Purpose]

Upload the data which is stored in buffer by batch process, please refer to BeginBatchUpdate codeing

[Parameter]

DwMachineNumber: Machine No.

pVal：the Return Vale of function

[Return Value]

Return True for success, otherwise False.

CancelBatchUpdate

[Function]

VARIANT_BOOL CancelBatchUpdate([in]LONG dwMachineNumber)

[Purpose]

Stop the upload mode of batch process, at the same time empty the inner buffer in SDK, which is used to upload by batch process

[Parameters]

dwMachineNumber: machine number

[Return value]

Return True for success, otherwise return False.

[Example]

None

4.1.1.8 ReadAllUserID

[Function]

VARIANT_BOOL ReadAllUserID([in] LONG dwMachineNumber)

[Purpose]

Read in all user information to the Memory of PC，Include user No. password, Name, Card No. etc, excepte the finergerprint template

[Return Value]

Return True for success, otherwise False.

[Example]

Dim userID As Integer

CZKEM1.ReadAllUserID MACHINENUMBER

[Spiecal Consideration]：

After this function performance finish, may transfer function GetAllUserID to obtain the user enrolled No. GetAllUserID ev perform a time, the pointer to aim to user information moves to the next record, when reads the last record, returns to False.

4.1.1.9 GetUserInfoByPIN2

[Function]

VARIANT_BOOL GetUserInfoByPIN2([in] LONG dwMachineNumber, [in] BSTR *

Name, [in] BSTR * Password, [in] LONG * Privilege, [in] VARIANT_BOOL * Enabled)

[Purpose]

Through PIN2 attribut obtain user information

[Parameter]

dwMachineNumber

Machina Name。

Name

User Name

Password

User Password

Privilege

User Privilege

Enabled

Whether the user is forbided or not.

[Return Value]

Return True for success, otherwise False.

[Example]

Dim name As String

Dim password As String

Dim privilege As Integer

Dim enabled As Boolean

czkem1.PIN2=1 'this attribute typt is defined as unsigned long, so now it is unable to support VB

CZKEM1.GetUserInfoByPIN2 MACHINENUMBER, name, password, privilege, enabled

[Special Consideration]:

This function take same responsibility as GetUserInfo, use GetUserInfo to obtain information commonly, PIN2 is user No.

4.1.1.10 GetPIN2

[Function]

VARIANT_BOOL GetPIN2([in] LONG UserID, [in] LONG* PIN2)

[Purpose]

Depend on the No. user enrolled to get PIN2 value.

[Parameter]

UserID

Machine internal coding (2Bytes).

PIN2

More than 5 digital, User ID mark.

[Return Value]

Return True for success, otherwise False.

[Example]

Dim Pin
Dim pin2 As Long
Pin = 1 ‘User No.1
CZKEM1.GetPIN2 Pin, pin2

[Special Consideration]

In the machine the processing user No.(PIN) is 2 byte, so the coding is 5 digital and algorism, for some machine, userNo. is 9 byte coding or following more byte (4 byte), if the uers No. more than 2 byte (9 digital code), then the PIN user is unable to see the coding, this function use PIN to get PIN2.

4..1.1.11 GetUserIDByPIN2

[Protocal]

VARIANT_BOOL GetUserIDByPIN2([in] LONG PIN2, [in] LONG* UserID)

[Purpose]

Via registered user No. get user PIN value. May refer to GetPIN2

[Parameter]

UserID

Assigned No(PIN). when enroll user

PIN2

, the User ID mark, when more than 5 user

[Return Value]

Return True for success, otherwise False.

[Example]

Dim pin2
Dim userID As Long
pin2 = 1
CZKEM1.GetUserIDByPIN2 pin2, userID

[Special Consideration]：

Like as above example，according to user No. 1 (PIN2) to get internal 2 byte coding PIN of machine, because PIN, PIN2 only processed by the interior of machine or SDK, so it isunused commonly, may do not refer to this function, pass over it.

4.1.1.12 GetSMS

[Function]

VARIANT_BOOL GetSMS(LONG dwMachineNumber, LONG ID, LONG* Tag, LONG* ValidMinutes, BSTR* StartTime, BSTR *Content)

[Purpose]

Through the No. get a short piece of message.

[Parameter]

ID

The number of a short piece of message

Tag

Typt of short message , 253 commonality short message, 254 User sshort meassage.

StartTime

Start time to short meassage, the standard time format**,**such as **yyyy-mm-dd hh:ss:mm.**

Content

The content of short message

ValidMinutes

Vaild minutes. The scope of its value is 0-65535, if that permanent is set to 0. SMS always take effecte, SMS vaild hous: StartTime + ValidMinutes, if over this time, the system will not display this SMS

[Return value]

Return True for success, otherwise False.

[Example]

Dim Tag As Long
Dim ValidMinutes As Long
Dim StartTime As String
Dim Content As String
Dim MachineNumber
Dim SMSID
MachineNumber = 1
SMSID = 1
CZKEM1.GetSMS MachineNumber, 1, Tag, ValidMinutes, StartTime, Content.

4.1.1.13 SetSMS

[Function]

VARIANT_BOOL SetSMS([in] LONG dwMachineNumber, [in] LONG ID, [in] LONG Tag, [in] LONG ValidMinutes [in] BSTR StartTime, [in] BSTR content)

[Purpose]

Write short message. If you want to set up personal messaging, tthorugh the function, must make SetUserSMS function to establish the correlation between users and short message.

[Parameter]

ID

The short message number.

Tag

Short message types, 253 public messaging, 254 users short message.

StartTime

Starting time of short Message, format: yyyy-mm-dd hh: ss: mm.

Content

Short Message content.

ValidMinutes

Valid minutes. The scope of its value is 0-65535, if the permanent is set to 0. SMS take effectie: StartTime + ValidMinutes, if over this time, the system will not display this SMS.

[Example]

Dim Tag

```
Dim ValidMinutes
Dim StartTime
Dim Content
Dim MachineNumber
Dim SMSID

MachineNumber = 1
SMSID = 1
Content = "Hello henry"
Tag = 253
StartTime = "2006-12-12 12:00"
ValidMinutes = 15
CZKEM1.SetSMS MachineNumber, SMSID, Tag, ValidMinutes, StartTime, Content
```

[Special Consideration]:

The short message does not comply with user, it independent on, after uploading the sort message; distribute the private short message to user.

4.1.1.14 GetAllUserInfo

[Function]

VARIANT_BOOL GetAllUserInfo([in] LONG dwMachineNumber, [in] LONG *dwEnrollNumber, [in] BSTR * Name, [in] BSTR * Password, [in] LONG * Privilege, [in] VARIANT_BOOL * Enabled)

[Purpose]

Get user's information，read out user's all information，may read user information in sequence from a cycle.

[Parameter]

dwMachineNumber: Machine No. when it is in network connections, this parameter is invoild

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim EnrollNumber As Long
Dim Name As String
Dim pass As String
Dim pri As Long
Dim en As Boolean
Dim MachineNumber
MachineNumber = 1
CZKEM1.ReadAllUserID 1
While CZKEM1.GetAllUserInfo(MachineNumber, EnrollNumber, Name, pass, pri, en)
        DoEvents
```

'Other dispost code

Wend

4.1.1.15 GetAllUserID

[Protocal]

VARIANT_BOOL GetAllUserID([in] LONG dwMachineNumber, [in] LONG* dwEnrollNumber, [in] LONG* dwEMachineNumber, [in] LONG* dwBackupNumber, [in] LONG* dwMachinePrivilege, [in] LONG* dwEnable)

[Purpose]

Obtain all user information.Before the function perform，may use ReadAllUserID to read all user's information into Memory, the function GetAlluserID perform each time, the user information pointer will move to next record. after read all user information .the function return False.

[Parameter]

dwMachinePrivilege

User privilege；0，Common User；1，Enroller；2，administrator；3 .Supper administator

[Return Value]

Return True for success, otherwise False.

[Example]

This function server as GetAllUserInfo，please refer to GetAllUserInfo illustration

[Spiecal Consideration]

The function can use ReadAllUserID to transfer all user information to Memory, than repeat reading user information

4.1.1.16 GetBackupNumber

[Protocal]

LONG GetBackupNumber([in] LONG dwMachineNumber)

[Spiecal Consideration]：

This function is throwed out, invaild.

4.1.1.17 ModifyPrivilege

[Function]

VARIANT_BOOL ModifyPrivilege([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG dwEMachineNumber, [in] LONG dwBackupNumber, [in] LONG dwMachinePrivilege)

[Purpose]

Revise user's privilege.

[Parameter]

dwBackupNumber

The backup No. of fingerprint, now depending on the backup No, it is unable to support to revise some user's fingerprint privilege.

dwMachinePrivilege

User privilege；0，User；1，enroller；2，administrator ；3，Supper Administrator

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim dwEnrollNumber    ' user ID
Dim dwEmachineNumber
Dim dwBackupNumber
Dim dwMachinePrivilege

dwEnrollNumber = 1
dwEmachineNumber = 1
dwBackupNumber = 0
dwMachinePrivilege = 3

CZKEM1.ModifyPrivilege MACHINENUMBER, dwEnrollNumber,
dwEmachineNumber, dwBackupNumber, dwMachinePrivilege
```

4.1.1.18 DeleteSMS

[Function]

VARIANT_BOOL DeleteSMS(LONG dwMachineNumber, [in] LONG ID);

[Purpose]

Delete the short message which correspond some serial No.

[Parameter]

Short meassage ID 。

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim b As Boolean

If CZKEM1.DeleteSMS(vMachineNumber, 1) Then
MsgBox "DeleteSMS OK"
else
    MsbBox "DeleteSMS fail"
End If
```

4.1.1.19 SetUserSMS

[Function]

VARIANT_BOOL SetUserSMS([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG SMSID);

[Purpose]

Set user corresponding shorting message

[Parameter]

dwEnrollNumber：User No.

SMSID： Short message No.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim EnrollNumber
Dim MachineNumber
Dim SMSID

EnrollNumber=1
MachineNumber=1
SMSID=1
CZKEM1.SetUserSMS MachineNumber, EnrollNumber, SMSID
```

4.1.1.20 DeleteUserSMS

[Function]

VARIANT_BOOL SetUserSMS([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG SMSID);

[Purpose]

Delete user corresponding short message.

[Parameter]

dwEnrollNumber：User No.

SMSID：Short message No.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim bFlag As Boolean
Dim SMSID
SMSID=1
If CZKEM1.DeleteSMS(MachineNumber, SMSID) Then
        MsgBox "DeleteSMS OK"
Else
        MsgBox "DeleteSMS fail"
End If
```

4.1.1.21 ClearSMS

[Function]

VARIANT_BOOL ClearSMS([in] LONG dwMachineNumber);

[Purpose]

Clean short message

[Parameter]

dwMachineNumber:machine No.

[Return Value]

Return True for success, otherwise False.

[Exmple]

CZKEM1.ClearSMS MachineNumber

4.1.1.22 ClearUserSMS

[Function]

VARIANT_BOOL ClearUserSMS([in] LONG dwMachineNumber);

[Purpose]

Clean user short message.

[Parameter]

dwMachineNumber:Machine

[Return Value]

Return True for success, otherwise False.

[Example]

CZKEM1.ClearUserSMS MachineNumber

4.1.1.23 SetUserInfoEx

[Function]

SetUserInfoEx([in] LONG dwMachineNumber, [in] long dwEnrollNumber, [in] long VerifyStyle, [in] BYTE* Reserved, [out,retval] VARIANT_BOOL* pVal)

[Purpose]

Upload user verification way or group verification way, this only mulit-verification way provided mchine by be possible to support this function.

[Parameter]

dwEnrollNumber: User serial number.

VerifyStyle: Matching way. The scope to set the user verification routine is 1-15; there are total 15 verification ways. If group's verification way is used, then verification way option is from 129 to 134. The order of the verification way increases by degrees and the order of the machine verification way menu are same.

For TFT screen Access Control fingerprint machine’s values are: 0 means the use of group certification, 128 (FP / PW / RF), 129 (FP), 130 (PIN), 131 (PW),
132 (RF), 133 (FP & RF), 134 (FP / PW), 135 (FP / RF), 136 (PW / RF), 137 (PIN & FP), 138 (FP & PW),
139 (PW & RF), 140 (FP & PW & RF), 141 (PIN & FP & PW), 142 (FP & RF / PIN).

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim aflag As Boolean
Dim reser As Byte
Dim EnrollNumber
Dim VerifyStyle
EnrollNumber=1
VerifyStyle=1
```

```
reser = 0
aflag = CZKEM1.SetUserInfoEx(MachineNumber, EnrollNumber, VerifyStyle, reser)
If aflag = 1 Then
        CZKEM1.RefreshData MachineNumber
        MsgBox "successfully", vbInformation + vbOKOnly, "info"
Else
        MsgBox "fail", vbInformation + vbOKOnly, "info"
End If
```

4.1.1.24 GetUserInfoEx

[Function]

GetUserInfoEx([in] long dwMachineNumber, [in] long dwEnrollNumber, [in,out] LONG* VerifyStyle, [in,out] BYTE* Reserved, [out,retval] VARIANT_BOOL* pVal)

[Purpose]

Obtain user verification way.

[Parameter]

Reser：Keep up parameter, invalid

Please refer to SetUserInfoEx explanation。

[Return value]

Return True for success, otherwise False

[Example]

```
Dim aflag As Boolean
Dim reser As Byte
Dim verifyType As Long
Dim UserID
UserID=1
aflag = CZKEM1.GetUserInfoEx(MachineNumber, UserID, verifyType, reser)
If aflag = 1 Then
        MsgBox "successfully", vbInformation + vbOKOnly, "info"
Else
        MsgBox "fail", vbInformation + vbOKOnly, "info"
End If
```

4.1.1.25 GetStrCardNumber

[Function]

GetStrCardNumber(BSTR* ACardNumber)

[Purpose]

Return the card number with the string style. This purpose is only supported by SDK version 6.0 or the above.

[Parameter]

AcardNumber： Card number.

[Return value]

Return True for success, otherwise return False.

[Example]

```
Dim MachineNumber As Long
Dim UserNo As Long
Dim Privilege As Long
Dim UserName As String
Dim Password As String
Dim CardNo As String
Dim Enabled As Boolean

MachineNumber = 1;
While CZKEM1. GetAllUserInfo(MachineNumber, UserNo, UserName, Password, Privilege, Enabled)
    …
    CZKEM1.GetStrCardNumber(CardNo)
    …
Wend
```

4.1.1.26 SetStrCardNumber

[Function]

SetStrCardNumber(BSTR ACardNumber)

[Purpose]

Set the card number of user with the string style.

[Parameter]

AcardNumber：card number.

[Return value]

Return True if success, otherwise return False.

[Example]

```
Dim CardNo As String
Dim UserName As String
Dim Password As String
Dim Privilege As Long
Dim MachineNumber As Long
Dim Privilege As Long
Dim UserNo As Long
Dim Enabled As Boolean

CardNo = “123456”
UserName = “Tom”
Password = “123”
Privilege = 0
```

MachineNumber = 1

UserNo = 1

Enabled = True

CZKEM1. SetStrCardNumber(CardNo)

CZKEM1. SetUserInfo(MachineNumber, UserNo, UserName, Password, Privilege, Enabled)

4.1.2 Fingerprint management

4.1.2.1 GetUserTmpStr

[Function]

VARIANT_BOOL GetUserTmpStr([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG dwFingerIndex, [out] BSTR* TmpData, [out] LONG * TmpLength)

[Purpose]

obtain fingerprint template information by the character string form.

[Parameter]

dwFingerIndex

Fingerprint Index ， Range is 0-9.

TmpData

Fingerprint template infomation

TmpLength

Fingerprint template length.

[Return value]

Return True for success, otherwise False.

[Example]

```
Dim dwEnrollNumber
Dim dwFingerIndex
Dim tmpData As String 'Finger data of enroll
Dim tmpLength As long

dwEnrollNumber = 1
dwFingerIndex = 0
```

CZKEM1.GetUserTmpStr MACHINENUMBER, dwEnrollNumber,dwFingerIndex, tmpData, tmpLength

[Special Consideration]:

It is better to use this function to get the fingerprint information, it is easy to do so, the character string only code the base 64 of binary system fingerprint template .

4.1.2.2 SetUserTmpStr

[Function]

VARIANT_BOOL SetUserTmpStr([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG dwFingerIndex, [in] BSTR TmpData)

[Purpose]

Write in the fingerprint template by the character string, namely upload the fingerprint template (TmpData) of the user's (dwEnrollNumber) fingerprint template (dwFingerIndex) to connected machine. Note department, the [out] express to transfer out to pareameter, commonly it is a pointer of the function, the [in] express to transfer in parameter. it is a common variable, not pointer

[Parameter]

Please refer to SetUserTmp function note

[Example]

```
Dim dwEnrollNumber
Dim dwFingerIndex
Dim tmpData

dwEnrollNumber = 1
dwFingerIndex = 0

tmpData="ocojg52rWoEOOq1egQw1rEtBFp4uRAESmkBLQRZ0wlLBB21BKUEM
3EIuQTPmKGhBCCm8fEkdw7MnQRE6QCXBC9DDVVEE3Kk3QR0iFjvBDRJAc
kEMz5VggQYbMn1BDy8uKwkNMItPyQ0VL0uBSJozS4FQhR8/ARSDoTHBIl0sIY
EKQKYlghJDoxlBD02aKcERZJwaQRBbhioBKHkRS4EJhyUygVtEozPBPwi4PsEQ
ij5DQQl8HXQJDZtkLBOrMM8LEBHCAgQPFBgPBoHAwgKjrfxTfBfAwgIEDKLa
iZwdwMF1pKzLrMuqIcDBc6WZ693rmJrAwW+km87vzJmCwMFmoa3/DBWjy5q
G"

CZKEM1.SetUserTmpStr MACHINENUMBER, dwEnrollNumber, dwFingerIndex, tmpData.
```

4.1.2.3 DelUserTmp

[Protocal]

VARIANT_BOOL DelUserTmp([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG dwFingerIndex)

[Purpose]

Delete all users' fingerprint template information.

[Parameter]

dwFingerIndex

The fingerprint number the user has enrolled, range 0-9, it mean ten fingers

[Return Value]

Return True for success, otherwise False.

[Example]

Dim dwEnrollNumber As Integer

Dim dwFingerIndex As Integer

dwEnrollNumber = 1

dwFingerIndex = 0

'Cancel the the No. 1 user's the first fingerprint, user No. may be 0-9.'

CZKEM1.DelUserTmp MACHINENUMBER, dwEnrollNumber, dwFingerIndex

[Special Consideration]

This function and DeleteEnrollData have the same purpose.

4.1.2.4 GetEnrollDataStr

[Function]

HRESULT GetEnrollDataStr([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG dwEMachineNumber, [in] LONG dwBackupNumber, [out] LONG* dwMachinePrivilege, [out] BSTR* dwEnrollData, [out] LONG* dwPassWord);

[Purpose]

Obtain user information; include the data of fingerprint template.

[Parameter]

dwEnrollNumber and **dwEMachineNumber** all are machine number。

dwBackupNumber

the Number of backup fingerprint, namely fingerprint index.

DwMachinePrivilege

User privilege。0，Common user，1，Enroller ，2，Administrator ，3，Supper Administrator

DwEnrollData

Fingerprint data, which represent by the character string.

DwPassWord

User password.

[Return value]

Return True for success, otherwise False.

[Example]

Dim dwEnrollNumber

Dim dwEmachineNumber

Dim dwBackupNumber

Dim dwMachinePrivilege As Long

Dim dwEnrollData As String

Dim dwPassWord As Long

Dim MachineNumber

dwBackupNumber = 0

MachineNumber = 1

dwEnrollNumber = 1

dwEmachineNumber = 1

CZKEM1.GetEnrollDataStr MachineNumber, dwEnrollNumber, dwEmachineNumber, dwBackupNumber, dwMachinePrivilege, dwEnrollData, dwPassWord

4.1.2.5 SetEnrollDataStr

[Function]

VARIANT_BOOL SetEnrollDataStr([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG dwEMachineNumber, [in] LONG dwBackupNumber, [in] LONG dwMachinePrivilege, [in] BSTR dwEnrollData, [in] LONG dwPassWord)

[Purpose]

Through character string form write in user‘s fingerprintr template.

[Parameter]

Please refer to SetUserTmp function explaining, its purpose is same as SetUserTmp，internally procedure is alike，SetUserTmp is the newest interface.

[Example]

```
Dim dwEnrollNumber
Dim dwEmachineNumber
Dim dwBackupNumber
Dim dwMachinePrivilege
Dim dwEnrollData
Dim dwPassWord

dwEnrollNumber = 1
dwEmachineNumber = 1
dwBackupNumber = 0
dwMachinePrivilege = 1
dwEnrollData =
"ocojg52rWoEOOq1egQw1rEtBFp4uRAESmkBLQRZ0wlLBB21BKUEM3EIuQTP
mKGhBCCm8fEkdw7MnQRE6QCXBC9DDVVEE3Kk3QR0iFjvBDRJAckEMz5Vg
gQYbMn1BDy8uKwkNMItPyQ0VL0uBSJozS4FQhR8/ARSDoTHBIl0sIYEKQKYlg
hJDoxlBD02aKcERZJwaQRBbhioBKHkRS4EJhyUygVtEozPBPwi4PsEQij5DQQl8
HXQJDZtkLBOrMM8LEBHCAgQPFBgPBoHAwgKjrfxTfBfAwgIEDKLaiZwdwM
F1pKzLrMuqIcDBc6WZ693rmJrAwW+km87vzJmCwMFmoa3/DBWjy5qG"
dwPassWord = 1

CZKEM1.SetEnrollDataStr MACHINENUMBER, dwEnrollNumber,
dwEmachineNumber, dwBackupNumber, dwMachinePrivilege, dwEnrollData,
dwPassWord
```

4.1.2.6 SetUserTmp

[Function]

VARIANT_BOOL SetUserTmp([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG dwFingerIndex, [in] BYTE* TmpData)

[Purpose]

Write in user fingerprint template through binary system(upload to device).

[Parameter]

dwFingerIndex

Indx No. is corresponding with fingerprint.

TmpData

Fingerprint template data, binary system format.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim dwEnrollNumber As Integer
Dim dwFingerIndex As Integer
Dim tmpData(1024) As Byte

dwEnrollNumber = 1
dwFingerIndex = 0
‘tmpData  ‘transfer binary system into this array, E,g read data from dadabase.

CZKEM1.SetUserTmp MACHINENUMBER, dwEnrollNumber, dwFingerIndex,
tmpData(0)
```

[Special Consideration]：

In the Vb 6.0, the binary system array, tmpData(0), meaning transfer address.

4.1.2.7 GetUserTmp

[Function]

VARIANT_BOOL GetUserTmp([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG dwFingerIndex, [in,out] BYTE* TmpData, [in,out] LONG * TmpLength);

[Purpose]

Get user’s fingerprint template information.

[Parameter]

dwEnrollNumber

User enrolled Number.

DwFingerIndex

Fingerprint index, range 0-9.

TmpData

The Byte array of the fingerprint template.

TmpLength

Length of fingerprint template.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim dwEnrollNumber
```

Dim dwFingerIndex
Dim tmpData(1024) As Byte
Dim tmpLength As Long

dwEnrollNumber = 1
dwFingerIndex = 0
CZKEM1.GetUserTmp MachineNumber, dwEnrollNumber, dwFingerIndex, tmpData(0), tmpLength

4.1.2.8 GetEnrollData

[Function]
VARIANT_BOOL GetEnrollData([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG dwEMachineNumber, [in] LONG dwBackupNumber, [out] LONG* dwMachinePrivilege, [out] LONG* dwEnrollData, [out] LONG* dwPassWord)
[Purpose]
Obtain user fingerprint template and password. This function obtains the fingerprint template and the user password by the binary way.

[Parameter]
dwBackupNumber ： Fingerprint index
dwEnrollData：User fingerprint template
Other please refers to the function GetEnrollDataStr explanation.
[Return Value]
Return True for success, otherwise False.
[Example]
please refer to the function GetFPTempLength example.
[Spiecal Consideration]:
This function is the old edition SDK function, may use function GetUserTmpStr\GetUserTmp and etc. to replace it, to gain fingerprint template.

```
Dim dwmachineNumber
Dim dwEnrollNumber
Dim dwEmachineNumber
Dim dwBackupNumber
Dim pri As Long
Dim enrolldata(1024) As Byte
Dim pass As Long
dwmachineNumber = 1
dwEnrollNumber = 1
dwEmachineNumber = 1
dwBackupNumber = 0
CZKEM1.GetEnrollData dwmachineNumber, dwEnrollNumber, dwEmachineNumber,
        dwBackupNumber, pri, enrolldata(0), pass
```

4.1.2.9 SetEnrollData

[Function]

VARIANT_BOOL SetEnrollData([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG dwEMachineNumber, [in] LONG dwBackupNumber, [in] LONG dwMachinePrivilege, [in] LONG* dwEnrollData, [in] LONG dwPassWord)

[Purpose]

For someone , write in (upload) his fingerprint template and password

[Parameter]

dwMachineNumber

Machine No. you want operate.

DwEnrollNumber

User enrolled No.

DwEMachineNumber

Same as dwMachineNumber

DwBackupNumber

Fingerprint backup No. Fingerprint index

dwMachinePrivilege

User privilege

DwEnrollData

Fingerprint data

DwPassWord

User password.

[Return Value]

Return True for success, otherwise False.

[Example]

This function realization is low efficiency than the function SetUserInf and SetUserTmp, may use the function SetUserInfo andSetUserTmp to replace it.

4.1.2.10 ReadAllTemplate

[Function]

VARIANT_BOOL ReadAllTemplate([in] LONG dwMachineNumber)

[Purpose]

Read in all Fingerprint Template to the Memory.

[Parameter]

dwMachineNumber

The machine No. you want to operate.

[Return]

Return True for success, otherwise False.

[Example]

CZKEM1.ReadAllTemplate MACHINENUMBER

[Spiecal Consideration]:

the main purpose of this function is boost up the speed to gain the fingerprint template, make a observable improveance, the user , attendance record, fingerprint template information, and times of communication you gain are a few.

4.1.2.11 FPTempConvertNew

[Function]

VARIANT_BOOL FPTempConvertNew([in] BYTE* TmpData1, [in] BYTE* TmpData2, [in] LONG *Size)

[Purpose]

Convert the fingerprint template collected byBiokey SDK into the new fingerprint template apply to the stardalone machine.

[Parameter]

TmpData1

The template wants to be converted.

TmpData2

Fingerprint template has been converted.

Size

The converted fingerprint fingerprint size.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim tmpData1(1024) As Byte ‘this parameter server as fingerprint template collected by Biokey SDK.
Dim tmpdata2(1024) As Byte
Dim size As Integer
CZKEM1.GetUserTmp MACHINENUMBER, 1, 0, tmpData1(0), size
CZKEM1.FPTempConvertNew tmpData1(0), tmpdata2(0), size
```

[Special Consideration]

Above program illustrate the parameter temDate1 transfer one byte array, the tmpData1(0) is to pass address, namely transfer all binary system variable. Because it is not convenience to process binary system, may use FPtempConvertNewStr function to converte it. The corresponding function, FPTempConvert, will converte the standalone template into Biokey SDK template.

4.1.2.12 FPTempConvertNewStr

[Function]

VARIANT_BOOL FPTempConvertNewStr([in] BSTR TmpData1, [in] BSTR* TmpData2, [in] LONG *Size)

[Purpose]

With character string form, converte BIOKEY SDK template into the new fingerprint template in the standalone machine. Of couse , use Base 64 to code the bainy system fingerprint template, can get this character string(Attention : because every time the finger

push differently, every time the collected fingerprint is different.)

[Parameter]

TmpData1

The template needs to be converte.

TmpData2

The template needs to be converte.

Size

The size of converted template.

[Return Value]

Return True for success, otherwise False.

[Example]

Dim tmpData1

Dim tmpdata2 As String

Dim size As Integer

tmpData1="re2df3fd4fsfsfsddfnCTRXERcIQnkA8ghQqLUTCDBikWAIJGdKhTgg
WdMsDECE32o1RIqxm4wf3fwYfsMCNDFWdFDfJosIN"
CZKEM1.FPTempConvertNewStr tmpData1, tmpdata2, size

4.1.2.13 FPTempConvertStr

[Function]

VARIANT_BOOL FPTempConvertStr([in] BSTR TmpData1, [in] BSTR* TmpData2, [in] LONG *Size)

[Purpose]

With character string form, converte the fingerprint template in the standalone machine into BIOKEYSDK template.

[Parameter]

TmpData1

The template needs to be converte.

TmpData2

The template needs to be converte.

Size

The size of converted templates.

[Return Value]

Return True for success, otherwise False.

[Example]

Dim tmpData1

Dim tmpdata2 As String

Dim size As Integer

tmpData1 = "
ocojg52rWoEOOq1egQw1rEtBFp4uRAESmkBLQRZ0wlLBB21BKUEM3EIuQTPm
KGhBCCm8fEkdw7MnQRE6QCXBC9DDVVEE3Kk3QR0iFjvBDRJAckEMz5Vgg

QYbMn1BDy8uKwkNMItPyQ0VL0uBSJozS4FQhR8/ARSDoTHBIl0sIYEKQKYlgh
JDoxlBD02aKcERZJwaQRBbhioBKHkRS4EJhyUygVtEozPBPwi4PsEQij5DQQl8H
XQJDZtkLBOrMM8LEBHCAgQPFBgPBoHAwgKjrfxTfBfAwgIEDKLaiZwdwMF1
pKzLrMuqIcDBc6WZ693rmJrAwW+km87vzJmCwMFmoa3/DBWjy5qG "

CZKEM1.FPTempConvertStr tmpData1, tmpdata2, size

4.1.2.14 FPTempConvert

[Function]
VARIANT_BOOL FPTempConvert([in] BYTE* TmpData1, [in] BYTE* TmpData2, [in] LONG *Size)
[Purpose]
Converte the fingerprint templates which are in the standalone fingerprint machine into the BIOKEYSDK template.
[Parameter]
TmpData1
The template needs to be converte.
TmpData2
The template needs to be converte.
Size
The size of converted templates
[Return Value]
Return True for success, otherwise False.
[Example]
Please refer to FPTempConvertNew example.

4.1.2.15 GetFPTempLengthStr

[Function]
LONG GetFPTempLengthStr([in] BSTR dwEnrollData)
[Purpose]
Get the size of fingerprint template, use binary sytem to count fingerprint template, the character string length does not ability to measure fingerprint template length.
[Parameter]
dwEnrollData
Someone fingerprint tamplate.
[Return Value]
The size of fingerpint.
[Example]
Dim TmpData1
Dim templen As Long
TmpData1 =
"ocojg52rWoEOOq1egQw1rEtBFp4uRAESmkBLQRZ0wlLBB21BKUEM3EIuQTP
mKGhBCCm8fEkdw7MnQRE6QCXBC9DDVVEE3Kk3QR0iFjvBDRJAckEMz5Vg

gQYbMn1BDy8uKwkNMItPyQ0VL0uBSJozS4FQhR8/ARSDoTHBIl0sIYEKQKYlg
hJDoxlBD02aKcERZJwaQRBbhioBKHkRS4EJhyUygVtEozPBPwi4PsEQij5DQQl8
HXQJDZtkLBOrMM8LEBHCAgQPFBgPBoHAwgKjrfxTfBfAwgIEDKLaiZwdwM
F1pKzLrMuqIcDBc6WZ693rmJrAwW+km87vzJmCwMFmoa3/DBWjy5qG"
templen = CZKEM1.GetFPTempLengthStr(TmpData1)

4.1.2.16 GetFPTempLength

[Protocal]
LONG GetFPTempLength([in] BYTE* dwEnrollData)
[Purpose]
Obtain the langth of the fingerprint template.
[Parameter]
dwEnrollData
Fingerprint template
[Return Value]
The length of fingerprint length
[Example]
Dim length as Long
Dim glngEnrollData(1024) 'here need to appoint to this variable
length = CZKEM1.GetFPTempLength(glngEnrollData(0))

4.1.3 Management record

The record main include follow attendance record and management record, these recodes only can be downloaded, to download it is unviable, the mode between downloading attendance record and management record is same with, read in all record to memory firstly, than, read out each record.

4.1.3.1 ReadSuperLogData

[Function]
VARIANT_BOOL ReadSuperLogData([in] LONG dwMachineNumber)
[Purpose]
Read in all management record 三 to the Memory
[Parameter]
dwMachineNumber
The machine No. you want to operate.
[Return Value]
Return True for success, otherwise False.
[Example]
CZKEM1.ReadSuperLogData MACHINENUMBER

4.1.3.2 ReadGeneralLogData

[Function]

VARIANT_BOOL ReadGeneralLogData([in] LONG dwMachineNumber)

[Purpose]

Read in all attendance record to the Memory.

[Parameter]

dwMachineNumber

The machine No. you want to operate.

[Return Value]

Return True for success, otherwise False.

[Example]

CZKEM1.ReadGeneralLogData MACHINENUMBER

4.1.3.3 GetGeneralLogDataStr

[Function]

VARIANT_BOOL GetGeneralLogDataStr([in] LONG dwMachineNumber, [out] LONG* dwEnrollNumber, [out] LONG* dwVerifyMode, [out] LONG* dwInOutMode, [out] BSTR *TimeStr);

[Purpose]

Obtain a date of attendance logs from PC Memory, when this function performs its obligations each time, the pointer of storeage record in the Memory move to next digit, when obtain record, and read all attendance record from the machine, because the attendance record comparatively is a few. After reading, use this function to get all attendance record, when the pointer of attendance record in the Memory move to last digit, this function return Value is False.

[Parameter]

dwVerifyMode

Matching Mode，its description as follow：

Value	**Description**
1	Fingerprint
0	Password

dwInOutMode

Time&Attendance state，its description as follow：

Value	Description
0	On duty
1	Off duty
2	Check-out
3	Check-out back
4	Overtime check-in
5	Overtime check out

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim dwEnrollNumber As LONG
Dim dwVerifyMode As LONG
Dim dwInOutMode As LONG
Dim timeStr As String
Dim i As Long

CZKEM1.ReadAllGLogData machineNumber
i = i + 1
while CZKEM1.GetGeneralLogDataStr(machineNumber, dwEnrollNumber,
dwVerifyMode, dwInOutMode, timeStr)
MsgBox "get success " & i & " times"
    i = i + 1
Wend
```

4.1.3.4 GetSuperLogData

[Function]

VARIANT_BOOL GetSuperLogData([in] LONG dwMachineNumber, [in] LONG* dwTMachineNumber, [in] LONG* dwSEnrollNumber, [in] LONG* Params4, [in] LONG* Params1, [in] LONG* Params2, [in] LONG* dwManipulation, [in] LONG* Params3, [in] LONG* dwYear, [in] LONG* dwMonth, [in] LONG* dwDay, [in] LONG* dwHour, [in] LONG* dwMinute)

[Purpose]

Obtain one data of management log from the PC Memory one by one, Like as read attendance record , all user, may use the function ReadSuperLogData to get all management record. If this function performs one time, the pointer will point to next record.

[Parameter]

Params4

Aims at the pointer of the long variable, this variable accept the number value of administrator registration machine which perform the management operation

Params1

Aims at the pointer of the long variable, this variable accept the register number value of the management operation object. If the operation object is a terminal itself (namely management operation is to revise terminal system information), this parameter value is 0

Params2

Aims at the pointer of the long variable, this variable accept the number value of the registration machine of the management operation object. If the operation object is the terminal itself (namely the managemen operation is to revise terminal system information t), this parameter value is 0

Params3

Keep down field, invalid

dwManipulation

Aims at the pointer of the long variable, this variable receive the type value of the management operation which carries in the terminal. The type value to Management operation, which explanation as follows:

The value	Describes
0	Turn on machine
1	Turn off machine
2	Failed to authentication warn
3	Anti- dismantle warn
4	Enter menu
5	Change Option
6	Backup to enroll fingerprint
7	Add Password
8	To register the HID card
9	Delete User
10	Delete fingerprint
11	Delete Password
12	Delete RF Card
13	Clean data
14	Create MF Card
15	Enroll MF Card
16	Register MF Card
17	Delete MF card registerd
18	Clean MF Card content
19	Transfer the registration data into the card
20	Capy data in the card to the standardalone fingerprint machine
21	Set the time of the Standalone fingerprint machine
22	restore the leaving- factory option
23	Clean attendance (check-in ,out) record
24	Clean administrator privilege
25	Revise Access Control option
26	Revise User Access Control option
27	Revise Time Zone of Access Control option
28	Revise Unlock Combin
29	Unlock
30	Enroll User

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim dwTMachineNumber As Integer
```

```
Dim dwSenrollNumber As Integer
Dim params4 As Integer
Dim params1 As Integer
Dim params2 As Integer
Dim dwManipulation As Integer
Dim params3 As Integer
Dim dwYear As Integer
Dim dwMonth As Integer
Dim dwDay As Integer
Dim dwHour As Integer
Dim dwMinute As Integer
Dim i As Long
'dwTMachineNumber = 1
dwSenrollNumber = 1

CZKEM1.ReadAllSLogData machineNumber
i = 1
While CZKEM1.GetSuperLogData(machineNumber, dwTMachineNumber,
dwSenrollNumber, params4, params1, params2, dwManipulation, params3, dwYear,
dwMonth, dwDay, dwHour, dwMinute)
MsgBox "Get super log successful " & i & " times"
        i = i + 1
Wend
```

4.1.3.5 GetAllSLogData

[Function]

VARIANT_BOOL GetAllSLogData([in] LONG dwMachineNumber, [in] LONG* dwTMachineNumber, [in] LONG* dwSEnrollNumber, [in] LONG* Params4, [in] LONG* Params1, [in] LONG* Params2, [in] LONG* dwManipulation, [in] LONG* Params3, [in] LONG* dwYear, [in] LONG* dwMonth, [in] LONG* dwDay, [in] LONG* dwHour, [in] LONG* dwMinute)

[Purpose]

Read out management record from the Memory of PC, this management record in the Memory is readed out by the function ReadAllSLogData, it server as the function GetSuperLogData，only the name of interface is different .

[Parameter]

Please refer to function GetSuperLogData explanation。

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim dwTMachineNumber
Dim dwSenrollNumber As Long
Dim params4 As Long
```

```
Dim params1 As Long
Dim params2 As Long
Dim dwManipulation As Long
Dim params3 As Long
Dim dwYear As Long
Dim dwMonth As Long
Dim dwDay As Long
Dim dwHour As Long
Dim dwMinute As Long
Dim i As Long

CZKEM1.ReadAllSLogData MachineNumber
i = 1
While CZKEM1.GetAllSLogData(MachineNumber, dwTMachineNumber,
dwSenrollNumber, params4, params1, params2, dwManipulation, params3, dwYear,
dwMonth, dwDay, dwHour, dwMinute)
    DoEvents
    i = i + 1
Wend
```

4.1.3.6 GetAllGLogData

[Function]

VARIANT_BOOL GetAllGLogData([in] LONG dwMachineNumber,[in] LONG* dwTMachineNumber, [in] LONG* dwEnrollNumber, [in] LONG* dwEMachineNumber, [in] LONG* dwVerifyMode, [in] LONG* dwInOutMode, [in] LONG* dwYear, [in] LONG* dwMonth, [in] LONG* dwDay, [in] LONG* dwHour, [in] LONG* dwMinute)

[Purpose]

Reads out the attendance record from the computer, and the attendance record is readed in the Memory by the function ReadAllGLogData, This function perform a time every time, the attendance recording pointer moves to the next record, after readsing the records, the function returns to False. This function function and GetGeneralLogDataStr are completely same, the realization is same.

[Parameter].

dwEnrollNumber

User enrolled Number

dwEMachineNumber

dwEMachineNumber and dwMachineNumber are same.

dwVerifyMode

Match mode，0：Password verification 1：Fingerprint Verification, the card verification think as password verification . here there are not the difference

dwInOutMode

Attendance type. May refer to the function GetGeneralLogDataStr explanation.

4.1.3.7 ReadAllSLogData

[Function]

VARIANT_BOOL ReadAllSLogData([in] LONG dwMachineNumber)

[Purpose]

Read in all management record to the Memory，server as the function ReadSuperLogData,please refer to

4.1.3.8 ReadAllGLogData

[Function]

VARIANT_BOOL ReadAllGLogData([in] LONG dwMachineNumber)

[Purpose]

Read in all attendance record to the Memory. It serves as the function ReadGeneralLogDat, please refer to this function explanation, for compatible.

4.1.3.9 ClearSLog

[Function]

VARIANT_BOOL ClearSLog([in] LONG dwMachineNumber)

[Purpose]

Clean all administrator logs.

[Parameter]

dwMachineNumber

Currently all machine's No. you want to operate.

[Return Value]

Return True for success, otherwise False.

[Example]

CZKEM1.ClearSLog MACHINENUMBER

4.1.3.10 GetGeneralExtLogData

[Function]

VARIANT_BOOL GetGeneralExtLogData([in] LONG dwMachineNumber, [in,out] LONG* dwEnrollNumber, [in,out] LONG* dwVerifyMode, [in,out] LONG* dwInOutMode, [in,out] LONG* dwYear, [in,out] LONG* dwMonth, [in,out] LONG* dwDay, [in,out] LONG* dwHour, [in,out] LONG* dwMinute, [in,out] LONG* dwSecond, [in,out] LONG* dwWorkCode, [in,out] LONG* dwReserved)

[Purpose]

The downloading attendance record, is a enhancing function of the function GetGeneralLogData, but it compatible with GetGeneralLogData. Some machines have the WorkCode function; this function may gain the inputted WorkCode. when user verifiy fingerprint

[Parameter]

dwWorkCode：User inputs WorkCode value when he place finger. If the WorkCode does not exsit, then returns to 0.

dwReserved：In order to retain the parameter, invalid.

For other parameters please refer to the function GetGeneralLogData\GetGeneralLogData showing.

[Return Value]

Return True for success, otherwise False.

4.1.4 System Data management

4.1.4.1 BackupData

[Function]

VARIANT_BOOL BackupData([in] BSTR DataFile)

[Purpose]

Store user's information, fingerprint, recorder etc. by file formats, this function only supports ZEM 100 seial products

[Parameters]

DataFile

Save name of the file path, with disc lable, E.g "c:\aaa.bak" .

[Return Values]

If sucessfulthe function returns True, if failed the function returns False.

[Example]

//Be sure the fingerprint machine has been connected with PC , while all function carry on.

```
Dim dataFile
dataFile = "c:\AAA.bak"
CZKEM1.BackupData dataFile
```

[Special Consideration]

This function may to be used along with RestoreData.

4.1.4.2 RestoreData

[Function]

VARIANT_BOOL RestoreData([in] BSTR DataFile)

[Purpose]

Restore the machine's data from the backuped file, this function onky support ZEM100 seial products (such A1, A2, F7 etc.)

[Parameter]

DataFile

Data File is a backup file, which is backuped by the function BackupData.E,g C:\xxx.bak.

[Return Value]

If sucessfulthe function returns True, if failed the function returns False.

[Example]

```
Dim dataFile
```

dataFile = "c:\AAA.bat"

CZKEM1.BackupData dataFile

[Special Consideration]：

If with serial port communication, it will take more time while restore machine data, pleae take pains for waiting.

4.1.4.3 ClearKeeperData

[Protrocol]

VARIANT_BOOL ClearKeeperData([in] LONG dwMachineNumber)

[Purpose]

Clear all data in the standalone fingerprint machine, such as user information, fingerprints, attendance logs, management record.

[Parameter]

dwMachineNumber

Currently all machine's No. you want to operate.

[Return Value]

Return True for success, otherwise False.

[Example]

CZKEM1.ClearKeeperData MACHINENUMBER

[Special Consideration]

Because as the operation maybe arising of loss all data in the standalone machine, be careful to use it.

4.1.4.4 ClearGLog

[Function]

VARIANT_BOOL ClearGLog([in] LONG dwMachineNumber)

[Purpose]

Clean all attendance logs.

[Parameter]

dwMachineNumber

Currently all machine's No. you want to operate.

[Return Value]

Return True for success, otherwise False.

[Exampe]

CZKEM1.ClearGLog MACHINENUMBER

4.1.1.4 PINWidth

[Function]

LONG PINWidth()

[Purpose]

Obtain the most length of user enroll number, this is a attribute, the most user No. is five algorism. Or more than 5digit, such as 9 digit

[Return value]

Return the most length of user enrolled No.

[Example]

```
Dim tmpWidth As Integer
tmpWidth = CZKEM1.PINWidth()
```

4.1.1.5 RefreshData

[Function]

VARIANT_BOOL RefreshData([in] LONG dwMachineNumber)

[Purpose]

Refresh data.

[Return Value]

Return True for success, otherwise False.

[Example]

```
CZKEM1.RefreshData MACHINENUMBER
```

[Spiecal Consideration]：

After uploading user or fingerprint, transfer it, so all modification will take effect at once, produce synchro result.

4.2 Access Control

4.2.1 ACUnlock

[Protocal]

VARIANT_BOOL ACUnlock([in] LONG dwMachineNumber, [in] LONG Delay)

[Purpose]

Open door， make the controller to export a electric- level to open door, in commonly the fingerprint machine does not control lock, only imform controller to open door.

[Parameter]

dwMachineNumber

The machine No. you want to operate.

Delay

The duration of opening the door.

[Return value]

Return True for success, otherwise False

[Example]

```
Dim delay As Integer 'Delay time
delay = 150
CZKEM1.ACUnlock MACHINENUMBER, delay
```

4.2.2 EnableUser

[Function]

VARIANT_BOOL EnableUser([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG dwEMachineNumber, [in] LONG dwBackupNumber, VARIANT_BOOL bFlag)

[Purpose]

Set the user as a prohibited or permit user.

[Parameter]

dwMachineNumber

The machine No. you want to opeate

DwEnrollNumber

User enrolled No.

DwEMachineNumber

Same as dwMachineNumber，Machine No.

DwBackupNumber

Fingerprint index

BFlag

Whether the user is permit to use, True is able to use, otherwise it is forbided user

[Return Value]

Return True for success, otherwise False

[Example]

```
Dim dwEnrollNumber
Dim dwEmachineNumber
Dim dwBackNumber
Dim bFlag
dwEnrollNumber = 1
dwEmachineNumber = 1
dwBackNumber = 0
bFlag = True
CZKEM1.EnableUser MACHINENUMBER, dwEnrollNumber,
dwEmachineNumber, dwBackNumber, bFlag
```

4.2.3 GetUserTZs

[Function]

VARIANT_BOOL GetUserTZs([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG *TZs)

[Purpose]

Obtain user Time Zone.

[Parameter]

TZs

User Time Zone to open the door, the TZs pointer has three value, which separately store up three Time Zone

[Return Value]

Return True for success, otherwise False

[Example]

```
Dim dwEnrollNumber
Dim tzs(2) As Long
dwEnrollNumber = 1
CZKEM1.GetUserTZs MachineNumber, dwEnrollNumber, tzs(0)
Debug.Print tzs(0), tzs(1), tzs(2)
```

[Spiecal Consideration]:

There are 50 Time Zone in the T&A device, its value is assigned as 00:00 to 23: 59 minute, take the week as the cycles. Which default setup 5 groups, default setup 10 groupings combinations, the group or the user may use the Time Zone that defined by user. The group or user may use each Time Zone of the three Time Zones, the relationship of three Time Zones is or, the user or group have own heself Time Zone, but the user in Access Control machine must belong to someone group. Namely, the entire user and the group use Time Zone, but user Time Zone is first. When user Time Zone Option use group Time Zone or the user three Time Zone Option is all 0 (is spatial), use group Time Zone.

4.2.4 SetUserTZs

[Function]

VARIANT_BOOL SetUserTZs([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG *TZs)

[Purpose]

Set user Time Zone.

[Parameter]

dwEnrollNumber

User enrolling No.

TZs

Time Zone，when the Time Zone is in empty, please use group's option, when the Time Zone is not in empty, user is assigned to option.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim dwEnrollNumber
Dim tzs(2) As Long
dwEnrollNumber = 1
tzs(0) = 1
tzs(1) = 2
tzs(2) = 0
CZKEM1.SetUserTZs MachineNumber, dwEnrollNumber, tzs(0)
CZKEM1.RefreshData MachineNumber
```

4.2.5 GetUserGroup

[Function]

VARIANT_BOOL GetUserGroup([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG *UserGrp)

[Purpose]

Gain the group that user is in.

[Parameter]

UserGrp

The group that user is in.

[Example]

```
Dim dwEnrollNumber
Dim userGrp As Long
dwEnrollNumber = 1
'Obtain the group that user 1 is in
CZKEM1.GetUserGroup MACHINENUMBER, dwEnrollNumber, userGrp
```

4.2.6 SetUserGroup

[Function]

VARIANT_BOOL SetUserGroup([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG UserGrp)

[Purpose]

Set the group which a user belong to. During doing 1:G verification, the user group set by this function will take effect to 1:G verification. Of cause, if the device wants to support 1:G verification. Please refer to the device explanation.

[Parameter]

dwEnrollNumber

User enrolling No**.**

UserGrp

Some one group.

[Return Value]

Return True for success, otherwise False

[Example]

```
Dim dwEnrollNumber
Dim userGrp
dwEnrollNumber = 1
userGrp = 1
CZKEM1.SetUserGroup MACHINENUMBER, dwEnrollNumber, userGrp
```

4.2.7 GetACFun

[Function]

VARIANT_BOOL GetACFun([in] LONG* ACFun)

[Purpose]

Get the time to unlock delayed

[Parmeter

ACFun

How long will be duration to unlock.

[Example]

Dim acFun as Long

CZKEM1.GetACFun acFun

4.2.8 GetTZInfo

[Proctocol]

VARIANT_BOOL GetTZInfo([in] LONG dwMachineNumber, [in] LONG TZIndex, [in] BSTR *TZ)

[Purpose]

Obtain time information.

[Parameter]

dwMachineNumber：fingerprint No.。

TZIndex：Time Zone index。

TZ：Time Zone character string 。

[Return Value]

Return True for success, otherwise False.

[Example]

Dim tzIndex

Dim tz As String

tzIndex = 1

CZKEM1.GetTZInfo MACHINENUMBER, tzIndex, tz ‘may view the format of following characte string

Debug.Pint tz

‘such as 0100235900002359000023590000235900002359000023590000235900002359

‘Set starting time and ending timein the Time Zone, like this item is from 09:00to 14:00, may write this item as 09001400, total 8 character, you can know that the time format is 24hour, the Time Zone start at the weekend, follow this rule, we can kwon that each Time Zone consist from 8*7 charact, depending on this format you can analyse Time Zone.

4.2.9 SetTZInfo

[Function]

VARIANT_BOOL SetTZInfo([in] LONG dwMachineNumber, [in] LONG TZIndex, [in] BSTR TZ)

[Purpose]

Set Time Zone for the group.

[Parameter]

TZIndex

Group index

TZ

Please refer to GetTZInfo about Time Zone, Format explanation.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim tzIndex
Dim tz
tzIndex = 1
tz = "0100235900002359000023590000235900002359000023590000235900002359"
CZKEM1.SetTZInfo MACHINENUMBER, tzIndex, tz
```

4.2.10 GetUnlockGroups

[Function]

VARIANT_BOOL GetUnlockGroups([in] LONG dwMachineNumber, [in] BSTR *Grps)

[Purpose]

Obtain the information about unlock combine.

[Parameter]

dwMachineNumber

Machine No. which is in used.

Grps

information about unlocking Combine, five group. Ten combines, one combine can include five group, each group is divided by symbol ‘’.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim grps As String
CZKEM1.GetUnlockGroups MACHINENUMBER, grps
```

4.2.11 SetUnlockGroups

[Function]

VARIANT_BOOL SetUnlockGroups([in] LONG dwMachineNumber, [in] BSTR Grps)

[Purpose]

[parameter]

Grps

Unlock combine, character string combine, need to set 10 combine, each combine divided by symbols

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim grps
grps = "12:13:14:15:23:24:::"
CZKEM1.SetUnlockGroups MACHINENUMBER, grps
‘such as format 12:13:14:15:23:24:::    if there are not combine of the option, there
```

is not characte after the symbol ‘’.General means : 1,2 group combine，1，3group combine. 1，4groupcombine. 1，5group combine,2，3 group combine. 2，4group combine. Follow combine is empty, namely there is not combine of the option.

4.2.12 GetGroupTZs

[Function]

VARIANT_BOOL GetGroupTZs([in] LONG dwMachineNumber, [in] LONG GroupIndex, [in] LONG *TZs)

[Purpose]

Obtain group Time Zone.

[Parameter]

GroupIndex

Grop Time Zon

TZs

Group Time Zone, there are three Time Zone.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim groupIndex
Dim tzs(2) As Long
groupIndex = 1
CZKEM1.GetGroupTZs MACHINENUMBER, groupIndex, tzs
```

4.2.13 SetGroupTZStr

[Function]

VARIANT_BOOL SetGroupTZs([in] LONG dwMachineNumber, [in] LONG GroupIndex, [in] BSTR *TZs)

[Purpose]

Obtain group used Time Zone through charact string.

[Parameter]

GroupIndex

Group index

TZs

Time Zone character string, if there is not Time Zone, Use the symbol ‘’ to divide this Time Zone.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim groupIndex
Dim tzs

groupIndex = 1
tzs = "1:2:3" ‘Use Group 1 time 1，2，3.
```

CZKEM1.SetGroupTZs MACHINENUMBER, groupIndex, tzs

4.2.14 GetGroupTZStr

[Function]

VARIANT_BOOL GetGroupTZStr([in] LONG dwMachineNumber, [in] LONG GroupIndex, [in] BSTR *TZs)

[Purpose]

Obtain group Time Zone.

[parameter]

GroupIndex

Group index

TZs

Time Zone is used by group, Use the symbol ‘ ‘ to divide this Time Zone.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim groupIndex
Dim tzs As String
groupIndex = 1
CZKEM1.GetGroupTZStr MACHINENUMBER, groupIndex, tzs
```

4.2.15 SetGroupTZStr

[Function]

VARIANT_BOOL SetGroupTZStr([in] LONG dwMachineNumber, [in] LONG GroupIndex, [in] BSTR TZs)

[Purpose]

Set Group Time Zone

[Parameter]

Please refer to GetGroupTZStr，TZs is a Time Zone character string Use the symbol ‘ ‘ to divide this Time Zone.

[Return value

Return True for success, otherwise False.

[Example]

```
Dim groupIndex
Dim tzs
groupIndex = 1
tzs = "1:2:3"
CZKEM1.SetGroupTZStr MACHINENUMBER, groupIndex, tzs
```

4.2.16 GetUserTZStr

[Potocol]

VARIANT_BOOL GetUserTZStr([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] BSTR *TZs)

[Purpose]

Get user's Time Zone

[Parameter]

dwEnrollNumber

User Enrolled No.

TZs

User's unlocking Time Zone. Their format is:

TFT secreen Access Control machine: X1: X2: X3: X4, X1 = 1 whether use the group self defined Time Zone, The empty means the use of the the group Time Zone. X2, X3, X4 present that number of the used Time Zone. For example, a user A use the self-defined Time Zone 1,2, then the returned value of the fingerprint machine is: "1:1:2:"

Black-and-white screen Access Control: X1: X2: X3; X1, X2, X3 means the numbers of the used self-defined Time Zone. Users make a judgment for whether or not use group Time Zone, please use UseGroupTimeZone function return values to judge. For example, a Use A use the self-defined Time Zone 1,2,3, then the returned value of the fingerprint amchine is: "1:2:3.

[Example]

```
Dim dwEnrollNumber
Dim tzs As String
dwEnrollNumber = 1
CZKEM1.GetUserTZs machineNumber, dwEnrollNumber, tzs
```

4.2.17 SetUserTZStr

[Function]

VARIANT_BOOL SetUserTZStr([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] BSTR TZs)

[Purpose]

Set user 's Time Zone, Use the symbol ' ' to divide this Tzs Time Zone

[Parameter]

Please refer to SetUserTZ

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim dwEnrollNumber As Integer
Dim tzs
dwEnrollNumber = 1
```

// may select a Time Zone from 50 Time Zone randomly, and assign it to somone user
tzs = "1:2:3"
'Retrun true success else false
CZKEM1.SetUserTZStr MACHINENUMBER, dwEnrollNumber, tzs

/ /Take a Examples with TFT screen Access Control Machine
Dim MachineNumber As Integer
Dim strTzs As String
Dim UserNo As Integer
MachineNumber = 1
UserNo = 1
StrTzs = "1:2:3:1" //set up user-defined Time Zone 1,2,3.
//StrTzs = "1:2:3:0" set up user-defined Time Zone as 1, 2, 3, but this user use the Time //Zone of the user group, Do not use self defined Time Zone
Czkem1.SetUserTZStr (MachineNumber, UserNo, strTzs)

4.2.18 GetDoorState

[Function]
GetDoorState(LONG MachineNumber, [in,out] LONG* State, [out,retval] VARIANT_BOOL* pVal)
[Purpose]
Obtain door sensor state.
[Parameter]
State: Door state。1：Open the door。0：Close the door.
[Return Value]
Return True for success, otherwise False.
[Example]
Dim State As Long
CZKEM1.GetDoorState MACHINENUMBER, State

4.2.19 UseGroupTimeZone

[Function]
UseGroupTimeZone (Void)
[Propuse]
It is used to judge that user whether use the Group Time Zone, unless this function worke with the function GetUserTZs or GetGroupTZStr together. return the correct value.
[Return Value]
Return True if the UseGroup Time Zone has been used, otherwise False.
[Example]
Dim UseGroupFlag As Boolean
Dim MachineNumber As Long
Dim GroupIndex As Long

Dim strTime As String
MachineNumber = 1
GroupIndex = 1
CZKEM1.GetGroupTZStr(MachineNumber, GroupIndex, strTime)
UseGroupFlag = CZKEM1.UseGroupTimeZone()

4.3 Machine Option

4.3.1 Beep

[Function]
VARIANT_BOOL Beep([in] LONG DelayMS)
[Purpose]0
Make machine bell to ring
[Parameter]
DelayMS
How long will the bell ring duration
[Return Value]
Return True for success, otherwise False.
[Example]
Dim delayMs As Integer 'Delay time
delayMs = 150
CZKEM1.Beep delayMs

4.3.2 ClearLCD

[Function]
VARIANT_BOOL ClearLCD()
[Purpose]
Clean Screen，clear the character on the screen, because of after clearing screen, this second dot(:) is unable to be cleared , may use the function EnableClock to stop or restart its glint, to get a field you want to write.
[Return Value]
Return True for success, otherwise False.
[Example]
CZKEM1.ClearLCD 'Clear scr

4.3.3 Connect_Com

[Function]
VARIANT_BOOL Connect_Com([in] LONG ComPort, [in] LONG MachineNumber, [in] LONG BaudRate)
[Purpose]
Connect with PC from Pc serial Port. This function applies to RS232/RS 485 together.

[Parameter]

ComPort

Serial Port No.

MachineNumber

Machine no.

BaudRate

BaudRate

[Return Value]

Return True for success, otherwise False.

[Example]

```
CZKEM1.Connect_Com MACHINECOM, MACHINENUMBER, RATE 'Connect with machine
CZKEM1.Beep (150) 'Make machine beep
CZKEM1.EnableDevice MACHINENUMBER, False 'Make machine in working state
```

4.3.4 Connect_Net

[Function]

VARIANT_BOOL Connect_Net([in] BSTR IPAdd, [in] LONG Port)

[Purpose]

Appoint IP address to connect with machine, create network by the fingerprint machine.

[Parameter]

IPAdd

IP address of the machine，ability to set it by the machine keypad or the function SetDeviceIP.

Port

Port No. , commonly it is 4370.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim ipAdd
Dim port As Integer
Dim flag As Boolean
ipAdd = "192.168.1.159"
port = 4370
flag = CZKEM1.Connect_Net(ipAdd, port)
If flag = True Then
    CZKEM1.EnableDevice MACHINENUMBER, False
End If
```

After performing the connection function , return the wrong number that express meaning as follows：

-1 Fail to add communication support libraries.

-2 Fail to blind port.

-5 Fail to create thread.

-6 Fail to pass the authentication,it is possibility to have the password.

-7 Order has not get the response.

4.3.5 DisableDeviceWithTimeOut

[Function]

VARIANT_BOOL DisableDeviceWithTimeOut([in] LONG dwMachineNumber,[in] LONG TimeOutSec)

[Purpose]

Set the time length that the machine is under the active status (overtime time length).

[Parameter]

TimeOutSec

The time length that is under the active status, the unit is second.

[Return value]

Return True for success, otherwise False.

[Example]

```
Dim timeOutSec As Integer
timeOutSec = 1200
CZKEM1.DisableDeviceWithTimeOut MACHINENUMBER, timeOutSec
```

[Spiecal Consideration]

After connecting the machine, in order to improve the communication efficiency, keep the data consistent or avoid a fault occuring, and ensure the machine is in the working status; when the set length of overtime is coming, the machine will restore to the normal status, and cancel ‘working…’ status.

4.3.6 Disconnect

[Function]

Disconnect (void)

[Purpose]

Disconnection, SDK control automatically release resources.

[Example]

```
CZKEM1.EnableDevice MACHINENUMBER, True
CZKEM1.Beep (150) 'Make machine beep
CZKEM1.Disconnect 'Disconnect with machine
```

4.3.7 EnableDevice

[Function]

EnableDevice（[in] LONG dwMachineNumber，[in] VARIANT_BOOL Enabled）

[Purpose]

Be sure the machine is in the active or shutdown status.

[Parameter]

dwMachineNumber

operates machine number

Enabled

If it is true, then it is in the active status. Otherwise it is in the shutdown state, will shield the periphery keyboard, fingerprint sensor and so on

[Example]

CZKEM1.EnableDevice MACHINENUMBER, True

4.3.8 EnableClock

[Function]

VARIANT_BOOL EnableClock([in] LONG Enabled)

[Purpose]

Make the machine clock to stop or move, the ': ' display in the liquid crystal screen, Cannot flash.

[parameter]

Enabled

If the function is True, then the clock is at the active status, otherwise it is in stagnating (does not glitter).

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim enabled As Boolean
enabled = False
CZKEM1.EnableClock enabled
```

4.3.9 GetDeviceStatus

[Function]

VARIANT_BOOL GetDeviceStatus([in] LONG dwMachineNumber, [in] LONG dwStatus, [in] LONG* dwValue)

[Purpose]

Obtains the canned data of the machine, like manager count, registried user count, template count and so on

[Parameter]

dwMachineNumber

The machine number you operate.

DwStatus

Must obtain the condition type of the machine, description as follows:

The value	The description
1	Administrator Count
2	Register users Count

3 Fingerprint template Count

4 Password Count

5 The record number of times which administrator perform management.

6 Attendance records number of times.

7 Fingerprint capacity.

8 User's capacity

9 Recording capacity

DwValue

Obtain the value which describes by DwStatus.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim dwStatus As Integer
Dim dwValue As Integer
dwStatu = 1 'Count of administrators
CZKEM1.GetDeviceStatus MACHINENUMBER, dwStatus, dwValue
```

4.3.10 GetDeviceInfo

[Function]

VARIANT_BOOL GetDeviceInfo([in] LONG dwMachineNumber, [in] LONG dwInfo, [in] LONG* dwValue)

[Purpose]

Obtain the option information of the machine, like language, the max record and so on.

[Parameter]

dwMachineNumber

the machine number you want to operate

DwInfo

must obtain the information type of the machine option, description as follows:

Value Description

1. the maximum quantities of managers ;
2. Machines numbers.
3. Language

Value Description

0 English

1 Chinese

2 Korean

4. The time length to automatically shutdown machines, the unit is a minute.
5. The control signal to door lock output.

Value Description

0 Output the control signal to door locks

1 Does not output the control signal to door lock.

6. Warning for attendance records maximun count.
7. Warning for management record maximum count.
8. The least interval between two attendance records
9. Baud rate

Value	Description
0	1200 bps
1	2400 bps
2	4800 bps
3	9600 bps
4	19200 bps
5	38400 bps

10. Parity examine

Value	Description
0	NO examine
1	Even examine
2	Odd Exmine

11. The flag bit to stop

Value	Description
0	1 Bit
1	2 Bit

12. the symbol to divide data,
13. Whether network connection is used
14. Whether RS232 communication is used.
15. Whether RS485 communication is used
16. Whether voice prompt provided
17.Verification speed.
18. Idle time
19. Shutdown time
20. Turn on time
21. Sleep time
22. Automatic bell
23.Comparing threhold
24.Matching threhold
25.1:1 matching threshold.
26. Whether show the score.
27 The quantity of the person to combine which is able to unlock.
28. Whether use the card to verifiy.
29. Network speed
30. Must register the card number
31. The time to keep Machine temporary condition
32. The time to keep input numeral
33. The time to keep Menu
34. Time formate

35. Whether is 1: 1 Matching

[Example]

```
Dim dwInfo As Integer
Dim dwValue As Integer
dwInfo =1
CZKEM1.GetDeviceInfo MACHINENUMBER, dwInfo, dwValue
```

4.3.11 GetWiegandDefine

[Function]

VARIANT_BOOL GetWiegandDefine([in] LONG dwMachineNumber, [in] BSTR *sWiegandDefine)

[Purpose]

Obtain Wiegand formate. The Weigend output of Access Control device consist from machine No.+User No.

[Parameter]

dwMachineNumber

the machine No. you want to operate

SWiegandDefine

Wiegand formate

[Example]

```
Dim sWiegandDefine As String
‘weigend 26,p parity bit，E the bit is occupied by machine No.O the bit is occupied by User No.
‘sWiegandDefine= “PEEEEEEEEEEEEOOOOOOOOOOOOOP”
CZKEM1.GetWiegandDefine MACHINENUMBER, sWiegandDefine
```

4.3.12 GetDeviceIP

[Function]

VARIANT_BOOL GetDeviceIP([in] LONG dwMachineNumber, [in] BSTR *IPAddr)

[Purpose]

Get the IP address of the fingerprint machine

[Parmeter]

IPAddr

IP Address

[Example]

```
Dim ipAddr As String
CZKEM1.GetDeviceIP MACHINENUMBER, ipAddr
```

4.3.13 SetDeviceIP

[Function]

VARIANT_BOL SetDeviceIP([in] LONG dwMachineNumber, [in] BSTR IPAddr)

[Purpose]

Set the IP address of the fingerprint machine.

[parameter]

Please refer to GetDeviceIP

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim ipAddr
Dim flag As Boolean
ipAddr = "192.168.100.173"
flag = CZKEM1.SetDeviceIP(MACHINENUMBER, ipAddr)
```

4.3.14 GetDeviceMAC

[Function]

VARIANT_BOOL GetDeviceMAC([in] LONG dwMachineNumber, [in] BSTR *sMAC)

[Purpose]

Get machine MAC address.

[Parameter]

sMAC

MAC address。

[Return value]

Return True for success, otherwise False.

[Example]

```
Dim sMac As String
CZKEM1.GetDeviceMAC MACHINENUMBER, sMac
```

4.3.15 GetDeviceTime

[Function]

VARIANT_BOOL GetDeviceTime([in] LONG dwMachineNumber, [in] LONG* dwYear, [in] LONG* dwMonth, [in] LONG* dwDay, [in] LONG* dwHour, [in] LONG* dwMinute, [in] LONG* dwSecond)

[Purpose]

Get the time to the fingerprint machine.

[Parameter]

dwYear 、dwMonth 、dwDay 、dwHour、 dwMinute、 dwSecond，Year, Month ,Day, Hour, Minute, Second.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim dwYear As Long
Dim dwMonth As Long
Dim dwHour As Long
Dim dwDay As Long
```

Dim dwMinute As Long
Dim dwSecond As Long
CZKEM1.GetDeviceTime MACHINENUMBER, dwYear, dwMonth, dwDay, dwHour, dwMinute, dwSecond 'Get machine time

4.3.16 GetSerialNumber

[Function]
VARIANT_BOOL GetSerialNumber([in] LONG dwMachineNumber, BSTR* dwSerialNumber)
[Purpose]
Get the serial number of the product.
[Parameter]
dwMachineNumber
The machie you want to operate
dwSerialNumber
the serial number of the product
[Return Value]
Return True for success, otherwise False.
[Example]
Dim dwSerialNumber As String
CZKEM1.GetSerialNumber MACHINENUMBER, dwSerialNumber

4.3.17 GetProductCode

[Function]
VARIANT_BOOL GetProductCode([in] LONG dwMachineNumber, BSTR* lpszProductCode)
[Purpose]
Get the model of the product
[Parameter]
lpszProductCode
product model
[Return value]
Return True for success, otherwise False
[Example]
Dim ipsxProductCode As String
CZKEM1.GetProductCode MACHINENUMBER, ipsxProductCode

4.3.18 GetFirmwareVersion

[Function]
VARIANT_BOOL GetFirmwareVersion([in] LONG dwMachineNumber, [in] BSTR* strVersion)
[Purpose]
Get the firmware version No.

[Parameter]

strVersion

the firmware version No.

[Return value]

Return True for success, otherwise False.

[Example]

Dim strVersion As String

CZKEM1.GetFirmwareVersion MACHINENUMBER, strVersion

4.3.19 GetSDKVersion

[Function]

VARIANT_BOOL GetSDKVersion([in] BSTR* strVersion)

[Purpose]

Get the standalone SDK Version No.

[Parameter]

strVersion

SDK Version No.

[Return value]

Return True for success, otherwise False.

[Example]

Dim strVersion As String

CZKEM1.GetSDKVersion strVersion

4.3.20 PowerOnAllDevice

[Function]

PowerOnAllDevice()

[Purpose

Start up all machine . this function is invalid.

[Return value]

Return True for success, otherwise False.

4.3.21 PowerOffDevice

[Function]

VARIANT_BOOL PowerOffDevice([in] LONG dwMachineNumber)

[Purpose]

Shutdown Machine.

[Parameter]

dwMachineNumber

Machine No.

[Return value]

Return True for success, otherwise False.

[Example]

CZKEM1.PowerOffDevice MACHINENUMBER

4.3.22 PlayVoiceByIndex

[Function]

VARIANT_BOOL PlayVoiceByIndex([in] LONG Index)

[Purpose]

Play voice file accord ing to index.

[Parameter]

Index

Voice index.

[Return value]

Return True for success, otherwise False.

[Example]

Dim i As Integer

i = 1

CZKEM1.PlayVoiceByIndex i

4.3.23 QueryState

[Function]

VARIANT_BOOL QueryState([in] LONG *State)

[Purpose]

Obtain the machine status

[Return value]

Return True for success, otherwise return False

[Parameter]

State

Status value

[Return value]

Return True for success, otherwise return False

Value	Description
0	the waiting status
1	the status of enrolling a fingerprint
2	the status of identifying a fingerprint
3	execute the human-machine interface menu
4	be busy in dealing with the other work
5	the status of waiting to write a card

[Example]

Dim state As Integer

CZKEM1.QueryState state

4.3.24 RestartDevice

[Function]

VARIANT_BOOL RestartDevice([in] LONG dwMachineNumber)

[Purpose]

Restar the machine

[Parameter]

dwMachineNumber

Machine No.

[Return value]

Return True for success, otherwise False.

[Example]

CZKEM1.RestartDevice MACHINENUMBER

4.3.25 SetDeviceInfo

[Function]

VARIANT_BOOL SetDeviceInfo([in] LONG dwMachineNumber, [in] LONG dwInfo, [in] LONG dwValue)

[Purpose]

Set the machine parameter.

[Parameter]

Please refer to the function GetDeviceInfo, which function corresponding each other

[Return value]

Return True for success, otherwise False.

[Example]

Dim dwInfo

Dim dwValue

dwInfo = 35

dwValue = 20

CZKEM1.SetDeviceInfo MACHINENUMBER, dwInfo, dwValue

4.3.26 SetDeviceTime

[Function]

VARIANT_BOOL SetDeviceTime([in] LONG dwMachineNumber)

[Purpose]

Set the time of the machine and the terminal to sync PC.

[Parameter]

dwMachineNumber

the machine No you operate.

[Return value]

Return True for success, otherwise False.

[Example]

CZKEM1.SetDeviceTime MACHINENUMBER 'Set machine time with sys
Note: SetDeviceTime2 is to set the self-defined time of user

4.3.27 SetDeviceTime2

[Function]
VARIANT_BOOL SetDeviceTime2([in] LONG dwMachineNumber, [in] LONG dwYear, [in] LONG dwMonth, [in] LONG dwDay, [in] LONG dwHour, [in] LONG dwMinute, [in] LONG dwSecond)
[Purpose]
Set time ， which puposer like as the function SetDeviceTime.
[Parameter]
Separately mean the machie No. year, month, Day , Hour, minute ,Second.
[Return value]
Return True for success, otherwise False.
[Example]
Dim dwYear
Dim dwMonth
Dim dwDay
Dim dwHour
Dim dwMinute
Dim dwSecond
dwYear = 2008
dwMonth = 8
dwDay = 8
dwHour = 8
dwMinute = 8
dwSecond = 8
CZKEM1.SetDeviceTime2 MACHINENUMBER, dwYear, dwMonth, dwDay, dwHour, dwMinute, dwSecond

4.3.28 SetDeviceMAC

[Function]
VARIANT_BOOL SetDeviceMAC([in] LONG dwMachineNumber, [in] BSTR sMAC)
[Purpose]
Get the vaule to the Machine MAC
[Parameter]
Please refer toGetDeviceMAC
[Return value]
Return True for success, otherwise False.
[Example]
Dim sMAC
SMAc = "00:50:54:00:0C:FC"
CZKEM1.SetDeviceMAC MACHINENUMBER, sMAC

4.3.29 SetWiegandDefine

[Function]

VARIANT_BOOL SetWiegandDefine([in] LONG dwMachineNumber, [in] BSTR sWiegandDefine)

[Purpose]

Set the Value to Weigend

[Parameter]

Please refer to GetWiegandDefine

[Return value]

Return True for success, otherwise False.

[Example]

```
Dim sWiegandDefine
sWiegandDefine = " PEEEEEEEEEEEEOOOOOOOOOOOOP"
CZKEM1.SetWiegandDefine MACHINENUMBER, sWiegandDefine
```

4.3.30 SetCommPassword

Function]

VARIANT_BOOL SetCommPassword([in] LONG CommKey)

[Purpose]

Set the connection password of SDK, when calling Connect_Net or Connect_Com function to connect the device, system will use this password to connect the device automatically.

[Parameter]

CommKey

Password for communication

[Return value]

Return True for success, otherwise False.

[Example]

```
Dim commkey
commkey = 1234
CZKEM1.SetCommPassword commkey
```

SetDeviceCommPwd

[Function]

VARIANT_BOOL SetDeviceCommPwd([in]LONG dwMachineNumber, [in]LONG CommKey)

[Purpose]

Set the connection password of device. The set connection password can not take effect until the device to be restarted.

[Parameter]

dwMachineNumber: machine number.

CommKey：connection password

[Return value]

Return True for success, otherwise return False.

[Example]

Dim DeviceID

Dim commkey

DeviceID = 1

commkey = 1234

CZKEM1. SetDeviceCommPwd DeviceID, commkey

GetCardFun

VARIANT_BOOL GetCardFun([in]LONG dwMachineNumber, [out]LONG* CardFun)

[Function]

Obtain whether the device has the function of RF card.

[Parameter]

dwMachineNumber: machine number.

CardFun： CardFun returns 0, indicating the device doesn't support RF cards; It returns 1, indicating the device is only a RF card machine; It returns 3, indicating the device supports RF cards.

[Return Value]

Return True for success, otherwise return False.

[Example]

none

4.3.31 UpdateFirmware

[Function]

VARIANT_BOOL UpdateFirmware([in] BSTR FirmwareFile)

[Purpose]

Upgrade the firmware

[Parameter]

FirmwareFile

Firmware name, includes the complete path.

[Return value]

Return True for success, otherwise False.

[Example]

Dim firmwareFile

firmwareFile = "c:\emfw.cfg.cfg"

CZKEM1.UpdateFirmware firmwareFile

4.3.32 WriteLCD

[Function]

VARIANT_BOOL WriteLCD ([in] LONG Row, LONG Col, BSTR Text)

[Purpose]

Display information on the LCD screen

[Parameter]

Row

Begin line

Col

Begin rank

BSTR

Showind Content

[Return value]

Return True for success, otherwise False.

[Example]

```
Dim row As Integer
Dim col As Integer
Dim text
row = 1
col = 1
text = "Hello Beetfuxi pei"
CZKEM1.WriteLCD row, col, text
```

4.4 Others

4.4.1 CaptureImage

[Function]

VARIANT_BOOL CaptureImage([in] VARIANT_BOOL FullImage, [in] LONG *Width, [in] LONG *Height, [in] BYTE *Image,[in] BSTR ImageFile)

[Purpose]

Capture currently the fingerprint image.

[Parameter]

FullImage

If the function True, then returns all the image of fingerprint, otherwise returnsthe minutes of the fingerprint.

Width

Assign the width of fingerprint image, because the image you get is a fix scale image, only assign the width enougth.

Height

Assign the heigh of the image

Image

Store up all images to be captured, through binary format which is stored in the variable, store all data of the image.

ImageFile

Store all fingerprint to be captured throug file format Include file path, such as C:\ ABmP.bmp

[Return value]

Return True for success, otherwise False.

[Example]

```
Dim fullImage
Dim width As Integer
Dim height As Integer
Dim image(1024 * 8) As Byte
Dim imageFile
fullImage = False
width = 88
height = 88
imageFile = "c:\fp1.bmp"
CZKEM1.CaptureImage fullImage, width, height, image(0), imageFile
```

[Spiecal Consideration]

This function only supports series ZEM 100 machine< like as A1.A2, A3, F7 etc.

4.4.2 CancelOperation

[Function]

VARIANT_BOOL CancelOperation() Read only

[Purpose]

Cancel current operation，Such as enrolling user, when perfom this function, the user to enroll will be canceled.

[Return Value]

Return True for success, otherwise False.

[Example]

```
CZKEM1.CancelOperation
```

4.4.3 GetLastError

[Function]

GetLastError([in] LONG* dwErrorCode)

[Purpose]

Get error information

[Parameter]

dwErrorCode

Obtain Error No. Description as follows.

Value	Description
1	**SUCCESSED**
4	**ERR_INVALID_PARAM**
0	**ERR_NO_DATA**
-1	**ERROR_NOT_INIT**
-2	**ERROR_IO**
-3	**ERROR_SIZE**
-4	**ERROR_NO_SPACE**
-100	ERROR_UNSUPPORT

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim errorCode As Long
CZKEM1.GetLastError errorCode
```

4.4.4 StartVerify

[Function]

VARIANT_BOOL StartVerify([in] LONG UserID, [in] LONG FingerID)

[Purpose]

Start 1:1 fingerprint matching

[Parameter]

UserID

User enrolled number

FingerID

Fingerprint index

[Example]

```
Dim UserID As Integer
Dim fingerID    As Integer
UserID = 1
fingerID = 1
CZKEM1.StartVerify UserID, fingered
```

4.4.5 StartEnroll

[Function]

VARIANT_BOOL StartEnroll([in] LONG UserID, [in] LONG FingerID)

[Purpose]

Start to enroll user

[Parameter]

Please refer to the function StartVerify.

[Example]

```
Dim userID As Integer
Dim fingerID As Integer
```

userID = 6
fingerID = 0
CZKEM1.StartEnroll userID, fingered

4.4.6 StartIdentify

[Function]
VARIANT_BOOL StartIdentify()
[Purpose]
Start 1:N matching
[Return Value]
Return True for success, otherwise False.
[Example]
CZKEM1.StartIdentify

4.4.7 GetSensorSN

[Function]
GetSensorSN([in] LONG dwMachineNumber, [in,out] BSTR* SensorSN, [out,retval] VARIANT_BOOL* pVal)
[Purpose]
Get the serial number of the fingerprint sensor, only the ZEM 200 products which adopt U.r.U fingerprint sensor support this function.
[Parameter]
SensorSN：the serial number of the fingerprint
[Return Value]
Return True for success, otherwise False.
[Example]
Dim SensorSN As String
CZKEM1.GetSensorSN MACHINENUMBER, SensorSN

4.4.8 WriteCard

[Function]
WriteCard([in] LONG dwMachineNumber, [in] LONG dwEnrollNumber, [in] LONG dwFingerIndex1, [in] BYTE* TmpData1, [in] LONG dwFingerIndex2, [in] BYTE* TmpData2, [in] LONG dwFingerIndex3, [in] BYTE* TmpData3, [in] LONG dwFingerIndex4, [in] BYTE* TmpData4, [out,retval] VARIANT_BOOL* pVal)
[Purpose]
Inform machine to write in Mifare card. Write some fingerprint template of someone into Mifare card, after performing this order, the prompt to slip card will appear on the machine LCD.

[Parameter]

dwMachineNumber: Machine No.

dwEnrollNumber：User No.

dwFingerIndex1：Fingerprint index1.

TmpData1：Fingerprint Template 2

The content tranrsfered by parameter is someone's fingerprints templates, TepData1 connot empty.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim BWrite As Boolean
Dim UserID
Dim temp1() As Byte 'template 1
Dim temp2() As Byte 'template 2
Dim temp3() As Byte 'template 3
Dim temp4() As Byte 'template 4
UserID=1
    CZKEM1.CancelOperation ‘pay attention, this sentence have no use for performance in some version firmware.
    ‘It is need to assign value to the fingerprint template
BWrite=CZKEM1.WriteCard(MACHINENUMBER,UserID, 0, temp1(0), _
                                                1, temp2(0), _
                                                2, temp3(0), _
                                                3, temp4(0))
    CZKEM1.StartIdentify ‘ Restore machine to default verification state.
```

4.4.9 EmptyCard

[Function]

EmptyCard([in]LONG dwMachineNumber,[out,retval] VARIANT_BOOL* pVal)

[Purpose]

Clear Mifare card

[Example]

```
CZKEM1.EmptyCard MACHINENUMBER
```

5. Event

In SDK, There are richer event which real-time reflect machine state, like when machine verify successfully, acting to warn, pressing key and so on.

5.1 OnAttTransaction

Event prototype as follows：

void OnAttTransaction([in] LONG EnrollNumber, [in] LONG IsInValid, [in] LONG AttState, [in] LONG VerifyMethod, [in] LONG Year, [in] LONG Month, [in] LONG Day, [in] LONG Hour, [in] LONG Minute, [in] LONG Second)

Purpose：

When the fingerprint verify successfully, triggers this event.

Variable meaning：

EnrollNumber: The user number

IsInValid: 0 means invalid record, 1means vaild records . Fingerprint Access Control Machine failed to open the door or case of the Time Zone, the variables will return the invalid value.

VerifyMethod: Matching Way，0，Password.1，fingerprint verification.

Year, Month, Day, Hour, Minute, Second:

5.2 OnFinger

Event prototype as follows：

void OnFinger(void);

Purpose：

When press the finger, trigger this event.

5.3 OnNewUser

Event prototype as follows：

void OnNewUser([in] LONG EnrollNumber);

Purpose：

When press the finger, trigger this event

Variable meaning：

EnrollNumber：The user number

5.4 OnEnrollFinger

Event prototype as follows

void OnEnrollFinger([in] LONG EnrollNumber, [in] LONG FingerIndex, [in] LONG ActionResult, [in] LONG TemplateLength);

Purpose：

When enroll fingerprint successfully, trigger this event

Variable：

EnrollNumber： The user number.

FingerIndex： The fingerprint index operates is cancelled

ActionResult：0，the enrollment is in normal.3，fail to save data .4，fail to enroll

fingerprint.5，the fingerprint is repetition t6，. Operateration is cancelled.

TemplateLength： the length of fingerprint template.

5.5 OnKeyPress

Event prototype as follows：

void OnKeyPress(LONG Key);

Purpose：

When press the keypad, trigger this event.

Variable meaning：

Key: keypad value。

5.6 OnVerify

Event prototype as follows：

HRESULT OnVerify([in] LONG UserID);

Purpose：

When the fingerprint verification is successful, trigger this event

Variable meaning：

UserID: the user number. If this value is less than 0, means that the user does not exist.

5.7 OnFingerFeature

Event prototype as follows：

HRESULT OnFingerFeature([in] LONG Score);

Purpose：

When identify fingerprint, trigger this event.

Variable meaning：

Score:: the fingerprint matching score after verifying the fingerprint.

5.8 OnAlarm

Event prototype as follows：

HRESULT OnAlarm([in] LONG AlarmType,[in] LONG EnrollNumber,[in] LONG Verified);

Purpose：

When the dismantling machine or duress alarm occurs, trigger this event.

Variable meaning：

AlarmType：The type of alarm. The Value is 55: dismantling machine alarm, the value is 58:Miss push alarm, other value is duress alarm.

EnrollNumber:it is zero， and invalid in this place.

Verified：it is zero， and invalid in this place.

5.9 OnHIDNum

Event prototype as follows：

HRESULT OnHIDNum([in] LONG CardNumber);

Purpose：

When slip the card(No. Card) , trigger this event.

Variable meaning：

CardNumber： Card number

5.10 OnWriteCard

Event prototype as follows：

HRESULT OnWriteCard([in] LONG EnrollNumber, [in] LONG ActionResult, [in] LONG Length);

Purpose：

When write Mifare card successfully or be failure, trigger this function。

Variable meaning：

EnrollNumber：User serial number。

ActionResult：Reads in successfully, returns to 0, the failure is the negative value.

Length：the length of the fingerprint template to be writed in.

5.11 OnEmptyCard

Event prototype as follows：

HRESULT OnEmptyCard([in] LONG ActionResult);

Propuse：

When clear the card (Mifare card) ,trigger this event.

ActionResult: When return to zero, clear cards successfully.

5.12 OnAttTransactionEx

Event prototype as follows:

void OnAttTransactionEx([in] BSTR EnrollNumber, [in] LONG IsInValid, [in] LONG AttState, [in] LONG VerifyMethod, [in] LONG Year, [in] LONG Month, [in] LONG Day, [in] LONG Hour, [in] LONG Minute, [in] LONG Second, [in] LONG WorkCode)

Function:

When the fingerprint verifiy successfully, triggers this event. This function only Work Code function on the machine supported, and the machine firmware version is above 6.0 . If this event supports Work Code , TFT screen Fingerprint machine supported available .

Variable meaning:

EnrollNumber

User serial number

IsInValid

0 is invalid value, 1 is valid value, Fingerprint Access Control Machine failed to open the door or case of the Time Zone, the variables will return the invalid value.

AttState

The checking attendance condition, indicated CheckincheckOut and so on, the value scope is 0-5. Surpasses invalid.

VerifyMethod

Matching way, 0, password. 1, fingerprint verification., for The TFT screen fingerprint machine, its returned value is 1-14

0(FP/PW/RF), 1(FP), 2(PIN), 3(PW), 4(RF), 5(FP&RF), 6(FP/PW), 7(FP/RF), 8(PW/RF), 9(PIN&FP), 10(FP&PW),11(PW&RF), 12(FP&PW&RF), 13(PIN&FP&PW), 14(FP&RF/PIN)。

Year, Month, Day, Hour, Minute, Second

WorkCode

Work serial number.

5.13 ReadRTLog

Event prototype as follows:

HRESULT ReadRTLog ([in] LONG dwMachineNumber);

Function:

Obtain real-time event from the machine, waited for triggering the real-time event using the GetRTLogfunction. For example:OnAttTransaction, OnVerify and so on. This function must work with theGetRTLog function together. Before SDK 6.0 version, regard, the machine initiatively sends the real-time event to SDK, this kind triggers the mechanism will be able to cause the communication data error or lose. In order to improve this kind of situation, after SDK6.0 edition, the machine cannot send out on own initiative. If have to want to have the real-time event monitoring, to have can trigger the real-time event through the ReadRTLog function and theGetRTLog function work together.

Regard this function of machine firmware version must be over 6.0above .

Variable meaning:

DwMachineNumber: Machine number

Example:

```
Dim MachineNumber As Long
MachineNumber = 1
If CZKEM1.ReadRTLog (MachineNumber) then
While CZKEM1.GetRTLog (MachineNumber)
Wend
End If
```

After calling the GetRTLog function, SDK can trigger the real-time event.

5.14 GetRTLog

Event prototype as follows:

HRESULT GetRTLog (LONG dwMachineNumber);

Function:

Triggers the real-time event. Must use the ReadRTLog function in frontof triggering to gain the real-time event. This event must and theReadRTLog coordination use.

Variable meaning:

DwMachineNumber: Machine number

5.15 OnDoor

Event prototype is as follows:

HRESULT OnDoor ([in] LONG EventType);

Functions:

Door sensor Event

Variable meanings:

EventType: 4 means that the door has not shut or door is opened, the 53 that exit- buttons, 5 that door is closed, one that the door was opened accidentally.

6. Attributes

6.1 AccGroup

Function： Set or get user respective group.
Before uploading the user , if has set this attribute, then with the function SetUserInfo and so on upload the user, set this user respective group, otherwise default as 1 group.
Type: LONG, read-write

6.2 AccTimeZones

Function： : Before uploading the user, if has set user attribute, when utilize the function SetUserInfo to and so on to upload the user, set this user respective Time Zone...
Type: LONG *, read-write, AccTimeZones [1], AccTimeZones [2], AccTimeZones [3] that means to set or read the No. value s of the Time Period. 1, the Time Period 2, the Time Period 3 the AccTimeZones [4] play a role only for the TFT Access Control machine, if the value is 0 that user use the group Time Period of the, the value is 1 that the use of The self –definited Time Period .

6.3 BASE64

Function: When set this attribute as the true value, when the SDK export character string template the output is the Base64 code, otherwise is the hexadecimal system code..
Type: LONG, read-write

6.4 CardNumber

Function: Set or read in the user the card number.
Type: LONG, read-write

6.5 CommPort

Function: When set serial port or 485 connection port.
Type: LONG, read-write.

6.6 ConvertBIG5

Function: When set this attribute as the true value, SDK will automatically convert the characte form simplified to traditional , the SDK is traditional chinese version now, but in the multi-countries language series product, this function is invalid, please do not set this attribute.
Type: LONG, read-write
Note: In the versions after the serial verion of multi-language, please don't set this attribution which is invalid.The versions after ZEM100 5.22, ZEM200 5.30 don't need to change this

attribution.

6.7 PINWidth

Function: Indicate user serial number (Arabic numeral) the Maximum length.
Type: LONG, read-only

7. FAQ

7.1 l. How do download the attendance record

Firstly, ability to use the function ReadGeneralLogData to read all attendance record in the memory, then utilze the function GetGeneralLogData circularly to obtain the attendance record, when function GetGeneralLogData returns to False , which means that finish reading the attendance records, write in the records which has been readed to the database or demonstrate these by other forms, then completes download the attendance records; The downloading management record and this way are same.

7.2 How to create online user

firstly, use function SetuserInfo to read in the user relative record to the machine, like enrolled number, password, name, then utilize the function SetUserTmpStr/SetUerTmp/SetEnrollDataStr/SetEnrollData to reads in the fingerprint template for this user; This method is suited for the user whose information has already gathered, and saved the user information by such as the database, the user did not need to register again in off-line routine, enhances the registration efficiency

7.3 import and download data to U flash disk

in the current standalone product, like as A5 is able to provide downloading data with U flash disk; a lot of customers care about the data format of U flash disk, because downloading data format is more complex, therefore we have the tool software which ability to import U flash disk data to the database, this database is open, the customer may read the downloading data from this database., may refer to following description to know the U flash disk data.

```
User data structures
typedef struct _User_{
U16 PIN;
U8 Privilege;
char Password[5];
char Name[8];
```

```
    U8 Card[5];         //ID No which used for store the relevant ID No
    U8 Group;           //the Group user belongs to
    U16 TimeZones;          //user can use time zone
    U32 PIN2;           //32Bit PIN2
}GCC_PACKED TUser, *PUser;
```

User fingerprint template data structures：

```
typedef struct _Template_{
    U16 Size; // fingerprint template length
    U16 PIN; // user interior serial number, may compare with PIN2 in the user table.
    BYTE FingerID; // Fingerprint backuping data
    BYTE Valid;
    BYTE Template[MAXTEMPLATESIZE]; //maximize template length
}GCC_PACKED TTemplate, *PTemplate;
```

Attendance record data structures：

attlog.dat format explanation：

segment:

BadgeNumber(employee number),

checktime, DeviceID,

checktype(check status),

VerifyCode(verification ways：password or fingerprint)

There is an Ascii code #9(Tab) between each segment. When development, move to the segment value you want to choose by "Tab".

7.4 BIOKEY capture fingerprint template and reads in standalone machine

When use BIOKEY to capture the fingerprint, ability to obtain the fingerprint template while go on enrolling user, in the OnEnroll event may obtain the current enroll fingerprint template, after obtaining the fingerprint template, then reads in the template. The write process, please refer to 4.2.

7.5 obtains all users all information

Use function ReadAllUserID to read all users ID number in the memory firstly, then use the function GetAllUserIDcircularly to obtain user EnrollNumber, after use the function GetUserInfo to be possible to obtain the user information. If you wan to obtain the fingerprint template data, may use the function GetUserTmpStr to obtain the character string type of the fingerprint template.

7.6 machines connections

May regard the fingerprint machine as independent PC when connect with it. But must pay attention, There must be much correspondence one by one between the machine IP address and PC IP address which want to connect with, for some machines, like as F4 has two connect ways that are the serial port and the network, in the different connection process you must set the different option to the machine, revise the communication way to switch control unit to TCP/IP or RS232/485, otherwise cannot connect. Some times the serial port are too busy to connect with the machine, need to restart the program again to get connection; Some times because the application software has connected with machine, and do not execute the manual disconnection, may use the function DisableDeviceWithTimeOut to establish automatic trip time in the machine. As a result of downloading, revision data and so on through serial port or network in some connections, in order to maintain the data is uniform, and avoid the unknown wrong occur with same principle as database, may use function EnableDevice to cause the machine to be under the active status, after completing the communication, be sure to restore again.

7.7 .After SettingUserInfo, the password cannot use

After performing this function, there is possibility to set Password at empty, therefore use the password will be failure to verify. Before performing SetUserInfo, need to use GetUserInfo to obtain the user password, and transfer the password value to the parameter of SetUserInfo Password, may maintain the password to be invariable when reads in the user information

7.8 on-line templates transform to the off-line template

May utilize the function FPTempConvertNew to transform the template which has been captured into the standalone fingerprint template. How to obtain the BIOKEY capturing the template, please refer to 4.4/3.1.9 explanations, this function ability transforms the binary fingerprint template. Its parameter temp1 and temp2 all are the binary type. Also may utilize function FPTempConvertNewStr to transform the character string form BIOKEY fingerprint template into the off-line fingerprint template.

7.9 Demo program cannot connect the machine

Sometimes, the user has installed the Time &Attendance management program, may utilize it to connect the machine, but Demo is unable to connect the machine. The reason is that when installing the attendance management software, the dynamic link libraries are copied to the directory of attendance management program and are registed in instllation directory. When developing, in general, the development tool quotes the controls under system directory, so if the development tool under system directory is not in consistent with that under atttednace software, will lead to the collision easiy (Different version of dynamic link library has a different function address, but the interface of OCX function is the same when writing the program, so it can only show obviously when running).

Note: the steps to register the development package in the system

1. If there is a registed development package in the system (has registered the development package already), please execute regsvr32 /u zkemkeeper.dll, to anti-register the old development package.
2. Copy all dynamic link libraries to the system directory, such as win2000 located in winnt\system32.
3. In running, execute regsvr32 "register path\zkemkeeper:dll" to register the development package.
4. In development environment, quote the controls correctly (please know the use of development tool by yourself, here we don't introduce).
5. In developmnetenvironent or running environment, please use the development package in the same version as possible.

7.10 Standalone fingerprint machine connections is at the active status

When the standalone fingerprint machine carries on communication , in order to keep the data is uniform, and avoid the contingency occur, after connecting with fingerprint machine, commonly use function EnableDevice to make the standalone fingerprint machine to be at the active status (please to refer to function EnableDevice explanation), after is at the active status, the standalone fingerprint machine keyboard, the fingerprint reader will stop the normal work, namely temporarily make these components in useless the condition , after completing the communication, may disconnect machine or use EnableDevice once more, ensure the standalone machine to restore to the normal state

The function DisableDeviceWithTimeOut is recommended.

7.11 How to reads in the traditional Chinese standalone machine time

If you want to write the traditional Chinese in the standalone machine, have to revise the ConvertBIG5 attribute as 1, like CZKEM1.ConvertBIG5 = 1, in order to avoid the demonstration with the traditional Chinese is in disorder code. Because of traditional Chinese font's difference, after uploading name and some character, the disorder code will display on the fingerprint machine, please revise the PC language option.

7.12 About theA5 K8 radio frequency card management

How to read in; obtain the user card number from A5, K8 T&A machine?

A5, oneself has the function to verify fingerprint; to upload user route is divided into two steps, ordinary upload user information and the fingerprint template., there are some attribute in the standalone SDK, which name is card number, when upload user (create) in, Take a supposition now, an user has a development package which correspond to control czkem1, first establishes

cardnumber [0] = to have to find the user card number. you can read in the user card number information with setuserinfo, certainly, K8 does not have the fingerprint to verify, after performing setuserinfo, does not need to upload the fingerprint again.if you want to download user card number, after obtains some user basic information (getuserinfo), you will find the value of czkem1 cardnumber [0], then obtain the user card number.

Note: After the radio frequency card has been spurted by the code (denary), it is necessary to the latter three bytes of the spurted code when write in the card number. For ordinary development, like as in PB, writes like this with czkem1 (0), can make a mistake when execute translation, therefore please wrote czkem1 [0], concrete please refer to in the standalone development package the PB example.

Explained: the A5, K8 card number are defined as unsigned 4 bytes in the machine interior, the interface attribute is Long, if cannot achieve unsigned 4 bytes in VB, therefore spreads to the card number latter three bytes also to be possible to carry on the verification (if in not redundant situation)

7.13 connections to passes through the firewall or the router

many times, connected machine have to pass through the firewall or the router and so on, the machine utilize UDP Server to monitor 4,370 ports in the network connection, the corresponding Socket of the development package also use the UDP protocol, and may assign the port. Therefore must open the UDP protocol and 4,370 ports in the firewall option or the router. If want to passes through Internet via the Port Redirection, able to visit router and ports + IP of the visited some machine. In ordinary circumstances, if UDP and 4370 is opened, run PING successfully, then ability to connects. Certainly, you must consider the network situation when downloads the data. Some machines may support the SOAP connection, can utilize the machine within Web Server and SOAP to visit machine.

Note: zem100 serail products need port mapping to through internt, as for zem200, if the local network environment can support the gateway communication, since it is based on linux, it can visit the devie by setting the gateway. Of course there are some other methods to access the device, such as VPN (vitural local network), IP mapping. The connection solution is determined by the specific network environment.

7.14 About fingerprint template

The length of fingerprint template collected by the Biokey SDk can not be more than 2048 bytes. So the fingerprint template has a relavtive samller capacity, very easy to be stored in the database, such as Access, MySQL, MSSQL, Orical etc.

In zem100 serial products, the fingerprint template can only have about 400 bytes (only the binary system). Zem200 fingerpirnt template has 608 bytes (only the binary system).

7.15 Upload large amount of fingerprint

Large amount fingerprint generally refers to more than 1,500 fingerprints, in some equipment,

the biggest can rearch 8,000 fingerprints, when upload fingerprint, the buffer mode must be used to upload fingerprint template. Both upload batch mode, in the mode, the upload speed is greatly enhanced. How to use batch mode to upload fingerprint template, please refer to the batch function

7.16 How to support the upload and download of ZKFinger10.0 algorithm template

ZKFinger10.0 algorithm has provided higer verification speed, but its template size and the storage method are different from the old algorithm, perform as follows:

1. When using ZKFinger10.0 algorithm, the size of a fingerprint template is about 1.3K, while that of the old version is less than 608 bytes in general.

2. All fingerprints of a user are saved as a template, while a fingerprint of a user is saved as a template in the old version. In gerneal, the size is about 3k when a user enolls 2-3 fingerprints, and it is recommended to distribute a space beyond 16K for using if a user enrolls 10 fingerprints. Considering 10 fingerprints supported by the fingerprint machine, so distribute a space beyond 16K to save the fingerprint template.

The upoad and download functions of ZKFinger10.0 fingerprint template have:

Download in byte array method:

```
SSR_SetUserTmp([in] LONG dwMachineNumber, [in] BSTR dwEnrollNumber, [in] LONG dwFingerIndex, [in] BYTE* TmpData, [out,retval] VARIANT_BOOL* pVal);
SSR_GetUserTmp([in] LONG dwMachineNumber, [in] BSTR dwEnrollNumber, [in] LONG dwFingerIndex, [out] BYTE* TmpData, [out] LONG* TmpLength, [out,retval] VARIANT_BOOL* pVal);
```

These two functions also support the functions of the old algorithm, but it is especially required to designate dwFingerIndex=15 during uploading and downloading template 10.0. Please refer to the statement of this function for details.

7.17 How to support the download of face template

1. The transmission method of face template is as same as that of Finger 10.0.

2. A user has about 15 pieces of face templates which are composed of different angles, and the size of each module is 2576 bytes, and the 3th, 4th byte of each module is the ID number corresponding to ID of the 1st, 2nd byte of user structure. The last 24 bytes in user structure of device supporting face identification are the user number. So each user has face templates with about 37k, and it is not recommended to use the serial port to upload and download data. Upload and download all templates of this user when the value of dwFaceIndex is 50.

3. The upload, download, deletion functions of ZkFace face templates have:

```
SetUserFace(LONG dwMachineNumber, BSTR dwEnrollNumber, LONG dwFaceIndex, BYTE* TmpData, LONG TmpLength, VARIANT_BOOL* pVal);
```

GetUserFace(LONG dwMachineNumber, BSTR dwEnrollNumber, LONG dwFaceIndex, BYTE* TmpData, LONG * TmpLength, VARIANT_BOOL* pVal);

DelUserFace (LONG dwMachineNumber, BSTR dwEnrollNumber, LONG dwFaceIndex, VARIANT_BOOL* pVal);

See details in function explanation.

7.18 The difference of U disk data between ZKFinger10.0 and ZKFinger9.0

Template structure: algorithm9.0 has designed the fixed-length data structure; algorithm 10.0 will pack 10 fingerprints as a template, its possible length is reaching 16K, so adopt the variable-length data structure.

Algorithm 10.0：

```
typedef struct _Template_{
    U16 Size;                   // the fingerprint size, including the data of whole structure
    U16 PIN;                    // User ID
    BYTE FingerID;              // Fingerprint number
    BYTE Valid;                 // Mark
    BYTE *Template; //template
}GCC_PACKED TTemplate, *PTemplate;
```

Differences: 1) the file name is modified as template.fp10;

2) FingerID=15, Valid=0; when uploading and downloading

3) The length of template is Size-6.

7.19 Installation Notice

The SDK supporting ZKFinger10.0 and face template communication, has newly added two dynamic connection library file such as usbcom.dll and tcpcom.dll

8. Extensions Function

Beside of above described the function interface, the interface of the Development packages function also has some the interface which to be used in the special circumstance, possibly some development packages does not include the following function interface. Presently describes as follows, please refer

8.1 SSR_GetGeneralLogData

[Function]

SSR_GetGeneralLogData([in] LONG dwMachineNumber, [out] BSTR* dwEnrollNumber, [out] LONG* dwVerifyMode, [out] LONG* dwInOutMode, [out] LONG* dwYear, [out] LONG* dwMonth, [out] LONG* dwDay, [out] LONG* dwHour, [out] LONG* dwMinute, [out] LONG* dwSecond, [out,retval] VARIANT_BOOL* pVal);

[Purpose]

Get attendance record, which purpose like as the function GetGeneralLogData, the way to use this function is same as the function GetGeneralLogData，User No. And name can support the code within 24bit; it is need to special machine (SSR)。 Of course, it is required to use with the special machine (SSR etc.). This function is perfected in 2006-09-15, and released in 2006-11-15, and coming to the market in coordination with SSR products in 2006-12-1.

[Parameter]

dwEnrollNumber： User number, Please refer to preceding explanation

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim dwEnrollNumber As String
Dim dwVerifyMode As Long
Dim dwInOutMode As Long
Dim timeStr As String
Dim i As Long
Dim dwMachineNum, dwEMachineNum, dwYear, dwMonth, dwDay, dwHour, dwMinute,
dwSecond, dwWorkcode, dwReserved As Long

If CZKEM1.ReadGeneralLogData (Machine Number) Then
   While CZKEM1.SSR_GetGeneralLogData(Machine Number, dwEnrollNumber,
dwVerifyMode, dwInOutMode, dwYear, dwMonth, dwDay, dwHour, dwMinute,
dwSecond)
            DoEvents
            i = i + 1
            Debug.Print dwEnrollNumber
   Wend
```

End If

[Specical consideration]:

The function of User No. with RSS header is character string type, follow do not describes it again.

8.2 SSR_GetAllUserInfo

[Function]

SSR_GetAllUserInfo([in] LONG dwMachineNumber, [out] BSTR * dwEnrollNumber, [out] BSTR * Name, [out] BSTR * Password, [out] LONG * Privilege, [out] VARIANT_BOOL * Enabled, [out,retval] VARIANT_BOOL* pVal);

[Purpose]

Obtain the user information, every time this function execute a time, the user information pointer which the point the memory move to the next record, when complete to read all user information, returns to False.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim dwEnrollNmber As String
Dim dwEnrollNumber1
Dim Name As String
Dim password As String
Dim privilege As Integer
Dim enabled As Boolean
Dim tmpData As String
Dim tmpLength As Integer
Dim sqlstr As String
Dim TmpData1
Dim k As Long
Dim tmplateBinary(1024) As Byte
Dim tempstr As String
Dim i As Integer
Dim test As Boolean

machineNum = 1
If CZKEM1.ReadAllUserID(MachineNumber) Then
If CZKEM1.ReadAllTemplate(1) Then
    While CZKEM1.SSR_GetAllUserInfo MachineNumber), dwEnrollNmber, Name, password, privilege, enabled)
        dwEnrollNumber1 = dwEnrollNmber
        For k = 0 To 9
        //May get the fingerprint template through binary system.
        test=CZKEM1.SSR_GetUserTmpStr(MachineNumber, dwEnrollNumber1,
            CLng(k), tempstr, tmpLength)
```

```
            If test Then
                Debug.Print tempstr
            End If
        Next
    Wend
  End If
End If
```

8.3 SSR_GetUserInfo

[Function]

SSR_GetUserInfo([in] LONG dwMachineNumber, [in] BSTR dwEnrollNumber, [out] BSTR* Name, [out] BSTR* Password, [out] LONG* Privilege, [out] VARIANT_BOOL* Enabled, [out,retval] VARIANT_BOOL* pVal)

[Purpose]

According to the user serial number to get user news, the function is completely same with the GetUserInfo, only different is the user serial number with the character string. Only supports the SSR series product.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim Name As String
Dim pas As String
Dim pri As Integer
Dim en As Boolean
CZKEM1.SSR_GetUserInfo 1, "12345678901234", Name, pas, pri, en
```

8.4 SSR_SetUserInfo

[Function]

SSR_SetUserInfo([in] LONG dwMachineNumber, [in] BSTR dwEnrollNumber, [in] BSTR Name, [in] BSTR Password, [in] LONG Privilege, [in] VARIANT_BOOL Enabled, [out,retval] VARIANT_BOOL* pVal)

[Purpose]

Upload the user information, the function is completely same with the function SetUserInfo, the different is the user serial number with the character string type. Only supports the SSR series product.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim Name
Dim pas
Dim pri
Dim en
pas = ""
```

pri = 0
en = True
Name = "KKKKAAAADDDDDDDDEEEEIIII"
CZKEM1.SSR_SetUserInfo 1, "12345678901234", Name, pas, pri, en

8.5 SSR_GetUserTmpStr

[Function]
SSR_GetUserTmpStr([in] LONG dwMachineNumber, [in] BSTR dwEnrollNumber, [in] LONG dwFingerIndex, [out] BSTR* TmpData, [out] LONG* TmpLength, [out,retval] VARIANT_BOOL* pVal);
[Purpose]
Obtains the user fingerprint template by the character string, which is same with the GetUserTmpStr function. Please refer to the function GetUserTmpStr.
[Parameters]
dwFingerIndex: user fingerprint index, designated as 15 only by ZKFinger10.0 algorithm. Download completely at one time, that is, download all fingerprints of this user. One number for one fingerprint in the the former algorithm, if want to download all fingerprints of this user, need to go through 0-9 to downloadall all fingerprints.
[Return Value]
Return True for success, otherwise False.
[Example]
Please refer to the example in the function GetAllUserInfo.

8.6 SSR_DeleteEnrollData

[Function]
SSR_DeleteEnrollData([in] LONG dwMachineNumber, [in] BSTR dwEnrollNumber, [in] LONG dwBackupNumber, [out,retval] VARIANT_BOOL* pVal)
[Purpose]
Delete the user fingerprint, the password, user itself and so on. Which function is same with the function DeleteEnrollData, compare it with the function DeleteEnrollData, we get that the parameter only is difference: This function user serial number is created by the character string, other parameters are same. Below does not make the description. Execute successfully, return to True, otherwise return to False**.**
[Example]
'Delete the user first fingerprint template whose serial number is 12345678901234. PVal is the parameter to the returning function to, be unable see it in development.
CZKEM1.SSR_DelUserTmp 1, "12345678901234", 0

8.7 SSR_GetUserTmp

[Function]
SSR_GetUserTmp([in] LONG dwMachineNumber, [in] BSTR dwEnrollNumber, [in] LONG dwFingerIndex, [out] BYTE* TmpData, [out] LONG* TmpLength, [out,retval] VARIANT_BOOL* pVal)

[Purpose]

Obtain the user fingerprint template by the binary system. the Parameter dwEnrollNumber is the user serial number, selected the character string method, at present only supports the SSR series products. The function is same with the function GetUserTmp, may refer to the GetUserTmp function. For the example, please refer to the SSR_GetUserTmpStr functional dependence code.

[Parameters]

dwFingerIndex: user fingerprint index, designaed as 15 only by ZKFinger10.0 algorithm. Download completely at one time, that is, download all fingerprints of this user. One number for one fingerprint in the former algorithm, if want to download all fingerprints of this user, need to go through 0-9 to download all fingerprints.

8.8 SSR_DelUserTmp

[Function]

SSR_DelUserTmp([in] LONG dwMachineNumber, [in] BSTR dwEnrollNumber, [in] LONG dwFingerIndex, [out,retval] VARIANT_BOOL* pVal)

[Purpose]

Delete the user some fingerprint template, which purpose is same with the DeluserTmp function. DwEnrollNumber is the user serial number created by the character string. dwFingerIndex is the fingerprint index

[Example]

CZKEM1.SSR_DelUserTmp 1, "12345678901234", 0

8.9 SSR_SetUserTmpStr

[Function]

SSR_SetUserTmpStr([in] LONG dwMachineNumber, [in] BSTR dwEnrollNumber, [in] LONG dwFingerIndex, [in] BSTR TmpData, [out,retval] VARIANT_BOOL* pVal)

[Purpose]

Upload the fingerprint template by character string.

[Parameter]

dwEnrollNumber：User’s serial number. There are many descriptions to other parameters before explanation, please refer to it.

TmpData: Character string type fingerprint template

dwFingerIndex: user fingerprint index, designated as 15 only by ZKFinger10.0 algorithm. Upload completely at one time, that is, upload all fingerprints of this user. One number for one fingerprint in the former algorithm, if want to upload all fingerprints of user, need to go through 0-9 to upload all fingerprints.

[Return Value]

Return True for success, otherwise False.

[Example]

```
Dim dwEnrollNumber
Dim tempstr
```

```
Dim Name
Dim pas
Dim pri
Dim en

tempstr=
"ocojg5gvYQENNjFnwQ02rlIBDaCwTcENoClCgSoqK0SBFCk1VIFPlDdUgVyNyF6BB
dqaOIEUZx0dwQ1VmUgBDRcuc0EJKsZ4QQrPvUiBEpFBR4ELgLY0gRU8MTqBDzK
uMIEKQSgyQQ1BJCoBCk4cKoEPWSBLwRaIIjvBIlOnPcEzQsMwwQ7SyztBCwLQdU
EH2aUTwQfKTl1BBWydE8ENVtJdAQbjyU6BDnfAHAEHxQsqQQx0JqRJEJnEjRUL0
K8OERXAwwGkmZzZmrrAwnKly6rOm6ubwMJupc3Lzquqmh7AwWmmqs3t+8qZmsD
BZaG6vAIKEqLMmJkfwMFfocqtdgkVouqYl8DBWKG5vXAKGaH5iCLAwVShmJxmC
xyh6qglwMFPoZeITiWiTKqHwMFMoZZVOy6iC6poKMDBSqGGQjOjE82lVsDBSElIR
DswKSQrNqGjRSrAwUhJSEU7LiQeJkKiYCZXwUhKSkc9LSAYCFFIP6ElVsJMTUtG
LRYOcl1RoQNFOcJQUVJVbAkGb2RboRN3wMJUVVhfbQEDb2ahNGdZwMNaX2dw
dnZtohZmeMDEZKTetzN4Z2HAyWyhR4dl4A=="
pas = ""
pri = 0
en = True
machineNum = 1
Name = "TEST"
CZKEM1.SSR_SetUserInfo 1, "12345678901234", Name, pas, pri, en
CZKEM1.SSR_SetUserTmpStr CLng(machineNum), "12345678901234", 0, tempstr
```

8.10 SSR_SetUserTmp

[Function]

SSR_SetUserTmp([in] LONG dwMachineNumber, [in] BSTR dwEnrollNumber, [in] LONG dwFingerIndex, [in] BYTE* TmpData, [out,retval] VARIANT_BOOL* pVal)

[Purpose]

Upload the fingerprint template by the binary system. Which purpose is quite same with the SetUserTmp function, only user serial number of this function is the character string type. Certainly, the function with RSS header needs to be support by the relative machine (only to be able to use in the SSR similar product). For example, please refers to the SetUesrTmp relation code or refers to the SSR_SetUserTmpStr example code**.**

。

[Parameter]

dwEnrollNumber：User serial number

dwFingerIndex: user fingerprint index, designated as 15 only by ZKFinger10.0 algorithm. Upload completely at one time, that is, upload all fingerprints of this user. One number for one fingerprint for the former algorithm, if want to upload all fingerprints of this user, need to go through 0-9 to upload all fingerprints.

TmpData：User fingerprint template.

8.11 SetWorkCode

[Function]

SetWorkCode ([in] LONG WorkCodeID, [in] LONG AWorkCode, [out,retval] VARIANT_BOOL* pVal)

[Purpose]

Upload WorkCode. at present this function only supports some the machine which has specially custom-made the WorkCode function. With the ordinary WorkCode function the machine dose not support this API.

[Parameter]

WorkCodeID：WorkCode serial number, support unsigned 2 bytes, namely the maxmuin is 65,535.

AworkCode：WorkCode value, ability support unsigned 4 bytes.

pVal: the function return value, unable to see it in development.

[Example]

```
Dim aflag As Boolean
Dim AWorKCode
Dim AworkCodeValue
AWorkCode=1
AworkCodeValue=1
aflag = CZKEM1.SetWorkCode(AWorKCode, AworkCodeValue)
CZKEM1.RefreshData 1
```

8.12 GetWorkCode

[Function]

GetWorkCode([in] LONG WorkCodeID, [out] LONG* AWorkCode, [out,retval] VARIANT_BOOL* pVal)

[Purpose]

Obtain the WorkCode value, according to the WorkCode serial number. at present this function only supports some the machine which specially has custom-made the WorkCode function. the ordinary WorkCode function machine dose not support this API**.**

[Parameter]

WorkCodeID：WorkCode serial number

AworkCode: WorkCode value

[Example]

```
Dim AWorkCode
Dim aflag As Boolean
Dim AworkCodeID
AworkCodeID=1
aflag = CZKEM1.GetWorkCode(AworkCodeID, AWorkCode)
CZKEM1.RefreshData 1
```

8.13 DeleteWorkCode

[Function]

DeleteWorkCode([in] LONG WorkCodeID, [out,retval] VARIANT_BOOL* pVal)

[Purpose]

According to the WorkCode serial number to deletes some WorkCode, at present this function only supports some the machine which specially has custom-made the WorkCode function. the ordinary WorkCode function machine dose not t support this API.

[Parameter]

WorkCodeID:WorkCode serial

pVal：the function return value

[Example]

```
Dim aflag As Boolean
Dim AworkCodeID
AworkCodeID=1
aflag = CZKEM1.DeleteWorkCode(AWorkCodeID)
CZKEM1.RefreshData 1
```

8.14 ClearWorkCode

[Function]

ClearWorkCode([out,retval] VARIANT_BOOL* pVal)

[Purpose]

Clear the WorkCode which have been uploaded, certainly, when user checking attendance inputs the WorkCode to keep up, may continue to download**.**

[Example]

```
Dim aflag As Boolean
aflag = CZKEM1.ClearWorkCode()
CZKEM1.RefreshData 1
```

8.15 IsTFTMachine

[Function]

IsTFTMachine (LONG dwMachineNumber)

[Purpose]

Determine whether TFT screen fingerprint machine or not

[Parameters]

dwMachineNumber

No. of fingerprint machine

[Return]

True :TFT screen fingerprint machine, otherwise not.

[Example]

8.16 SSR_EnableUser

[Function]

SSR_EnableUser (LONG dwMachineNumber, BSTR dwEnrollNumber, VARIANT_BOOL bFlag)

[Purpose]

Users set up option to primit user or prohibit users. This function only supports TFT screen fingerprint machines.

[Parameters]

dwMachineNumber

No. of fingerprint machine

dwEnrollNumber

User No.

bFlag

True: primit users, False: prohibit users.

[Return]

True: Setting up successful, otherwise not.

[Example]

8.17 SSR_SetUserSMS

[Function]

SSR_SetUserSMS (LONG dwMachineNumber, BSTR dwEnrollNumber, LONG SMSID)

[Purpose]

Users set up the short message. This function only supports TFT screen fingerprint machines. To set up personal messaging, through SetSMS functions, make sure to create a short message, and then use this function set up a short message.

[Parameters]

dwMachineNumber

No. of fingerprint machine

dwEnrollNumber

User No.

bFlag

True: allowing users, False: prohibiting users.

[Return]

True: Setting up successful, otherwise not.

[Example]

MachineNumber = 1;

SmsID = 1;

Tag = 253;

SmsContent = "This is a personal message";

StartTime = "2007-09-01 14:25:00"

EnrollNumber = 5;

ValidMinutes = 60; / / Min

Czkem.SetSMS (MachineNumber, SmsID, Tag, ValidMinutes, StartTime, SmsContent);
Czkem.SSR_SetUserSMS (MachineNumber, EnrollNumber, SmsID);

8.18 SSR_DeleteUserSMS

[Function]
SSR_DeleteUserSMS (LONG dwMachineNumber, BSTR dwEnrollNumber, LONG SMSID)
[Purpose]
Users delete the corresponding short message. This function only supports TFT screen fingerprint machines
[Parameters]
dwMachineNumber
No. of Fingerprint machine,
dwEnrollNumber
User No.
SMSID
The short message number.
[Return]
Returns True success, or else return to False.
[Example]

8.19 SSR_SetHoliday

[Function]
SSR_SetHoliday (LONG dwMachineNumber, LONG HolidayID, LONG BeginMonth, LONG BeginDay, LONG EndMonth, LONG EndDay, LONG TimeZoneID)
[Purpose]
To set up Holidays in the fingerprint machine, the function only supports TFTscreen fingerprint machines. The holiday must be set 24 hours
[Parameters]
dwMachineNumber
No. of Fingerprint machine,
HolidayID
No. of holidays, the value of the scope is 1-24.
BeginMonth
the month of beginning of the Holidays
BeginDay
The day of beginning of the holidays
EndMonth
The month of end of the Holidays
EndDay
The day of end of the holidays
TimeZoneID
Time Zone No. the value of the scope is 1-50.

[Return]

Returns True success, or else return to False.

[Example]

8.20 SSR_GetHoliday

[**Function**]

SSR_GetHoliday (LONG dwMachineNumber, LONG HolidayID, LONG * BeginMonth, LONG * BeginDay, LONG * EndMonth, LONG * EndDay, LONG * TimeZoneID)

[**Purpose**]

return time , whose holiday has been set up, to Fingerprint machine, the function only supports TFT screen fingerprint machines.

[**Parameters**]

dwMachineNumber

No. of Fingerprint machine,

HolidayID

No. holidays, the value of the scope is 1-24.

BeginMonth

The month of beginning of the Holidays

BeginDay

The day of beginning of the holidays

EndMonth

The month of end of the holidays Holidays

EndDay

The day of end of the holidays

TimeZoneID

No. of Time Zone .

[**Return]**

Returns True success, or else return to False.

[**Example**]

8.21 SSR_SetGroupTZ

[**Function**]

SSR_SetGroupTZ (LONG dwMachineNumber, LONG GroupNo, LONG Tz1, LONG Tz2, LONG Tz3, LONG VaildHoliday, LONG VerifyStyle)

[**Purpose**]

Set up the group Time Zone of the fingerprint machine , only supports TFT screen fingerprint machines.

[**Parameters**]

dwMachineNumber

No. of Fingerprint machine,

GroupNo

Group number, the value of the scope is 1-99.

Tz1

Time Zone 1, the value of the scope is 1-50.

Tz2

Time Zone 2, the value of the scope is 1-50.

Tz3

Time Zone 3, the value of the scope is 1-50.

VaildHoliday

whether holidays is validity or not. 1: valid, 0 invalid.

VerifyStyle

Fingerprint machine verification methods. Its value is: 0 (FP / PW / RF), 1 (FP), 2 (PIN), 3 (PW), 4 (RF), 5 (FP & RF), 6 (FP / PW), 7 (FP / RF), 8 (PW / RF), 9 (PIN & FP), 10 (FP & PW), 11 (PW & RF), 12 (FP & PW & RF), 13 (PIN & FP & PW), 14 (FP & RF / PIN)

[Return]

Returns True success, or else return to False.

[Example]

8.22 SSR_GetGroupTZ

[Function]

SSR_GetHoliday (LONG dwMachineNumber, LONG GroupNo, LONG * Tz1, LONG * Tz2, LONG * Tz3, LONG * VaildHoliday, LONG * VerifyStyle)

[**Purpose**]

Return the group Time Zone of the fingerprint machine , the function only supports TFT screen fingerprint machine series.

[**Parameters**]

dwMachineNumber

No. of the fingerprint machine,

GroupNo

Group number, the value of the scope is 1-99.

Tz1

Time Zone 1, the value of the scope is 1-50.

Tz2

Time Zone 2, the value of the scope is 1-50.

Tz3

Time Zone 3, the value of the scope is 1-50.

VaildHoliday

The validity of holidays. 1: valid, 0 invalid.

VerifyStyle

Fingerprint machine verification methods. Its value is: 0 (FP / PW / RF), 1 (FP), 2 (PIN), 3 (PW), 4 (RF), 5 (FP & RF), 6 (FP / PW), 7 (FP / RF), 8 (PW / RF), 9 (PIN & FP), 10 (FP & PW), 11 (PW & RF), 12 (FP & PW & RF), 13 (PIN & FP & PW), 14 (FP & RF / PIN).

[Return]

Returns True success, or else return to False.

[Example]

8.23 SSR_SetUnLockGroup

[**Function**]

SSR_SetUnLockGroup (LONG dwMachineNumber, LONG CombNo, LONG Group1, LONG Group2, LONG Group3, LONG Group4, LONG Group5)

[**Purpose**]

Set up unlock combination of the fingerprint machine, the function only supports color screen fingerprint machines.

[**Parameters**]

dwMachineNumber

No. of Fingerprint machine,

CombNo

Unlock combination of numbers, the value of the scope is 1-10

Group1

Group No. 1, the value of the scope is 1-99.

Group2

Group No. 2, the value of the scope is 1-99.

Group3

Unit No. 3, the value of the scope is 1-99.

Group4

Unit No. 4, the value of the scope is 1-99.

Group5

Unit No. 5, the value of the range is 1-99.

[Return]

Returns True success, or else return to False.

[Example]

/ / Set unlock must be composed of 1 of their users and their Group 2 users by fingerprint verification has passed since User can not open the door.

DwMachineNumber = 1;

CombNo = 1;

Group1 = 1;

Group2 = 2;

Group3 = 0;

Group4 = 0;

Group5 = 0;

Czkem.SSR_SetUnLockGroup (dwMachineNumber, CombNo, Group1, Group2, Group3, Group4, Group5)

8.24 SSR_ GetUnLockGroup

[Function]

SSR_GetUnLockGroup (LONG dwMachineNumber, LONG CombNo, LONG * Group1, LONG * Group2, LONG * Group3, LONG * Group4, LONG * Group5)

[**Purpose**]

Return unlock combination of the fingerprint machine , This function only supports TFT screen fingerprint machine series.

[Parameters]

DwMachineNumber

No. of Fingerprint machine,

CombNo

Unlock combination of numbers, the value of the scope is 1-10

Group1

Group No. 1, the value of the scope is 1-99.

Group2

Group No. 2, the value of the scope is 1-99.

Group3

Unit No. 3, the value of the scope is 1-99.

Group4

Unit No. 4, the value of the scope is 1-99.

Group5

Unit No. 5, the value of the range is 1-99.

[Return]

Returns True success, or else return to False.

[Example]

8.25 SetDaylight

[Function]

SetDaylight (LONG dwMachineNumber, LONG Support, BSTR BeginTime, BSTR EndTime)

[**Purpose**]

Set up the beginning and ending of the daylight saving time

[Parameters]

dwMachineNumber

No.of Fingerprint machine,

Support

Set up whether the daylight saveing time is valid or not;1 valid, 0 invalid.

BeginTime

Begining time of daylight saving time. Time format: mm-dd hh: ss. For example :06-01 04:00

EndTime

Ending time of daylight saving time. Time format: mm-dd hh: ss. For example :09-01 04:00

[Return]

Returns True success, or else return to False.

[Example]

8.26 GetDaylight

[Function]

GetDaylight (LONG dwMachineNumber, LONG * Support, BSTR * BeginTime, BSTR * EndTim)

[**Purpose**]

To return the beginning and ending time of the daylight saving time.

[Parameters]

dwMachineNumber

No. of Fingerprint machine,

Support

whether Daylight saving time is valid ,1 valid, 0 invalid.

BeginTime

Begining time of daylight saving time; Time format: mm-dd hh: ss.

EndTime

Ending time of daylight saving time; Time format: mm-dd hh: ss.

[Return]

Returns True success, or else return to False.

[Example]

8.27 SetCustomizeVoice

[Function]

SetCustomizeVoice(LONG dwMachineNumber, LONG VoiceID, BSTR FileName)

[Purpose]

Play the self-defined voice file, which file format is mono audio channel, 8-bit wav file. SDK uploads the voice files requiring to be played to the fingerprint machine and plays.

Note: this function is supported by the firmware version 6.20 and the above.

[Parameter]

dwMachineNumber: Machine number.

VoiceID: the voice number defined by the system.

FileName: the voice file required to be played. Need to input the absolute path of file.

[Return value]

Return True for success, otherwise return False.

[Example]

```
Dim WavFile As String
Dim DeviceNo
Dim VoiceID

DeviceNo = 1
VoiceID = 1
WavFile = "c:\sample.wav"
CZKEM1.SetCustomizeVoice(DeviceNo, VoiceID, WavFile)
```

8.28 DelCustomizeVoice

[Function]

DelCustomizeVoice(LONG dwMachineNumber, LONG VoiceID)

[Purpose]

Delete the self-defined voice file from machine.

Note: this function is supported by the firmware version 6.20 and the above.

[Parameter]

dwMachineNumber: Machine number.

VoiceID: the voice number defined by the system

[Return value]

Return True for success, otherwise return False.

[Example]

```
Dim DeviceNo
Dim VoiceID

DeviceNo = 1
VoiceID = 1
CZKEM1.DelCustomizeVoice(DeviceNo, VoiceID)
```

8.29 EnableCustomizeVoice

[Function]

EnableCustomizeVoice(LONG dwMachineNumber, LONG VoiceID, LONG Enable)

[Purpsoe]

Play the self-defined voice file, or the default voice file.

Note: this function is supported by the firmware version 6.20 and the above.

[Parameter]

dwMachineNumber: machine number.

VoiceID: the voice number defined by the system.

Enable: This value is set as 1, indicating to play the self-defined voice file; it is set as 0, indicating to play the default voice file.

[Return value]

Return True for success, otherwise return False.

[Example]

```
Dim Enable
Dim DeviceNo
Dim VoiceID

DeviceNo = 1
VoiceID = 1
Enable = 1
```

CZKEM1.EnableCustomizeVoice(DeviceNo, VoiceID, Enable)

8.30 SetCustomizeAttState

[Function]

SetCustomizeAttState(LONG dwMachineNumber, LONG StateID, LONG NewState)

[Purpose]

Self-define the sign value of employee attendance status (that is the status of on duty, off duty etc.), and please contact the consumer service when using this function, and update the attendance record format to the extension record format.

Note: this function is supported by the firmware version 6.20 and the above.

[Parameter]

dwMachineNumber: Machine number.

StateID: the default attendance status value。0-checkin, 1-checkout, 2-Break out, 3-break in, 4-OT in, 5-OT Out.

NewState: new status value, the range is : 0-127。

[Return value]

Return True for success, otherwise return False.

[Example]

```
Dim StateID
Dim DeviceNo
Dim NewState

DeviceNo = 1
StateID = 0 //check in
NewState = 50
CZKEM1.SetCustomizeAttState(DeviceNo, StateID, NewState)
```

8.31 DelCustomizeAttState

[Function]

DelCustomizeAttState(LONG dwMachineNumber, LONG StateID)

[Purpose]

Delete the self-defined attendance status, use the default status value.

Note: this function is supported by the firmware version 6.20 and the above.

[Parameter]

dwMachineNumber: machine number.

StateID: the default attendance status value。0-checkin, 1-checkout, 2-Break out, 3-break in, 4-OT in, 5-OT Out.

[Return value]

Return True for success, otherwise return False.

[Example]

Dim StateID
Dim DeviceNo

DeviceNo = 1
StateID = 0 //check in
CZKEM1.DelCustomizeAttState(DeviceNo, StateID)

8.32 EnableCustomizeAttState

[Function]
EnableCustomizeAttState(LONG dwMachineNumber, LONG StateID, LONG Enable)
[Pusepose]
Use the self-defined attendance status, and use the default system value.
Note: this function is supported by the firmware version 6.20 and the above.
[Parameter]
dwMachineNumber: machine number.
StateID: the default attendance status value。0-checkin, 1-checkout, 2-Break out, 3-break in, 4-OT in, 5-OT Out.
Enable: it is set as 1, indicating to use the self-defined attendance status; it is set as 0, indicating to use the default status value.
[Return value]
Return True for success, otherwise return False.
[Example]
Dim StateID
Dim DeviceNo
Dim Enable

DeviceNo = 1
StateID = 0 //check in
Enable = 1
CZKEM1.EnableCustomizeAttState(DeviceNo, StateID, Enable)

8.33 ReadFile

[Function]
ReadFile(LONG dwMachineNumber, BSTR FileName, BSTR FilePath)
[Purpose]
From device, download the designated file to PC. The designated file name must be saved into this device, otherwise the download will be failed. When using this function, please contact with customer servie and explain you aim, and tell your corresponding file name.
Note: this function is supported by the firmware version 6.20 and the above.
[Parameter]
dwMachineNumber: machine number.

FileName: the designated file name.

FilePath: save to the path of PC.

[Return value]

Return True for success, otherwise return False.

[Example]

none

8.34 SendFile

[Function]

SendFile(LONG dwMachineNumber, BSTR FileName)

[Purpose]

Upload the designated firl from device to the fingerpint machine. When using this function, please contact the customer service and telll your aim, and tell your corresponding file name.

Note: this function is supported by the firmware verion 6.20 and the above.

[Parameter]

dwMachineNumber: machine number.

FileName: the file name including the absolute path.

[Return value]

Return True for sucdess, otherwise return False.

[Example]

none

8.35 SetLanguageByID

[Function]

SetLanguageByID(LONG dwMachineNumber, LONG LanguageID, BSTR Language)

[Purpose]

Self-dfine the individual language prompt according to the language ID. When using this function, please contact the cusomter servie and tell your aim, and tell your corresponding language ID.

Note: This function is supported by the firmware verson 6.20 and the above.

[Parameter]

dwMachineNumber: machine number.

LanguageID: Language ID.

Language: Language content.

[Return value]

Return True for success, otherwise return False.

[Example]

Dim LanguageID

Dim DeviceNo

Dim Language as String

DeviceNo = 1
LanguageID = 29 //welcome
Language = “I Love China”
CZKEM1.SetLanguageID(DeviceNo, LanguageID, Language)

8.36 SetLastCount

[Function]
SetLastCount(LONG count)
[Purpose]
The total count number of the last downloaded attendance records, and this function takes effect when downloading the latest record.
Note: this function is supported by the firmwave version 6.20 and the above.
[Parameter]
Count: the total count number of the last downloaded attendance records. It is set as 0, indicating to download all attendance records; if it is set as 30, indicating to download all attendance records after the thirtieth record.
[Return value]
Return True for success, otherwise return False.
[Example]

```
Dim DeviceNo
Dim iCount

CZKEM1.SetLastCount(0)
CZKEM1.ReadAllGLogData(DeviceNo)
While CZKEM1.GetGeneralLogDataStr(…) do
…
iCount = iCount+1 //To Save value of iCount to the database or register.
Wend

//To Add three record on the device
CZKEM1.SetLastCount(iCount)
CZKEM1.ReadAllGLogData(DeviceNo)
While CZKEM1.GetGeneralLogDataStr(…) do
…
iCount = iCount+1
Wend
```

9. Face Function and Fingerprint 10.0 Function

9.1 SetUserFace

[Function]

SetUserFace(LONG dwMachineNumber, BSTR dwEnrollNumber, LONG dwFaceIndex, BYTE* TmpData, LONG TmpLength, VARIANT_BOOL* pVal);

[Purpose]

Upload face templates

[Parameter]

dwMachineNumber	machine number
dwEnrollNumber	work number (not beyond 24 bits)
dwFaceIndex	digit 50 to upload all face templates of this user
TmpData	face template
TmpLength	the size of uploadded data

[Return Value]

Return True for success, otherwise return False.

9.2 GetUserFace

[Function]

GetUserFace(LONG dwMachineNumber, BSTR dwEnrollNumber, LONG dwFaceIndex, BYTE* TmpData, LONG * TmpLength, VARIANT_BOOL* pVal);

[Purpose]

Download face templates

[Parameter]

dwMachineNumber	machine number
dwEnrollNumber	work number (not beyond 24 bits)
dwFaceIndex	digit 50 to download all face templates of this user
TmpData	face template
TmpLength	the size of downloaded data

[Return Value]

Return True for success, otherwise Return False.

9.3 DelUserFace

[Function]

DelUserFace (LONG dwMachineNumber, BSTR dwEnrollNumber, LONG dwFaceIndex, VARIANT_BOOL* pVal)

[Purpose]

Delete face templates

[Parameter]

dwMachineNumber	machine number
dwEnrollNumber	work number (not beyond 24 bits)
dwFaceIndex	digit 50 to delete all face templates of this user

[Return Value]

Return True for success, otherwise return False.

[Example]

CZKEM1. SetUserFace(1, '1001010201',50)

9.4 SSR_SetUserTmpExt

[Function]

SSR_SetUserTmpExt (LONG dwMachineNumber, LONG IsDeleted, BSTR dwEnrollNumber, LONG dwFingerIndex, BYTE* TmpData, VARIANT_BOOL* pVal)

[Purpose]

Upload fingerprint templates

[Parameter]

dwMachineNumber	machine number
IsDeleted	whether to delete the fingerprint template with the same work number of this user in deivce
dwEnrollNumber	work number (not beyond 24 bits)
dwFaceIndex	digit 15 to upload all fingerprints templates of this user
TmpData	fingerprint template
TmpLength	the size of uploaded data

[Return Value]

Return True for success, otherwise return False.

9.5 SSR_DelUserTmpExt

[Function]

SSR_DelUserTmpExt (LONG dwMachineNumber, BSTR dwEnrollNumber, LONG dwFingerIndex, VARIANT_BOOL* pVal)

[Purpose]

Delete fingerprint templates

[Parameter]

dwMachineNumber	machine number
dwEnrollNumber	worknumber (not beyond 24 bits)
dwFaceIndex	digit 15 to delete all fingerprint templates of this user.

[Return Value]

Return True for success, otherwise return False.

[Example]

CZKEM1. SSR_DelUserTmpExt (1, '1001010201',15)

9.6 SSR_DeleteEnrollDataExt

[Function]

SSR_DeleteEnrollDataExt (LONG dwMachineNumber, BSTR dwEnrollNumber, LONG dwBackupNumber, VARIANT_BOOL* pVal)

[Purpose]

Delete the enrolled data of user.

[Parameter]

dwMachineNumber	machine number
dwEnrollNumber	work number (not beyond 24 bits)
dwBackupNumber	additonal parameter
10	delete password data
11	delete fingerprint data
13	delete all fingerprint data at one time

[Return Value]

Return True for success, otherwise return False.

[Example]

CZKEM1. SSR_DeleteEnrollDataExt (1, '1001010201', 10)

9.7 GetDeviceStatus （the original function add two information values）

[Function]

```
GetDeviceStatus([in] LONG dwMachineNumber, [in] LONG dwStatus,
[in] LONG* dwValue)
```

[Purpose]

Get machine's storage information such as the number of administrators, the number of enrolled users, and the number of templates etc.

[Parameter]

dwMachineNumber	the number of operated machine

DwStatus

The types of machine status to be got are descripted as follows:

Value	Description
1	The number of administrators
2	The number of enrolled users
3	The number of fingerprint templates
4	The number of passwords
5	The number of management records of administrators
6	The number of attendance records
7	The fingerprint capacity
8	The user capacity
9	The record capacity
……	

(add)

21 The total number of faces

22 The face capacity

DwValue Get the values descripted by DwStatus.

[Return Value]

Return True for success, otherwise return False.

[Example]

```
Dim dwStatus As Integer
Dim dwValue As Integer
dwStatu = 1 'Count of administrators
CZKEM1.GetDeviceStatus MACHINENUMBER, dwStatus, dwValue
```

10. USB Communication

10.1、Connect_USB

[Function]

Connect_USB(long MachineNumber, VARIANT_BOOL* pVal)

[Purpose]

USB communication connection

[Parameter]

dwMachineNumber machine number

[Return Value]

Return True for success, otherwise return False.

[Example]

CZKEM1. Connect_USB (1)

Thanks for your concern on the product and we will continue to offer perfect service. Please enter our technology BBS and fulfil registration information, to help us to contact with you in time.
Our working hours is 9:00 am to 18:00 pm from Monday to Friday with attendance in Saturday, excluding legal holidays and Sunday.
We welcome your calls at any time and provide fast solutions for you.
Before call, Please confirm that all other applications used have been closed according to the manual.

Address: Room 1008, Pacific International Building, #106, Zhichun Road, Zhongguancun, Beijing, 100086 P.R.China
Post Code: 100086
Tel: 010-51518010, 51518011, 51518012, 51518013, 51518014
Fax: 010-51518015
E-mail：support@zksoftware.com, pyh@zksoftware.com

If you have any question about the product technology, please prepare the following information, so we can solve your problems and offer service in short time:
1. Software Name
2. Your Computer information, including brand, model, CPU, memory, CD-ROM and brand of mainboard.
3. Windows 95/98/NT4.0/2000/XP or other operating environments
4. Any application you are using
5. Details for your problem(s)

You may vist our website www.zksoftware.com to access Technical BBS and post your questions and precious suggestions. We will paste satisfied replies for you as earlier as I can.