

Manual for System Integrator & Software Developer

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Revision History

EDITION	ISSUED DATE	REMARK
1 st	24th April, 2006	Draft release
2 nd	4 th of September, 2006	• Release version 3.11 • Maximum number of characters can be send

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INTRODUCTION

"MOBITEK SMS API for Multiple GSM Modems" is part of the **SMS Gateway Development Kit (SMS GDK)**, it is given for free when 2 or more GSM modems are purchased. Therefore, MOBITEK System Sdn. Bhd. does not provide any support nor training to system integrator or software developer (SI/SD).

"MOBITEK SMS API for Multiple GSM Modems" is a **Component Object Model (COM)** that supports multiple GSM modems. System Integrator or software developer can use the COM to control 2 or more GSM modems **concurrently**.

ActiveX COM name: MobitekSMSAPIMM3.exe (ActiveX COM for Windows OS only)

COM Type: ActiveX EXE, multi-threaded out-of-process COM component

Version: 3.11

Pre-requisite:

- 1 System integrator, and software developer must possess
 - 1.1 programming skill;
 - 1.2 knowledge in *component object model (COM)* or *application programming interface (API)*; and
 - 1.3 knowledge in multi-threading, and concurrency.
- 2 Programming language that can use **SMS API for multiple GSM modems version 3:**
 - 2.1 Visual Basic
 - 2.2 Visual Basic .Net
 - 2.3 Visual C++
 - 2.4 Cold fusion
 - 2.5 Any programming language that can call **"MobitekSMSAPIMM3.exe"**

SMS API for multiple GSM modems version 3 is part of the **SMS Gateway Development Kit (SMS GDK)**. System integrator, and software developer can choose any development kit in the **SMS GDK** to build their own SMS Gateway.

BENEFITS

The benefits to system integrator, and software developer in using **SMS API version 3** are:

1. rapid development of a SMS Gateway
2. *concurrently* controlling 2 or more GSM modems connected to a single server
3. full control of the message flow, business logic, and the features of SMS Gateway
4. can decide how to handle incoming message – trigger an event, or launch an external application
5. can decide where to store the incoming message – in database, in text, or in XML
6. can decide who should receive outgoing message, when to send, what the send
7. integrate SMS feature with external software application

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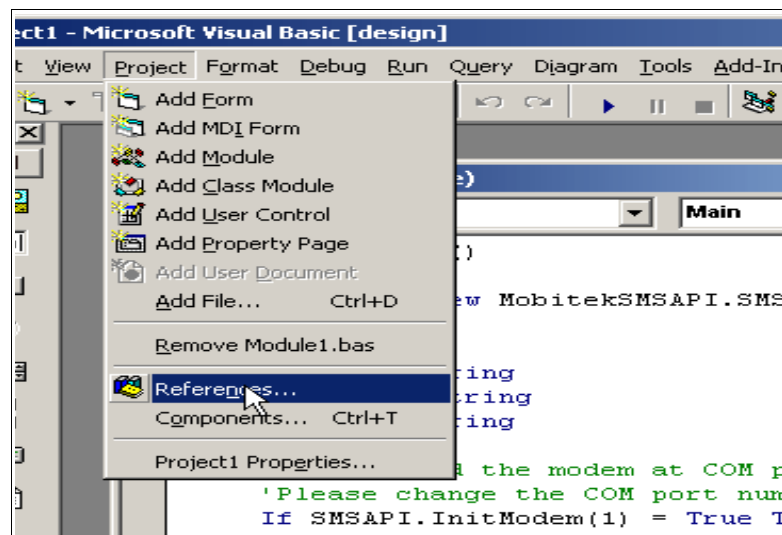
FEATURES

1. connect GSM modem with PC/Server
2. allow SI/SD to input PIN to unlock SIM
3. check whether GSM modem is connected to GSM network
4. send SMS (maximum 160 characters, and in text format only)
5. receive SMS (in text format only)
6. turn on, and off the delivery status report
7. obtain delivery status report
8. disconnect GSM modem from PC/Server

REFERENCING THE API

Before you can start using the API, you must reference to the API. Below is an Visual Basic example:

1. Go to Project > references



2. Then check on **"MobitekSMSAPIMM3"**

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SECTION 1: API FUNCTIONS

There are 9 main Application Programming Interface (API) functions:

1.1. InitModem (COM port, optional SIM PIN)

- a) To initialise and to connect PC to the GSM Modem.
- b) Accepts 2 arguments
 - COM Port** – integer
 - SIM PIN** – string (optional)
- c) Return value is an integer:
 - = **0 (Fail)** if connection failed
 - = **1 (OK)** if connection is successfully established
 - = **2 (PINRequired)** if connection failed, because SIM PIN is required
 - = **3 (PINWrong)** if connection failed, because incorrect PIN is entered
 - = **4 (SIMBlocked)** if connection failed, because SIM card has been blocked
 - = **5 (SIMError)** if connection failed, because SIM card has problem or error

1.2. ConnectToGSM ()

- a) To check whether the GSM modem is connected to GSM network.
- b) Return value is:
 - = **TRUE** if connected, else
 - = **FALSE**

1.3. ReadSMS ()

- a) To read incoming SMS.
- b) Return value is:
 - = **TRUE** if successfully read or there is incoming message, else
 - = **FALSE** if there is no incoming message

1.4. SendSMSWC (mobile number, outgoing message) = True or False

- a) To send out SMS using Wavecom or iTegno GSM Modem.
- b) Maximum number of characters is 160. Format is text.
- c) Return value is:
 - = **TRUE** if SMS is successfully sent, else
 - = **FALSE**

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1.5. SendSMSWC2 (mobile number, outgoing message) = True or False

- a) To send SMS with Delivery Status Report (to be used by Wavecom and iTegno GSM modem only)
- b) Maximum number of characters is 160. Format is text.
- c) Return value is:
 - = **TRUE** if SMS is successfully sent, else
 - = **FALSE**
- d) You must call the **DeliveryReportOn()** function first before sending out SMS and getting delivery status report

1.6. DeliveryReportOn ()

- a) To turn ON the SMS delivery status report.
- b) Return value is:
 - = **TRUE** if it is successfully turn on, else
 - = **FALSE**

1.7. DeliveryReportOff ()

- a) To turn OFF the SMS delivery status report.
- b) Return value is:
 - = **TRUE** if it is successfully turn off, else
 - = **FALSE**

1.8. GetDeliveryRerpot ()

- a) To get delivery status report.
- b) Return value is:
 - = **TRUE** if there is delivery report, else
 - = **FALSE** if there is no delivery report
- c) You must call the **DeliveryReportOn()** function first before sending out SMS and getting delivery status report

1.9. CloseModem ()

- a) To close the connection from PC to modem
- b) Return value is:
 - = **TRUE** if ok, else
 - = **FALSE**

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SECTION 2: API PROPERTIES

Properties are related to the following API functions:

2.1. Read SMS Properties

When **ReadSMS ()** returns **TRUE**, then retrieve values from the following properties:

- a) MN = Mobile number of sender**
- b) MSG = Message sent by the sender**
- c) SCTS = SMSC (SMS Centre) time stamp – time of the message received by SMSC in the format of "yy/mm/dd hh:mm:ss"**
- d) SMSC = SMSC (SMS Centre) number**

No need to retrieve the above values if **ReadSMS()** return **FALSE**

2.2. Send SMS Properties

When **SendSMSWC2()** returns **TRUE**, then retrieve value from the following property:

- a) MR = Message Reference Number**
 - **MR** is automatically generated by SMSC (SMS Centre) upon successfully calling the **SendSMSWC2()** function as described in **Section 1.5**. Use this number to match with property **DRMsgRef** - number from the delivery status report as described in **Section 2.3.d)**
 - The **MR** has a range of 0 to 255. And it is incremental. Once the number reaches 255, it will start from 0 and increased by 1 for each SMS successfully sent
 - No need to retrieve **MR** if **SendSMSWC2()** return **FALSE**

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2.3. GetDeliveryRerpot ()

When *GetDeliveryRerpot ()* returns **TRUE**, then retrieve values from the following properties:

- a) **DRFDate** = date of SMS forwarded to recipient's mobile number by SMSC
- b) **DRFTime** = time of SMS forwarded to recipient's mobile number by SMSC
- c) **DRMNRRecipient** = recipient's mobile number
- d) **DRMsgRef** = Message Reference Number. Use this number to match with the property "MR" - message reference number generated after calling the *SendSMSWC2()* function
- e) **DRRDate** = date of SMS received by SMSC
- f) **DRRTime** = time of SMS received by SMSC
- g) **DRStatus** = status of the outgoing SMS, value can be:

= DELIVERED if SMS is delivered to recipient's mobile by SMSC

= UNDELIVERED if SMS is not delivered by SMSC

= UNKNOWN if status is unknown

- The following statement illustrates the above properties when the outgoing SMS is successfully delivered to the recipient, i.e. **DRStatus** = **DELIVERED** :

*The status of your outgoing SMS with reference number, **DRMsgRef**, is **DRStatus**.*

*Your outgoing SMS was received by the SMS Centre on **DRRDate**, at **DRRTime**, and was successfully delivered to **DRMNRRecipient**, on **DRFDate**, at **DRFTime**.*

- The following statement illustrates the above properties when the outgoing SMS is **NOT** successfully delivered to the recipient, i.e. **DRStatus** = **UNDELIVERED** :

*The status of your outgoing SMS with reference number, **DRMsgRef**, is **DRStatus**.*

*Your outgoing SMS was received by the SMS Centre on **DRRDate**, at **DRRTime**, and was NOT successfully delivered to **DRMNRRecipient**.*

- The following statement illustrates the above properties when the outgoing SMS does not have any status, i.e. **DRStatus** = **UNKNOWN** :

*The status of your outgoing SMS with reference number, **DRMsgRef**, is **DRStatus**.*

*Your outgoing SMS was received by the SMS Centre on **DRRDate**, at **DRRTime**, and no status is available.*

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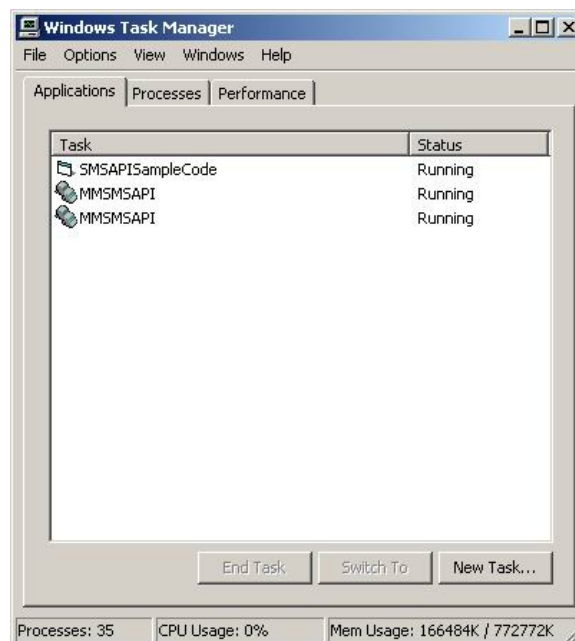
SECTION 3: SET UP

- Connect the 2 or more GSM modems into 1 PC (running on Windows OS)
- Install drivers for GSM modems if necessary (please refer to the *SMS GDK CD*)
- Determine the COM port of each GSM modem (please refer to the *SMS GDK CD*)
- Click Setup.exe to install "**MobitekSMSAPIMM3.exe**"

SECTION 4: PROGRAMMING GUIDE

Depending on the number of modems connected to a server, SI/SD must create an instance of **MobitekSMSAPIMM3** for each modem. For example, if there are 2 modems connected to a server, then SI/SD needs to create 2 instances of **MobitekSMSAPIMM3** for the 2 modems. In Visual Basic, the SI/SD creates an instance of **MobitekSMSAPIMM3** by using the keyword "**New**" or "**CreateObject**". Each instancing will have its own thread, so 2 instances will create 2 threads.

A way to check visually the total number of **MobitekSMSAPIMM3** created is by looking at the "**Applications**" tab in "**Windows Task Manager**". So if 2 modems are connected, and 2 instances of **MobitekSMSAPIMM3** are created, then there should be 2 icons with status "**Running**" as shown below:



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SI/SD can write a programme to execute the following API functions concurrently (depends on system integrator's client application coding):

Modem 1	Modem 2
Send SMS	Send SMS
read SMS	Send SMS
Send SMS	Read SMS
Read SMS	Read SMS

Note : It is up to system integrator and software developer to write their application in a manner to utilise this multi-threaded ActiveX COM. Here are some suggested ways:

Suggested Method 1 - Synchronous process

- Client Application : MODEM.exe
- MODEM.exe creates 2 instances of "**MobitekSMSAPIMM3.exe**" to control the 2 modems

Suggested Method 2 - Synchronous and Concurrent process

- client Application : MODEM1.exe and MODEM2.exe
- MODEM1.exe creates 1 instance of "**MobitekSMSAPIMM3.exe**" to control the modem no. 1
- MODEM2.exe creates 1 instance of "**MobitekSMSAPIMM3.exe**" to control the modem no. 2
- Both client applications -- MODEM1.exe, and MODEM2.exe are run at the same time, then they will control the 2 modems concurrently

Please refer to the CD for sample code in Visual Basic.

SECTION 5: DEPLOYMENT

When you want to deploy your SMS application on another PC, you need to run the setup file (**setup.exe**) for "**MobitekSMSAPIMM3.exe**". Or you can use a Installer Maker (e.g. Wise Installer) to include the setup.exe with your application.

SECTION 6: TERMS AND CONDITIONS

- 6.1 **SMS API for multiple GSM modems version 3** is given free of charge. It is completely free of any registration, licensing or deployment fees. It may be deployed freely for use with any third-party software, whether for commercial purpose or not. Therefore, no warranty and support is given.
- 6.2 **SMS API for multiple GSM modems version 3** must be used together with the GSM Modem supplied.
- 6.3 MOBITEK System shall not be held liable for any loss or damaged as a result of using the **SMS API for multiple GSM modems version 3**.

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SECTION 7: SUPPORT

All GSM modems purchased from us comes with free 12 months **e-mail support** with the following terms and conditions:

7.1 We support matters related to modem.

7.2 We support only the **API Functions** as described in **Section 1**, and **API Properties** as described in **Section 2**.

7.3 Support does not cover technical issues such as programming (e.g. how do I write a VB programme to send out SMS) and integration (e.g. how do I write a VB programme that talks to a database).

All e-mail must contain the following information:

- Company name
- Invoice number
- Description of problem

and send it to
support@mobitek.com.my

We will response within **3 working days**.

After 12 months, a support fee is chargeable.