



Service Tax

## *Network SDK*

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## Document Information

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### Document Control

Version	Date Changed	Completed By	Description of Changes
1.1	2011/05/18	Jason Chan	First Draft
1.2	2011/08/08	Lee Wee Yan	Updated Chapter 2 Integration to reflect changes in r418 posapp release.
1.3	2011/08/11	Lee Wee Yan	Updated Chapters 2 and 3 to reflect changes in r419 posapp release.
1.4	2011/09/20	Sia Elaine	Updated section 1.1.2 for default GPRS url. Updated Appendix A for digi apn.
1.5	2011/09/27	Sindhu Kumar	Appendix A: USB Modem (Huawei E1550 HSDPA USB Modem) : update apn setting to digimyg & checked option for minimize digi dashboard on windows startup
1.6	2011/09/28	Sindhu Kumar	Updated changes on API mapping of SalesTax, Amt A, Amt B column and its description
1.7	2012/04/25	Sindhu Kumar	Update to remove setting of posdialupentry as default connection
1.8	2012/09/21	Lee Wee Yan	Added Appendix B: A self-contained environment
1.9	2012/11/05	Sia Elaine	Added Appendix C: EMS Diagnostic Tool
2.0	2012/11/14	Lee Wee Yan	Updated testing URL path and Date Time Field to pass in
2.2	2014/11/05	Sia Elaine	Updated salesinfo format for GST
2.3	2015/05/04	Sia Elaine	Updated salesinfo format for GST (Added summary information)
2.4	2015/06/15	Sia Elaine	Updated Amt C for rounding
2.5	2015/09/28	Marliana	Updated installer screenshot, more API examples

Version	Date Changed	Completed By	Description of Changes
2.6	2016/02/17	Marliana	More API examples

## Review History

Version	Date Reviewed	Reviewer's Name	Reviewer's Title/Role
<0.00>	<mm/dd/yyyy>	<FirstName LastName>	

## Owners and List of Contacts

Name	Email	Phone	Role
			Project Manager/ Tech Lead
			IT Ops Manager
			Business Sponsor
			QA

## Related Documents

Ref	Document Name / URL

## Release History

Release notes should reflect all information (changes to business rules, new features, new tables, SVN version/tag) in new deployment.

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# 1 Installation

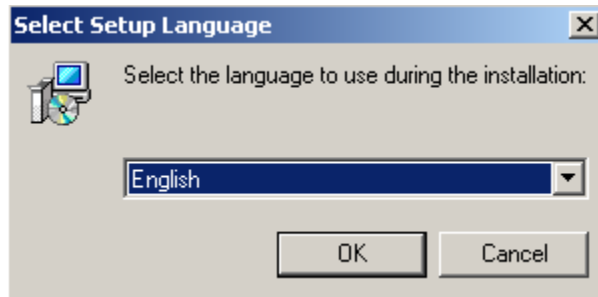
## Prerequisite

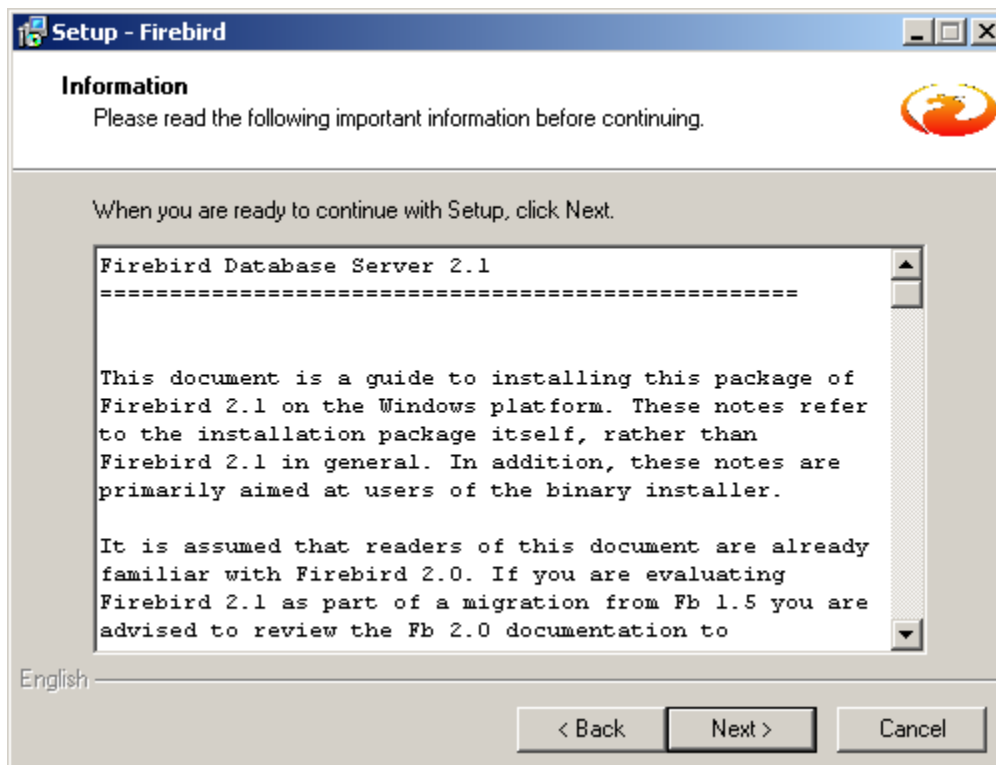
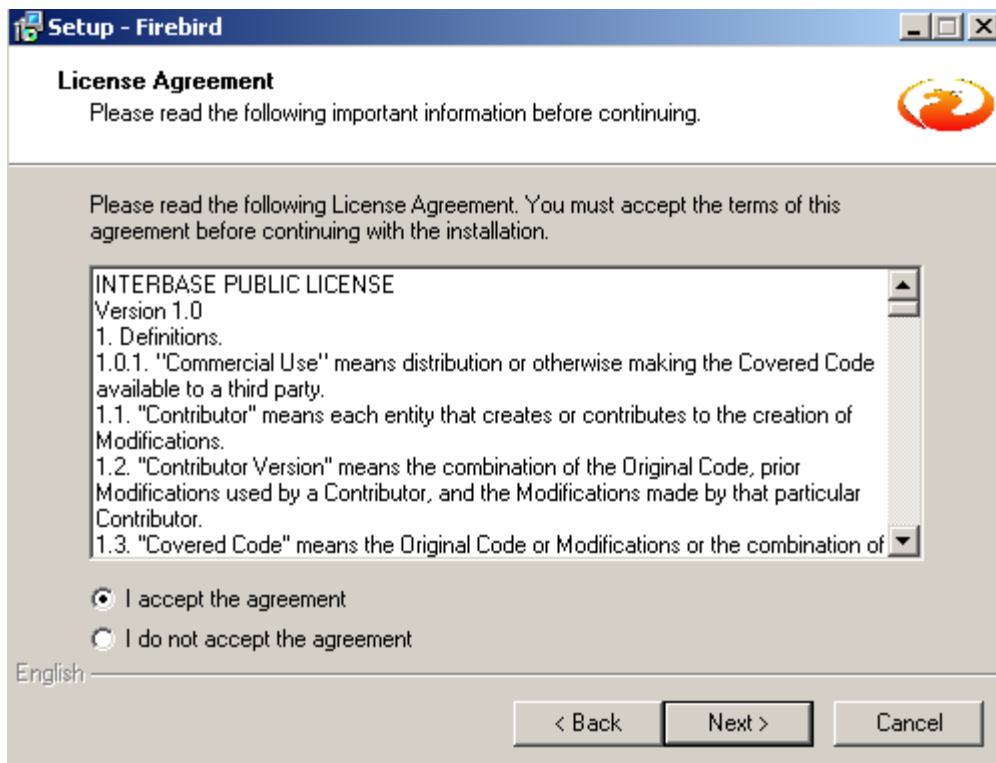
Type	Value	Download
Operating System	Windows XP SP2	
<b>Windows Installer</b>	<b>Windows Installer 3.1</b>	<a href="http://www.microsoft.com/download/en/details.aspx?displaylang=en&amp;id=25">http://www.microsoft.com/download/en/details.aspx?displaylang=en&amp;id=25</a>
<b>.NET Framework</b>	<b>.NET 2.0</b>	<a href="http://www.microsoft.com/download/en/details.aspx?id=19">http://www.microsoft.com/download/en/details.aspx?id=19</a>
.NET Framework	.NET 3.5 and above	
DB	Firebird-2.1.3.18185_0_Win32.exe	<a href="http://sourceforge.net/projects/firebird/files/firebird-win32/2.1.3-Release/Firebird-2.1.3.18185_0_Win32.exe/download">http://sourceforge.net/projects/firebird/files/firebird-win32/2.1.3-Release/Firebird-2.1.3.18185_0_Win32.exe/download</a>
API	POSAPIPOSSenderSetup	<a href="https://mint.myeg.com.my/staxres/index.php">https://mint.myeg.com.my/staxres/index.php</a> under Download / Take the latest version
API utility	POSAPITestApp	<a href="https://mint.myeg.com.my/staxres/index.php">https://mint.myeg.com.my/staxres/index.php</a> under Download / Take the latest version
EMS Terminal		This is a hardware communication device attached to the server PC on premise provided by MYEG.
EMS Mini-Terminal		This is a hardware communication device attached to client PC provided by MYEG.
EMS Terminal utility	DongleIDReaderApp.exe	
EMS Terminal utility	POSAPIConfig	This is an application to edit network setting; server IP & port

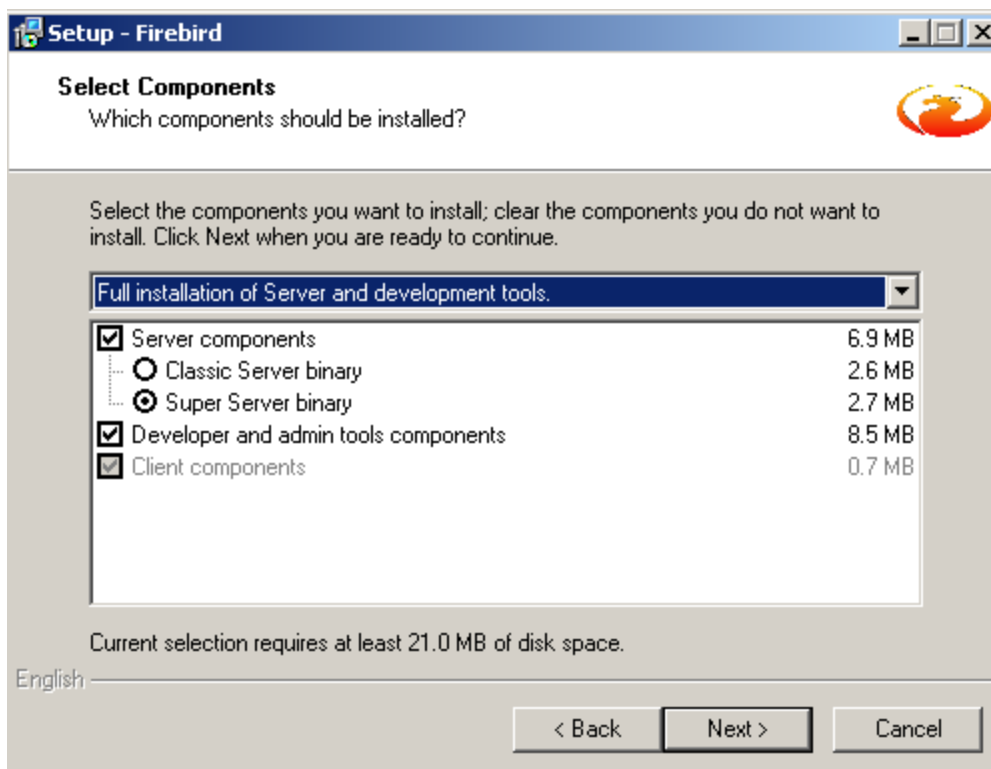
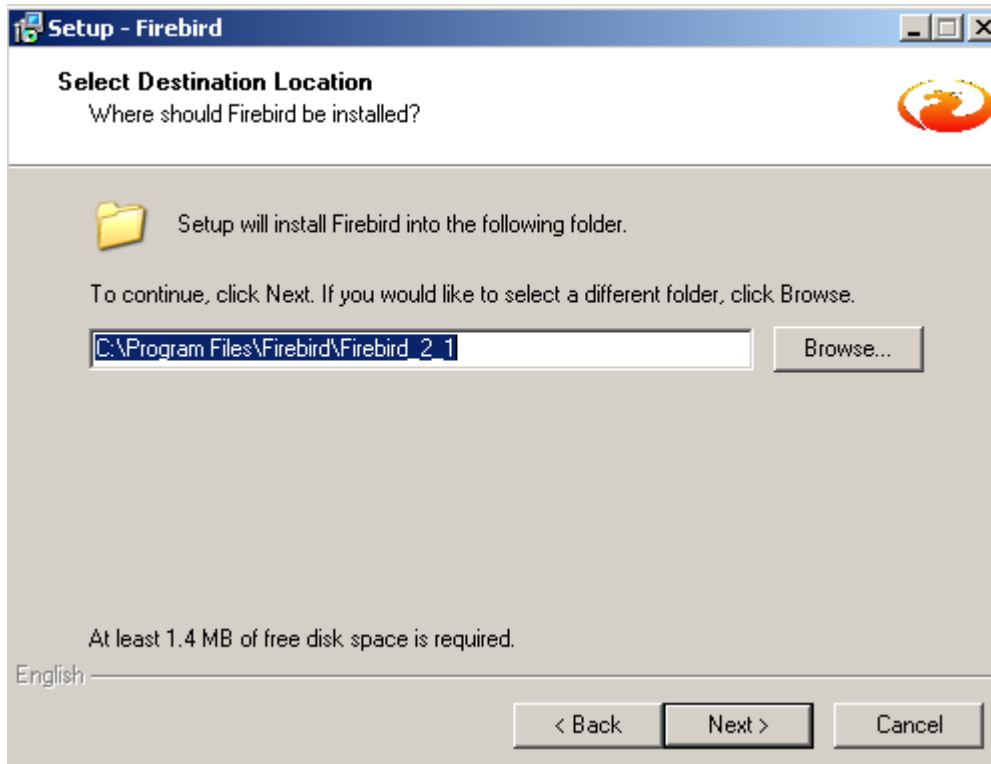
## 1.1 Software Installation steps

### 1.1.1 Firebird

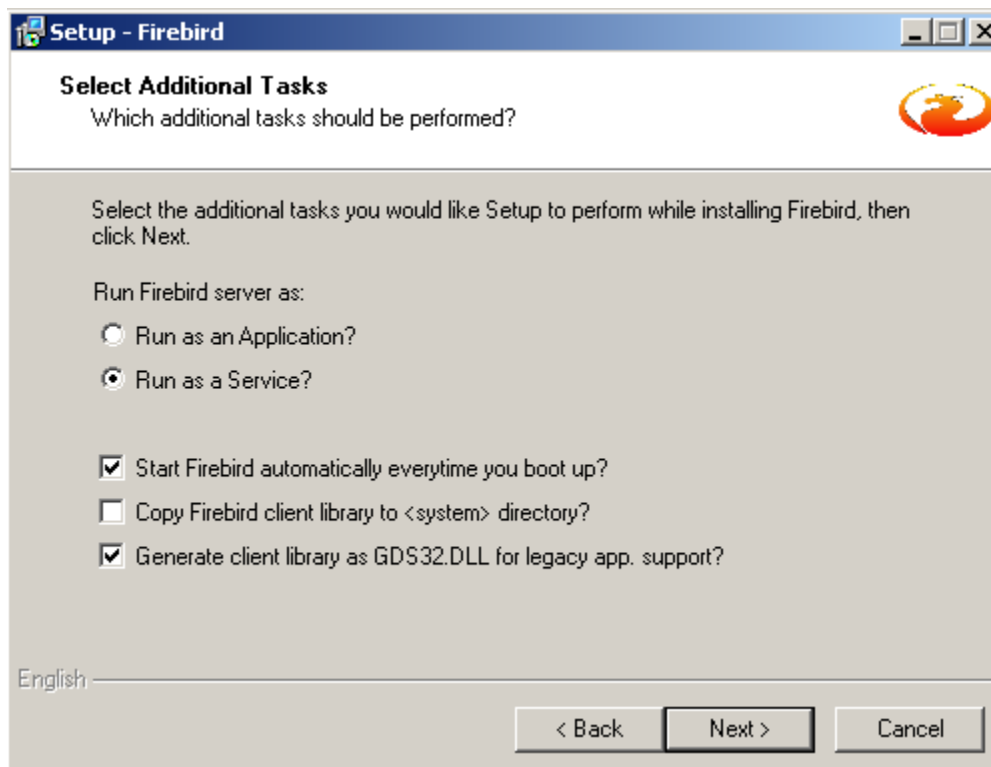
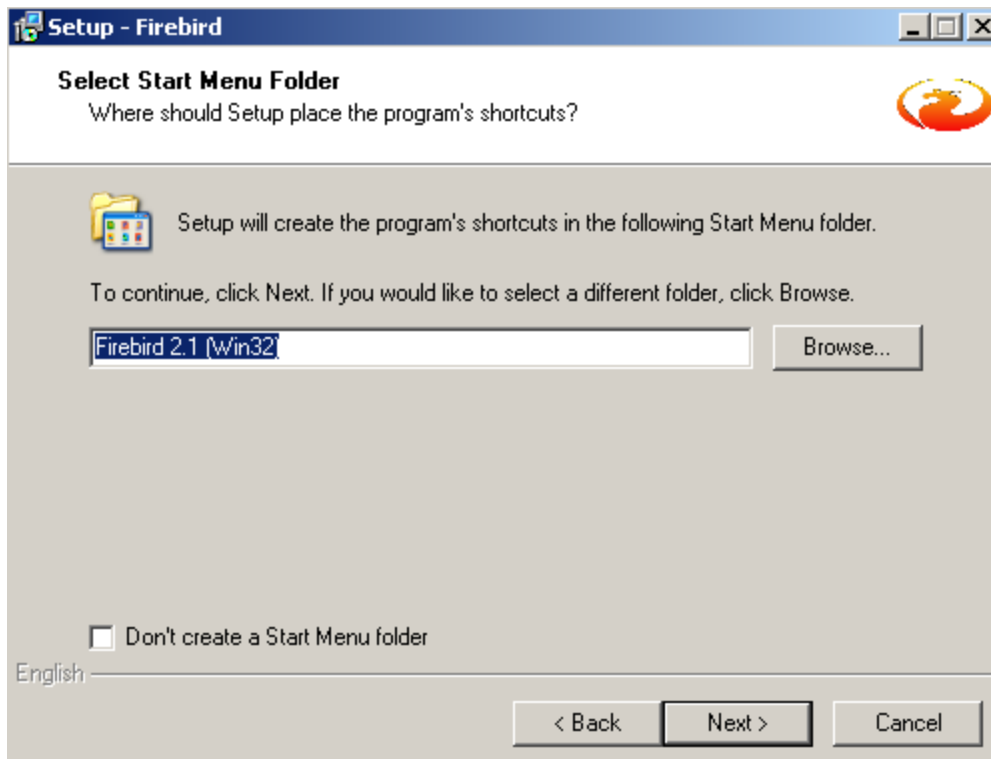
Click on Firebird-2.1.3.18185\_0\_Win32.exe to start the installation

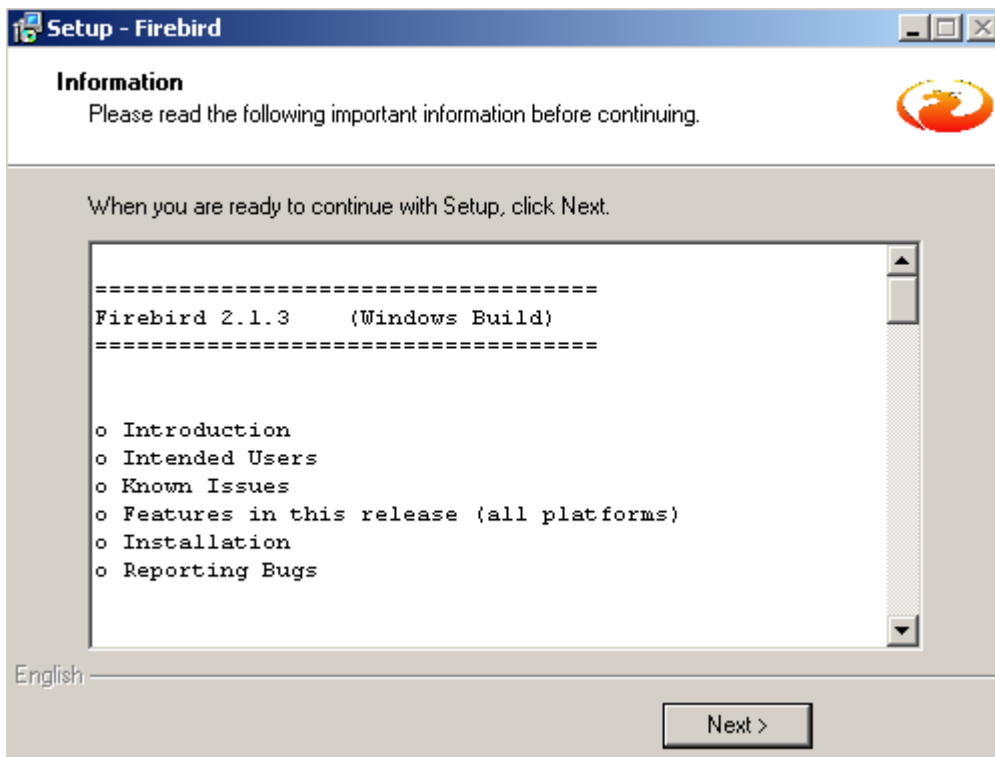
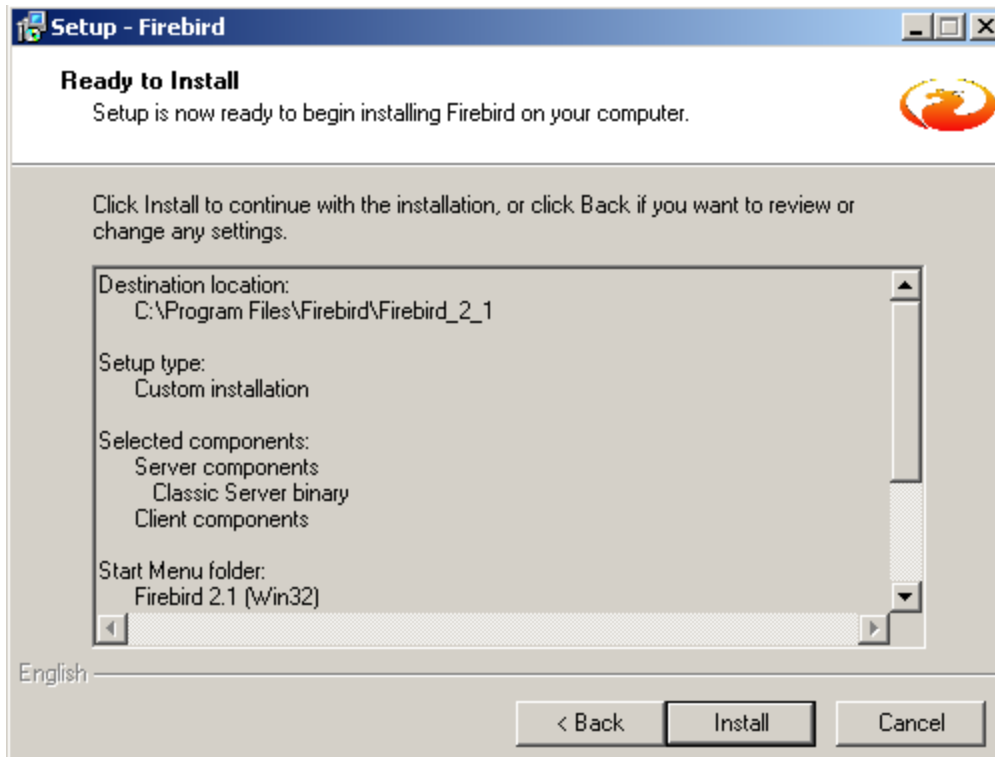














### 1.1.2 ServiceTax API

Unzip the EMS-r<version>.zip into a temporary folder. Then run the EMS-<version>/POSAPIPOSSender/setup.exe







Send options

Transactions Service URL :

Transactions Service URL (Secondary) :

E-mail :

The basic sending mechanism :

The alternative sending mechanism :

GPRS Transactions Service URL :

GPRS Transactions Service URL (Secondary) :

Location :

### ***Testing URL***

TransactionsServiceURL: <http://mintdev.myeg.com.my/bstaxws/posws>

**GPRS Transaction Service URL:** [http:// 192.168.140.120/bstaxws/posws](http://192.168.140.120/bstaxws/posws)

Email: [ems@myeg.com.my](mailto:ems@myeg.com.my)

### ***Live Production URL***

TransactionsServiceURL: <http://mint.myeg.com.my/staxws/posws>

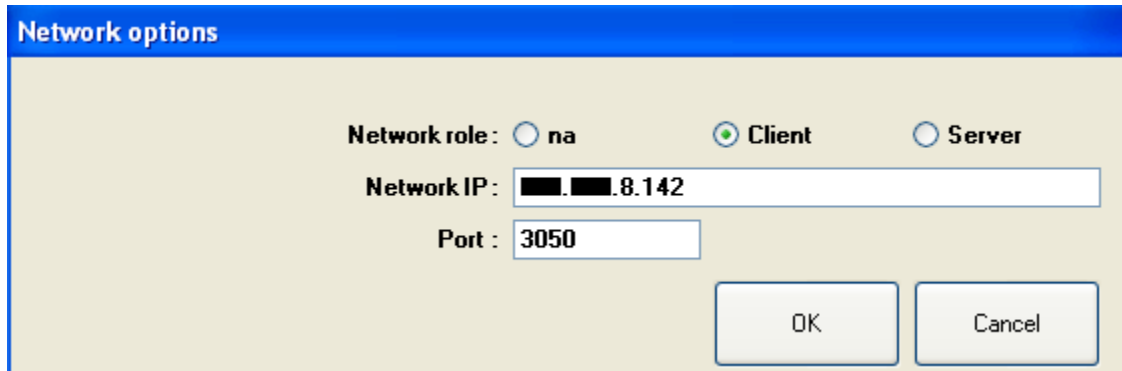
**GPRS Transaction Service URL:** <http://192.168.140.220/staxws/posws>

Email: [ems@myeg.com.my](mailto:ems@myeg.com.my)

For **network** setup, there can be any number of clients and only 1 server on a network (LAN).

### Client Setup

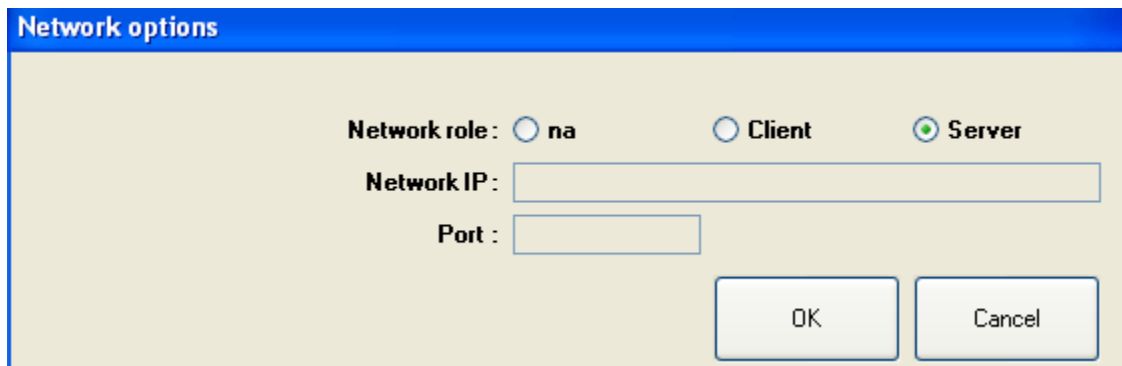
To set up as a client, select Client radio button and enter the network IP of host machine (Server) and firebird db port which is 3050 and proceed to click OK and finish of the installation process.



The dialog box titled "Network options" has a blue header. It contains three radio buttons for "Network role": "na", "Client" (which is selected), and "Server". Below these, there are two text input fields: "Network IP:" with the value "8.142" and "Port:" with the value "3050". At the bottom right, there are two buttons: "OK" and "Cancel".

### Server Setup

To set it up as server, select Server radio button and proceed to click OK and finish of the installation process.

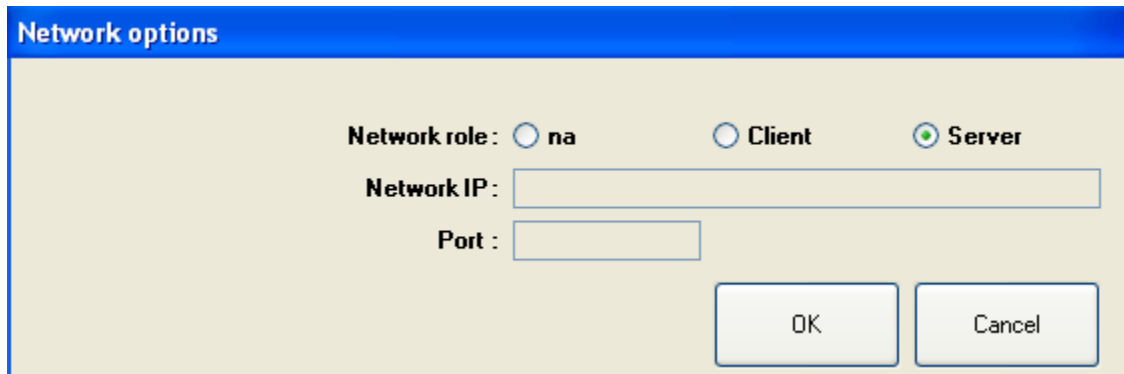


The dialog box titled "Network options" has a blue header. It contains three radio buttons for "Network role": "na", "Client", and "Server" (which is selected). Below these, there are two empty text input fields: "Network IP:" and "Port:". At the bottom right, there are two buttons: "OK" and "Cancel".



For **standalone** setup, single terminal, select server mode.

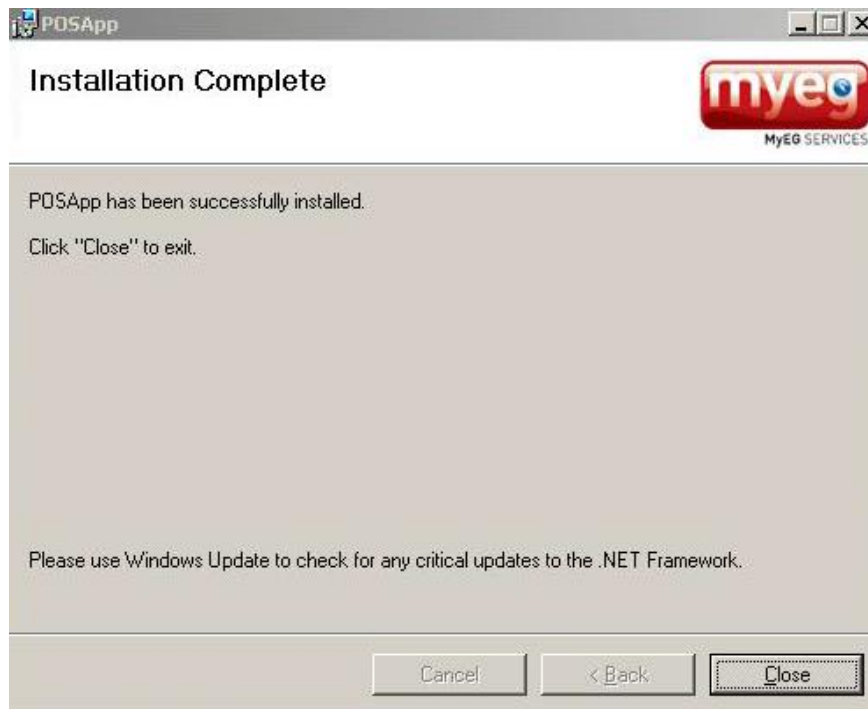
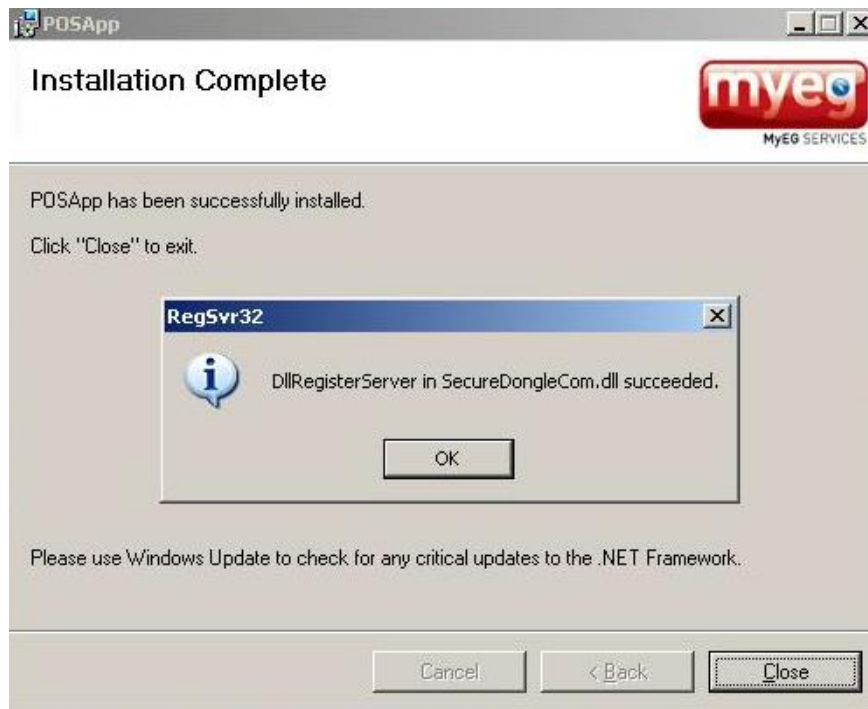
To set it up as standalone, select Server radio button and proceed to click OK and finish of the installation process.



The 'Network options' dialog box has a blue title bar. It contains three radio buttons for 'Network role': 'na', 'Client', and 'Server'. The 'Server' radio button is selected. Below these are two text input fields: 'Network IP:' and 'Port:'. At the bottom right are 'OK' and 'Cancel' buttons.



The 'Installing POSApp' window has a title bar with the application icon and name. It features the 'myeg' logo and 'MyEG SERVICES' text in the top right. The main area displays the text 'POSApp is being installed.' and 'Please wait...' above a progress bar that is approximately 80% full. At the bottom, there are three buttons: 'Cancel', '< Back', and 'Next >'.



**Note: For Windows Embedded 2009, you will need to place the SHTASK.EXE on the windows system directory before you start the installation.**

## POS API Test App

Run the EMS-<version>/POSAPITestApp/POSAPITestApp.exe to check if you can successfully interact with the POSAPI. Once you are able to insert some transactions, you may proceed to integrate to the API based on the instruction in Section 2.

The screenshot displays the 'POS API Test App' window. The main window has a title bar and a menu bar. Below the menu bar is a table with columns: TransactionId, RetailId, ReceiptNumber, TimeStamp, VoidTimeStamp, SalesInfo, SalesAmount, and Service. The table is currently empty. A dialog box titled 'Add to FB Transaction Form' is open in the center. The dialog box contains the following fields and values:

- Transaction ID : 2011721162511899245
- Retail ID : TESTTRX
- Receipt number : r2011721162511899245
- Transaction Time Stamp : 21 July 2011 16:02:51
- Sales Amount : 100
- Service Tax Amount : 6
- Bill Discount Amount : 5
- Other Charges : 4
- Sales Tax Amount : 3
- AmtA : 0
- AmtB : 0
- AmtC : 0
- Sales Info : simple test transaction

At the bottom of the dialog box are two buttons: 'Add' and 'Cancel'. Below the dialog box, in the main window, are two buttons: 'Add to FB base transaction' and 'Close'.

POS API Test App

Terminal Transactions

	TransactionId	RetailId	ReceiptNumber	TimeStamp	VoidTimeStamp	SalesInfo	SalesAmount	Service
▶	2011721162511...	TESTTRX	r2011721162511...	7/21/2011 4:02 ...		simple test transa...	100	6

Call Stack

Start Add Transaction: Transaction ID: 2011721162511899245  
End Add Transaction: Transaction ID: 2011721162511899245

Add to FB base transaction

Close

### 1.1.3 Uninstallation of POSApp

During the uninstallation process, POSApp application will be uninstalled. However, the folder structure (C:\Program Files\POSApp\..) will remain, thus the firebird db with existing transaction records (send & unsend record) will remain when a new installation of EMS is performed.

Remove the firebird db, POSTCAPIDB.FDB at the following path below:

C:\Program Files\POSApp\POSApp\POSAPI

or the entire POSApp folder **\*only if the new EMS release have changes in DB schema/structure.**

Please make sure all transaction records in existing firebird db are sent to web service before removing the firebird db or the POSApp folder for fresh installation of POSApp application.

### 1.1.4 Install the EMS Terminal on Server PC

Insert EMS Terminal into POS USB port

Install Modem software driver. Please refer to Appendix A to perform and complete the installation.

Reboot the POS system

EMS Terminal Testing

Run DongleIDReaderApp to confirm the ID matches the installation details.

Run POSAPITestApp.exe. Add a dummy transaction.

You can test to send transaction data to EMS server, go to Control Panel > Schedule Tasks and Right-click on "POSSender Run" and click Run (may take a minute or longer depends on signal). Verify the transaction is sent by checking in the Computer (right-click) > Manage > Event Viewer > Application. Look for logs generated by the source POSSenderConsoleApp.

## 1.1.5 Install the EMS Mini-Terminal on Client PC

Insert EMS Mini- Terminal into POS USB port

EMS Mini-Terminal Testing

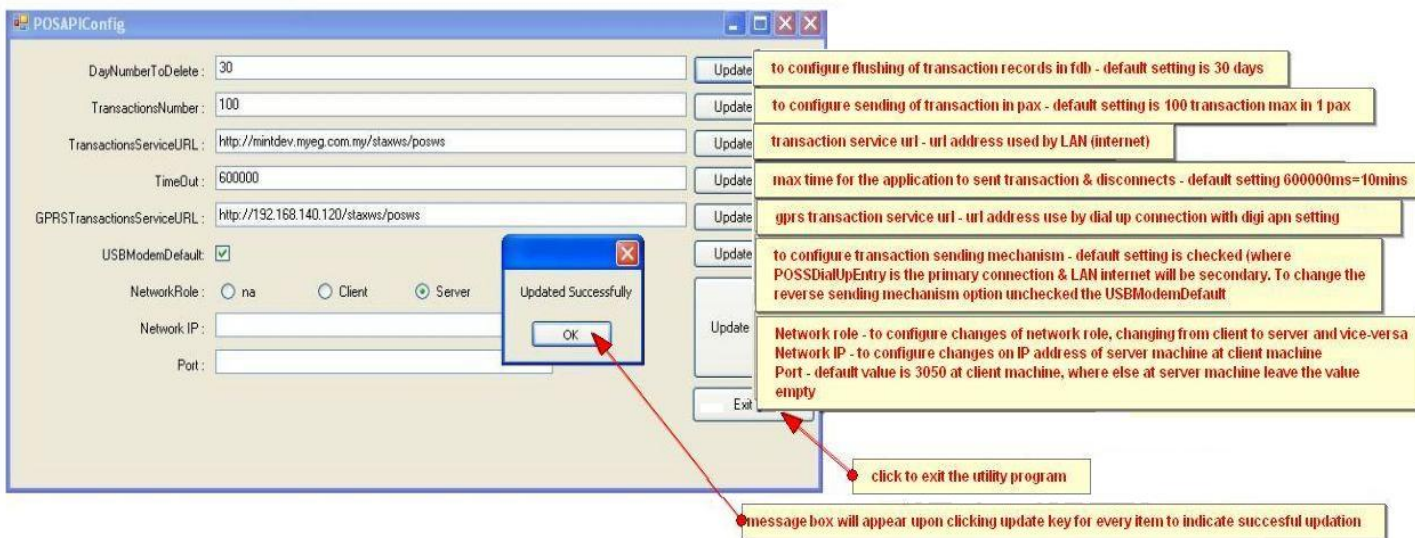
Run DongleIDReaderApp to confirm the ID matches the installation details.

Run POSAPITestApp.exe. Add a dummy transaction.

You can test to send transaction data to ServerPC, go to Control Panel > Schedule Tasks and Right-click on "POSSender Run" and click Run (may take a minute or longer depends on signal). Verify the transaction is send by checking in the Computer (right-click) > Manage > Event Viewer > Application. Look for logs generated by the source POSSenderConsoleApp.

## 1.1.6 POSAPIconfig

This utility tool comes with the posapi installer in exe format (POSAPIconfig.exe) under POSAPIconfig folder. The tool is used to edit some of the configurations/settings of posapi application (see below screenshot for description).



## 2. Integration with POSAPI (Public Methods & Example Code)

Once you have completed the installation, you can access the public methods from POSAPI COM library.

- ITransactionManager (E19F3481-7DEE-4499-BD00-A66D32B68A14)
- TransactionManager (17A7A78C-473D-4d95-9CB4-B99100535C75)

Public Methods	Return Values	Remarks
<b>APITransactionResult</b> <b>StoreTransaction</b> ( string TransactionId, string RetailId, string ReceiptNumber, DateTime TransactionTimestamp, string SalesInfo, decimal SalesAmount, decimal ServiceTaxAmount, decimal SalesTaxAmount, decimal BillDiscountAmount, decimal OtherCharges, decimal AmtA, decimal AmtB, decimal AmtC )	Which returns public class <b>APITransactionResult</b> <pre>{     public string RegisterId;     public string ErrorMessage;     public bool Succes; }</pre>	<b>The mandatory fields are:</b> <b>Retail,</b> <b>ReceiptNumber,</b> <b>TransactionTimeStamp,</b> <b>SalesInfo,</b> <b>SalesAmount,</b> <b>ServiceTaxAmount,</b> <b>For Taxable Amount. Please</b> <b>use SalesTaxAmount,</b> <b>For Service Charge, please</b> <b>use OtherCharges ,</b> <b>For Non-taxable amount,</b> <b>please use AmtA,</b> <b>For Subtotal Amount (sales</b> <b>amount exclusive of all</b> <b>tax), please use AmtB,</b> <b>For Rounding Amount,</b> <b>please use AmtC</b>
<b>APITransactionResult</b> <b>StoreTransactionDouble</b> ( string TransactionId, string RetailId, string ReceiptNumber, DateTime TransactionTimestamp, string SalesInfo, double SalesAmount, double ServiceTaxAmount, double SalesTaxAmount, double BillDiscountAmount, double OtherCharges, double AmtA, double AmtB, double AmtC )	Which returns public class <b>APITransactionResult</b> <pre>{     public string RegisterId;     public string ErrorMessage;     public bool Succes; }</pre>	NOTE: please use method StoreTransaction instead of StoreTransactionDouble unless your language (i.e. VB6) does not support decimal data type.

Fields	Type	Remarks
TransactionId	Numeric	Not in use, please pass in "" – which is empty string.
RetailId	Alphanumeric	The identification of the terminal within the business and premise. Alphanumeric only.
ReceiptNumber	Alphanumeric	POS receipt number (Alphanumeric only.)  Note: Max string length is 64.
TransactionTimestamp	DateTime	Date and Time of Sales. <b>For F&amp;B, please use Closing Time (Settle Bill Time).</b>
SalesInfo	Text	<p>The sales info must contain all the line items for the transaction and also summary of each taxcode.</p> <p><b>Format:</b></p> <p>ItemsDescription Qty UnitPrice T(tax.Incl)/F(tax.Excl) Discount TaxCode(Eg SR) TaxRate GST Taxable Total IndustryCode&lt;&gt;Summary* TaxCode TaxRate GST Taxable&lt;&gt;</p> <p><b>Where the character &lt;&gt; is the separator between each line item</b></p> <p><b>Example:</b></p> <p>A transaction consist of</p> <p>2 x steak \$10.00 (tax)</p> <p>3 x chocolate shake \$5.00 (tax)</p> <p>1 x extra table \$ 5.00 (non-tax)</p> <p>The Sales Info should contain the above details.</p> <p>Steak 2 10.00 F 0.00 SR 0.06 1.20 20.00 21.20 602&lt;&gt;Chocolate shake 3 5.00 F 0.00 SR 0.06 0.90 15.00 15.90 602&lt;&gt;Extra table 1 5.00 F 0.00 ZR 0.00 0.00 5.00 5.00 602&lt;&gt; Summary* SR 0.06 2.10 35.00&lt;&gt;</p>



		<p>Summary* ZR 0 0 5.00&lt;&gt;</p> <p>For voiding a transaction, the amount in sales info should be negative amount:</p> <p>Steak 2 -10.00 F 0.00 SR 0.06 -1.20 -20.00 -21.20 602&lt;&gt;Chocolate shake 3 -5.00 F 0.00 SR 0.06 -0.90 -15.00  -15.90 602&lt;&gt;Extra table 1 -5.00 F 0.00 ZR 0.00 0.00 -5.00 -5.00 602&lt;&gt;</p> <p>Summary* SR 0.06 -2.10 -35.00&lt;&gt;</p> <p>Summary* ZR 0 0 -5.00&lt;&gt;</p>
SalesAmount	Decimal	Actual sales inclusive of all taxes (After rounding)
ServiceTaxAmount	Decimal	Service Tax Imposed [GST]
SalesTaxAmount	Decimal	Taxable amount (amount for taxable sales item)
BillDiscountAmount	Decimal	Bill discount (per bill, not per item) if applicable
OtherCharges	Decimal	Other imposed charges (i.e. in food and beverage industry: Service Charges)
AmtA	Decimal	Non-taxable amount (amount for non-taxable sales item)
AmtB	Decimal	Subtotal Amount (total amount exclusive of all tax)
AmtC	Decimal	Rounding Amount of Total Sales

Fields	Type	Remarks
ErrorMessage	String	
Succes	Boolean	
RegisterId	String	<p>The value RegisterID should be printed out on the receipt as</p> <p>EMSRef: &lt;RegisterID&gt;</p>

### Example of Exclusive Bill with Service Charge:

Date: 01/07/2015 Time: 6:48:08PM

INV No: 287146

Table: 39-Dine In

Counter: C1 Pax: 1

Staff: 1

Description	Unit Price	Unit Discount	Amount	Tax
B0103-Caffe Macchiato	RM 5.19	1 0.00	RM5.19	SR
B0311-Iced English Breakfast Tea	RM 6.13	1 0.00	RM6.13	ES
Qty: 2	Total Excl GST		RM11.32	
	Discount:		RM0.00	
	After Discount:		RM11.32	
	Service Charge (Excl GST):		RM1.13	
	GST:		RM0.38	
	Item Value Adj:		RM0.00	
	Total Sales:		RM12.85	

Tendered: RM12.85

Change : RM0.00

EMS REF:

150701184824\_287146\_ND6105

+038

GST Summary	Excl Amount(RM)	Tax(RM)
ES = 0%	6.13	0.00
SR = 6%	6.32	0.38

\*Settled at 01/07/2015 6:48:23 PM\*

Rounding Value: RM0.02

AmtB

OtherCharges

ServiceTaxAmount

SalesAmount

RegisterId

AmtA

SalesTaxAmount

AmtC

APITransactionResult StoreTransaction:

"160118120822\_TB000020\_ND2031+2746","TestRetailID123","TB000020","18/1/2016 12:08",  
 B0103-Caffe Macchiato|1.00|5.19|F|0.00|SR|0.06|0.31|5.19|5.50|602<>  
 B0311-Iced English Breakfast Tea|1.00|6.13|F|0.00|ES|0.00|0.00|6.13|6.13|602<>  
 Summary\*|SR|0.06|0.38|6.32<>  
 Summary\*|ES|0|0|6.13<>,"  
 12.85, 0.38, 6.32, 0.00, 1.13, 6.13, 11.32, 0.02)

### Example of Inclusive Bill without Service Charge:

TAX INVOICE :TB000036			
TABLE:A08			
DATE:02-02-2016 11:52:42 AM			
Transaction By:admin			
EMS Reference:			
160202115235_TB000036_ND6891+083			RegisterId
DESCRIPTION	AMOUNT	TAX	
1.00 X 5.60	5.60	SR	
果条汤			
1.00 X 3.00	3.00	ZRL	
Roti Kosong			
1.00 X 2.20	2.20	SR	
Milo O Hot			
1.00 X 1.50	1.50	SR	
Potato Chip			
1.00 X 5.50	5.50	SR	
Cha Kui Tiao			
Subtotal (GST Incl)			AmtB
	17.80		
Service Charge 0%	0.00		OtherCharges
Voucher Discount	0.00		
Rounding	0.00		AmtC
<b>Total:</b>	<b>RM 17.80</b>		SalesAmount
Cash	17.80		
Change	0.00		
--GST Summary--			
Amount (SR)	13.97		SalesTaxAmount
Tax (SR)	0.83		
Amount (ZRL)	3.00		AmtA
Tax (ZRL)	0.00		ServiceTaxAmount

APITransactionResult StoreTransaction:

"160202115235\_TB000036\_ND6891+083","TestRetailID123","TB000036","2/2/2016 11:52",

果条汤|1.00|5.60|T|0.00|SR|0.06|0.32|5.28|5.60|602<>

Roti Kosong|1.00|3.00|T|0.00|ZRL|0.00|0.00|3.00|3.00|602<>

Milo O Hot|1.00|2.20|T|0.00|SR|0.06|0.12|2.08|2.20|602<>

Potato Chip|1.00|1.50|T|0.00|SR|0.06|0.08|1.42|1.50|602<>

Cha Kui Tiao|1.00|5.50|T|0.00|SR|0.06|0.31|5.19|5.50|602<>

Summary\*|SR|0.06|0.83|13.97<>

Summary\*|ZRL|0|0|3.00<>,"

17.80, 0.83, 13.97, 0.00, 0.00, 3.00, 17.80, 0.00)

## A C# Example On How To Integrate:

```
using System;
using System.Collections.Generic;
using System.Text;
using POSAPI;

namespace YOURNAMESPACE
{
    class YourClass
    {
        string TransactionId;
        string RetailId;
        string ReceiptNumber;
        DateTime TransactionTimestamp;
        string SalesInfo;
        decimal SalesAmount;
        decimal ServiceTaxAmount;
        decimal SalesTaxAmount;
        decimal BillDiscountAmount;
        decimal OtherCharges;
        decimal AmtA;
        decimal AmtB;
        decimal AmtC;

        //Your Code...
        private void YourPOSFunction()
        {
            //Your Code...

            //Integration with MyEG's POSAPI
            TransactionsManager tm = new TransactionsManager();
            APITransactionResult tr = tm.StoreTransaction(
                "",
                RetailId,
                ReceiptNumber,
                TransactionTimestamp,
                SalesInfo,
                SalesAmount,
                ServiceTaxAmount,
                SalesTaxAmount,
                0.0,
                OtherCharges,
                AmtA,
                AmtB,
                AmtC);

            string ErrorMessage = tr.ErrorMessage;
            string EMSRef = tr.RegisterId;
            bool Success = tr.Succes;
            //Your Code Continued...
        }
    }
}
```

## 3. Guidelines

### 3.1 Void/Refund a Transaction

You should create another transaction with the same receipt no and the sales and related taxes amount in negative values.

#### Example for exclusive bill:

```
APITransactionResult StoreTransaction ("","Retail ID 003", "Rep003","20100605 12:12:12",  
"Steak|2|10.00|F|0.00|SR|0.06|1.20|20.00|21.20|602<>  
Chocolate shake|1|5.00|F|0.00|SR|0.06|0.30|5.00|5.30|602<>  
Extra table|1|5.00|F|0.00|ZR|0.00|0.00|5.00|5.00|602<>  
Summary*|SR|0.06|1.50|25.00<>  
Summary*|ZR|0|0|5.00<>",  
31.50, 1.50, 25.00, 0.00, 0.00, 5.00, 30.00, 0.00)
```

#### Follow by:

```
APITransactionResult StoreTransaction ("","Retail ID 003", "Rep003","20100605 22:15:12",  
"Steak|-2|-10.00|F|0.00|SR|0.06|-1.20|-20.00|-21.20|602<>  
Chocolate shake|-1|-5.00|F|0.00|SR|0.06|-0.30|-5.00|-5.30|602<>  
Extra table|-1|-5.00|F|0.00|ZR|0.00|0.00|-5.00|-5.00|602<>  
Summary*|SR|0.06|-1.50|-25.00<>  
Summary*|ZR|0|0|-5.00<>",  
-31.50, -1.50, -25.00, 0.00, 0.00, -5.00, -30.00, 0.00)
```

#### Example for inclusive bill:

```
APITransactionResult StoreTransaction ("","Retail ID 003", "Rep003","20100605 12:12:12",  
"Steak|2|10.00|T|0.00|SR|0.06|1.13|18.87|20.00|602<>  
Chocolate shake|1|5.00|T|0.00|SR|0.06|0.28|4.72|5.00|602<>  
Extra table|1|5.00|T|0.00|ZR|0.00|0.00|5.00|5.00|602<>  
Summary*|SR|0.06|1.41|23.59<>  
Summary*|ZR|0|0|5.00<>",  
30.00, 1.41, 23.59, 0.00, 0.00, 5.00, 28.59, 0.00)
```

#### Follow by:

```
APITransactionResult StoreTransaction ("","Retail ID 003", "Rep003","20100605 22:15:12",  
"Steak|-2|-10.00|T|0.00|SR|0.06|-1.13|-18.87|-20.00|602<>  
Chocolate shake|-1|-5.00|T|0.00|SR|0.06|-0.28|-4.72|-5.00|602<>  
Extra table|-1|-5.00|T|0.00|ZR|0.00|0.00|-5.00|-5.00|602<>  
Summary*|SR|0.06|-1.41|-23.59<>  
Summary*|ZR|0|0|-5.00<>",  
-30.00, -1.41, -23.59, 0.00, 0.00, -5.00, -28.59, 0.00)
```

## 3.2 Modify a Transaction

You should void the original transaction and create another transaction (they should all have the same receipt number)

### Example for exclusive bill:

```
APITransactionResult StoreTransaction ("","Retail ID 003", "Rep003","20100605 12:12:12",  
"Steak|2|10.00|F|0.00|SR|0.06|1.20|20.00|21.20|602<>  
Chocolate shake|1|5.00|F|0.00|SR|0.06|0.30|5.00|5.30|602<>  
Extra table|1|5.00|F|0.00|ZR|0.00|0.00|5.00|5.00|602<>",  
Summary*|SR|0.06|1.5|25.00<>  
Summary*|ZR|0|0|5.00<>",  
31.50, 1.50, 25.00, 0.00, 0.00, 5.00, 30.00, 0.00)
```

Follow by:

```
APITransactionResult StoreTransaction ("","Retail ID 003", "Rep003","20100605 12:12:12",  
"Steak|-2|-10.00|F|0.00|SR|0.06|-1.20|-20.00|-21.20|602<>  
Chocolate shake|-1|-5.00|F|0.00|SR|0.06|-0.30|-5.00|-5.30|602<>  
Extra table|-1|-5.00|F|0.00|ZR|0.00|0.00|-5.00|-5.00|602<>  
Summary*|SR|0.06|-1.50|-25.00<>  
Summary*|ZR|0|0|-5.00<>",  
-31.50, -1.50, -25.00, 0.00, 0.00, -5.00, -30.00, 0.00)
```

Follow by:

```
APITransactionResult StoreTransaction ("","Retail ID 003", "Rep003","20100605 22:16:12",  
"Steak|1|10.00|F|0.00|SR|0.06|0.60|10.00|10.60|602<>  
Chocolate shake|1|5.00|F|0.00|SR|0.06|0.30|5.00|5.30|602<>  
Extra table|1|5.00|F|0.00|ZR|0.00|0.00|5.00|5.00|602<>",  
Summary*|SR|0.06|0.90|15.00<>  
Summary*|ZR|0|0|5.00<>  
20.90, 0.90, 15.00, 0.00, 0.00, 5.00, 20.00, 0.00)
```

### Example for inclusive bill:

```
APITransactionResult StoreTransaction ("","Retail ID 003", "Rep003","20100605 12:12:12",  
"Steak|2|10.00|T|0.00|SR|0.06|1.13|18.87|20.00|602<>  
Chocolate shake|1|5.00|T|0.00|SR|0.06|0.28|4.72|5.00|602<>  
Extra table|1|5.00|T|0.00|ZR|0.00|0.00|5.00|5.00|602<>  
Summary*|SR|0.06|1.41|23.59<>  
Summary*|ZR|0|0|5.00<>",  
30.00, 1.41, 23.59, 0.00, 0.00, 5.00, 28.59, 0.00)
```

Follow by:

```
APITransactionResult StoreTransaction ("","Retail ID 003", "Rep003","20100605 12:12:12",  
"Steak|-2|-10.00|T|0.00|SR|0.06|-1.13|-18.87|-20.00|602<>  
Chocolate shake|-1|-5.00|T|0.00|SR|0.06|-0.28|-4.72|-5.00|602<>  
Extra table|1|-5.00|T|0.00|ZR|0.00|0.00|-5.00|-5.00|602<>  
Summary*|SR|0.06|-1.41|-23.59<>  
Summary*|ZR|0|0|-5.00<>",  
-30.00, -1.41, -23.59, 0.00, 0.00, -5.00, -28.59, 0.00)
```

Follow by:

```
APITransactionResult StoreTransaction ("","Retail ID 003", "Rep003","20100605 12:12:12",  
"Steak|1|10.00|T|0.00|SR|0.06|0.57|9.43|10.00|602<>  
Chocolate shake|1|5.00|T|0.00|SR|0.06|0.28|4.72|5.00|602<>  
Extra table|1|5.00|T|0.00|ZR|0.00|0.00|5.00|5.00|602<>  
Summary*|SR|0.06|0.85|14.15<>  
Summary*|ZR|0|0|5.00<>",  
30.00, 0.85, 14.15, 0.00, 0.00, 5.00, 19.15, 0.00)
```

### 3.3 Chinese Character for Text (If applicable)

Example for inclusive bill:

```
APITransactionResult StoreTransaction ("","cashregister", "000048","20150605 12:12:12",  
"珍珠奶茶|1.00|9.99|T|0.00|SR|0.06|0.57|9.42|9.99|602<>  
茉莉绿茶|1.00|10.00|T|0.00|SR|0.06|0.57|9.43|10.00|602<>  
珍珠赤豆汤|1.00|12.00|T|0.00|SR|0.06|0.68|11.32|12.00|602<>  
芦荟茶|1.00|10.00|T|0.00|ZR|0.00|0.00|10.00|10.00|602<>  
Summary*|ZR|0.00|0.00|10.00<>  
Summary*|SR|0.06|1.81|30.17<>",  
42.00, 1.81, 30.17, 0.00, 0.00, 10.00, 40.17, 0.02)
```

### 3.4 Multiple Tax Code Item Bill (Mix 3 tax codes)

Example for exclusive bill:

```
APITransactionResult StoreTransaction ("","cashregister", "000054","20150605 12:12:12",  
"Canned Food|1|30|F|0|SR|0.06|1.8|30|31.80|602<>  
Homecare|1|1.2|F|0|ZR|0|0|1.2|1.2|602<>  
Dept11|1|5.1|F|0|RS|0|0|5.1|5.1|602<>  
Summary*|RS|0|0.00|5.10<>  
Summary*|ZR|0|0.00|1.20<>  
Summary*|SR|0.06|1.80|30.00<>",  
38.10, 1.80, 30.00, 0.00, 0.00, 6.30, 36.30, 0.00)
```

### 3.5 Itemized Discount Bill

Example for inclusive bill:

```
APITransactionResult StoreTransaction ("","cashregister", "000056","20150605 12:12:12",  
"PS4|1|2500|T|0|SR|0.06|141.51|2358.49|2500|602<>  
XBox|1|1890|T|0|SR|0.06|106.98|1783.02|1890|602<>  
Dreamcash|1|980|T|0|ZR|0|0|980|980|602<>  
Nintendo|1|2100|T|315|ZR|0|0|1785|1785|602<>  
Summary*|ZR|0|0.00|2765.00<>  
Summary*|SR|0.06|248.49|4141.51<>",  
7155.00, 248.49, 4141.51, 0.00, 0.00, 2765.00, 6906.51, 0.00)
```

Example for exclusive bill:

```
APITransactionResult StoreTransaction ("","cashregister", "000056","20150605 12:12:12",  
"PS4|1|2500|F|0|SR|0.06|150.00|2500|2650|602<>  
XBox|1|1890|F|0|SR|0.06|113.40|1890|2003.40|602<>  
Dreamcash|1|980|F|0|ZR|0|0|980|980|602<>  
Nintendo|1|2100|F|315|ZR|0|0|1785|1785|602<>  
Summary*|ZR|0|0.00|2765.00<>  
Summary*|SR|0.06|263.40|4390.00<>",  
7418.40, 263.40, 4390.00, 0.00, 0.00, 2765.00, 6855.00, 0.00)
```

### 3.6 Refund Bill with Rounding Amount (Round up)

Example for inclusive bill:

```
APITransactionResult StoreTransaction ("","cashregister", "000058","20150605 12:12:12",  
"HA Product|-1|-99.99|T|0|SR|0.06|-5.66|-94.33|-99.99|602<>  
Summary*|SR|0.06|-5.66|-94.33<>", -100.00, -5.66, -94.33, 0.00, 0.00, 0.00, -99.99, -0.01)
```



### 3.7 Refund Bill with Rounding Amount (Round down)

Example for exclusive bill:

APITransactionResult StoreTransaction ("","cashregister", "000060","20150605 12:49:00",  
"Playstation4|-1|-1000.91|F|0|SR|0.06|-60.05|-1000.91|-1060.96|602<>  
Summary\*|SR|0.06|-60.05|-1000.91<>", -1000.90, -60.05, -1000.91, 0.00, 0.00, 0.00, -1000.91, 0.01)

### 3.8 Bill with Service Charge

Example for exclusive bill:

TAXCODE	ITEM	QUANTITY	PRICE (RM)	AMOUNT (RM)
SR	ITEM A	1	1000.00	1000.00
ZR	ITEM B	1	500.00	500.00
SUBTOTAL				1500.00
SERVICE CHARGE 10%				150.00
GST 6%				69.00
ROUNDING				0.00
TOTAL SALES				1719.00

TAX SUMMARY	EXCLUDE AMOUNT (RM)	TAX AMOUNT (RM)
SR	1150.00	69.00
ZR	500.00	0.00

APITransactionResult StoreTransaction ("","cashregister", "000052","20150605 12:12:12",  
"ITEMA|1|1000|F|0|SR|0.06|60|1000|1060|602<>  
ITEMB|1|500|F|0|ZR|0.00|0|500|500|602<>  
Summary\*|SR|0.06|69.00|1150.00<>  
Summary\*|ZR|0|0.00|500.00<>",  
1719.00, 69.00, 1150.00, 0.00, 150.00, 500.00, 1500.00, 0.00)

**Example for inclusive bill:**

TAXCODE	ITEM	QUANTITY	PRICE (RM)	AMOUNT (RM)
SR	ITEM A	1	1000.00	1000.00
ZR	ITEM B	1	500.00	500.00
SUBTOTAL				1500.00
SERVICE CHARGE 10%				150.00
ROUNDING				0.00
TOTAL SALES				1650.00

TAX SUMMARY	EXCLUDE AMOUNT (RM)	TAX AMOUNT (RM)
SR	1084.91	65.09
ZR	500.00	0.00

APITransactionResult StoreTransaction ("","cashregister", "000052","20150605 12:12:12",  
"ITEMA|1|1000|T|0|SR|0.06|56.60|943.40|1000|602<>  
ITEMB|1|500|T|0|ZR|0.00|0|500|500|602<>  
Summary\*|SR|0.06|65.09|1084.91<>  
Summary\*|ZR|0|0.00|500.00<>",  
1650.00, 65.09, 1084.91, 0.00, 150.00, 500.00, 1443.40, 0.00)

### **3.9 Unique Number Printed in the receipt**

**EMS REF: Datetime\_Invoice No\_Terminal ID+GST**

Example: **150701010958\_287099\_ND6252+020**



## 5 Trouble-shooting

### *Error: Secure Dongle not found*

- Please insert EMS terminal

### *Error: SCHEDULETASKS.EXE not found*

For Windows Embedded 2009, you will need to place the SCHEDULETASKS.EXE on the windows system directory before you start the installation.

### *Error: warning message 'error during create task for scheduler'*

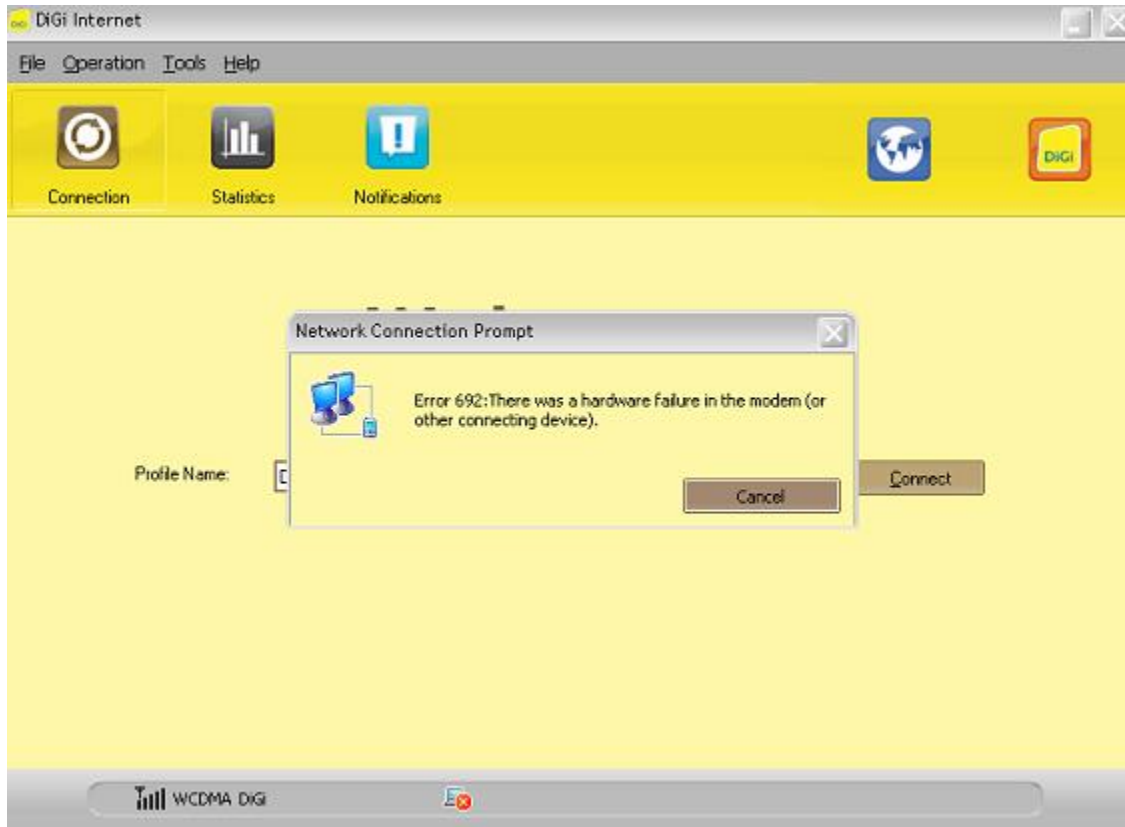
The task schedule service was in disable mode. Please turn to automatic mode

### *Application log at event viewer: Transaction ID : xxxxxxxxxxxxxxxxx. Unable to complete network request to host "xxx.xxx.x.xxx".*

The error log above could be due to 2 possibilities:

1. Wrong host/server IP defined at client machine during installation. Please run POSAPIConfig program to change/edit the Server IP at client machine.
2. It also could be due to firewall blocking incoming connection host. Please refer to local network administrator and define and inbound firewall rule accepting remote connection port 3050 at host (server) machine.

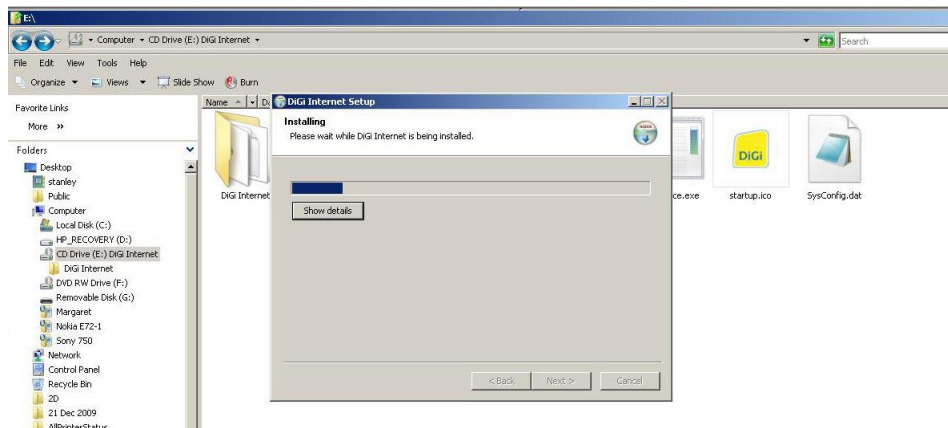
*If upon plugging in EMS terminal to USB port and digi device does not get detected (See screenshot as shown below)*



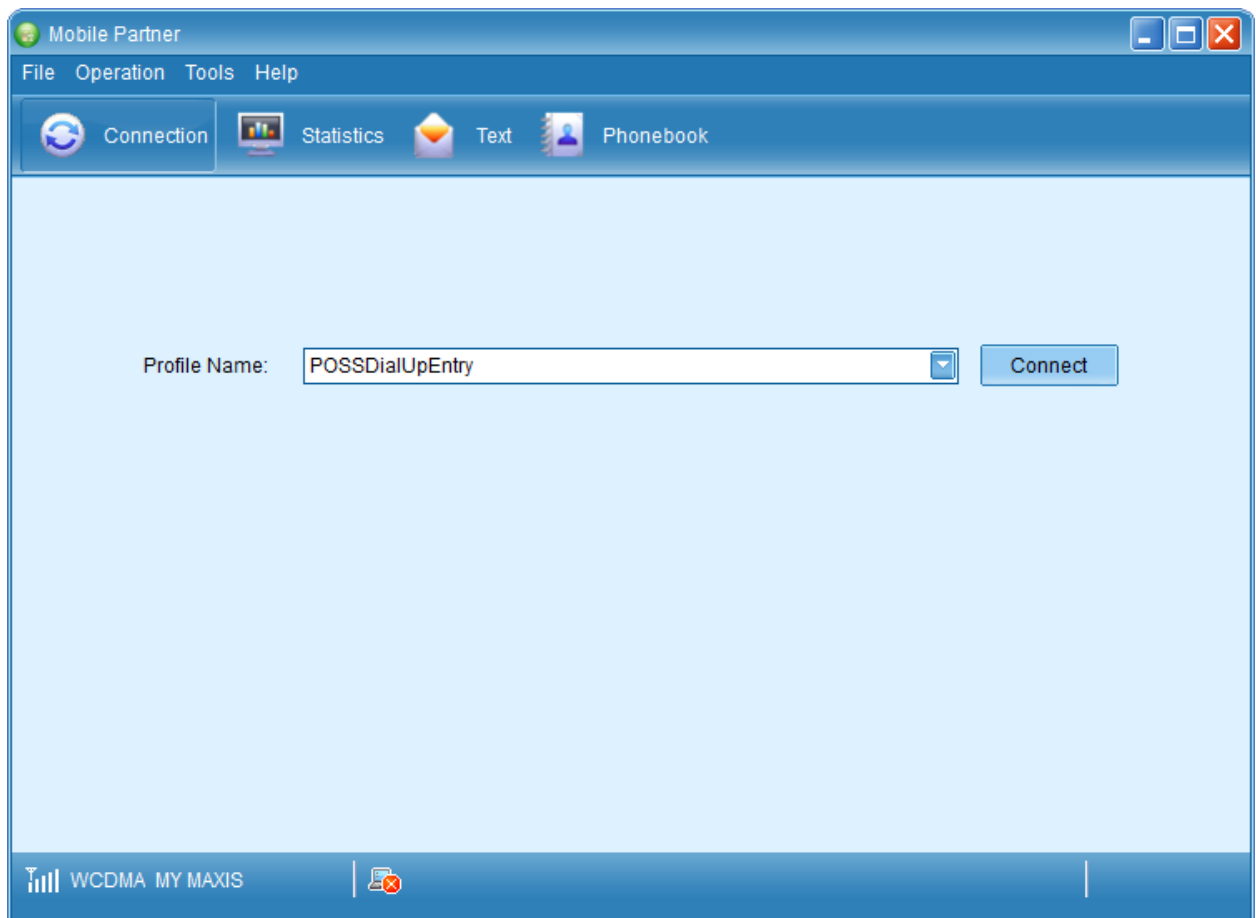
Please try the following simple troubleshooting steps:

- I. There may be an issue with the USB port. Try plugging EMS terminal into a different available USB port. Always practice to plug EMS terminal at back portion of USB port. If issue still does not resolve, follow step II.
- II. The device may not be getting enough power as very often the front USB port uses USB connectors to connect to motherboard. Therefore, use the external power supply which comes with the EMS terminal and try plugging the EMS terminal now at front portion of USB port.

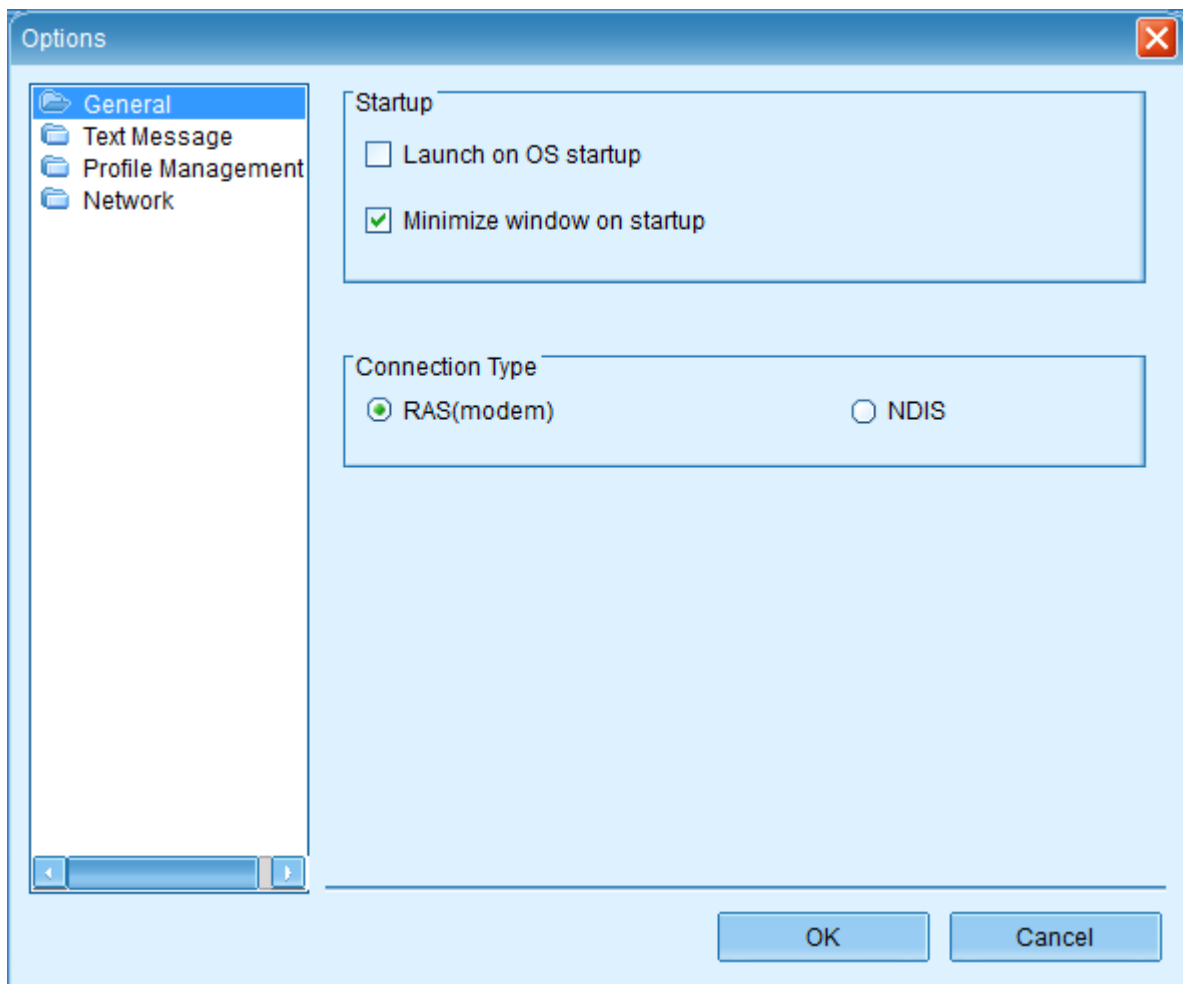
## Appendix A: USB Modem (Huawei E1550 HSDPA USB Modem)



1. Click Autorun.exe to start Maxis USB Modem Installation.



2. Select "Minimize window on startup" in General tab.



3. After finishing installation, click on Maxis Internet software for configuration. Then select Tools and Options.

The image shows a software configuration window titled "Options". On the left is a sidebar with four categories: "General", "Text Message", "Profile Management", and "Network". The "Dial-Up" tab is selected, displaying the following configuration options:

- Profile Name:** A dropdown menu showing "POSSDialUpEntry (Default)".
- APN:** Radio buttons for "Dynamic" (selected) and "Static". Below is a text field labeled "APN:".
- Authentication:** Fields for "Access number:" (containing "\*99#"), "User name:", and "Password:".
- Advanced...:** A button to expand more options.

On the right side of the window are buttons for "New", "Delete", "Edit", "Save", "Undo", and "Default". At the bottom right are "OK" and "Cancel" buttons.



4. Under Profile Management, click **New** button to generate a new profile.

The screenshot shows a Windows-style dialog box titled "Options" with a close button (X) in the top right corner. On the left is a tree view with four items: "General", "Text Message", "Profile Management" (which is selected and highlighted), and "Network". Below the tree view is a horizontal scrollbar. The main area of the dialog is titled "Dial-Up" and contains three grouped sections: "Profile Name" with a text box containing "New Profile1"; "APN" with radio buttons for "Dynamic" and "Static" (the "Static" option is selected), and a text box for "APN:"; and "Authentication" with text boxes for "Access number:" (containing "\*99#"), "User name:", and "Password:". To the right of these sections are five buttons: "New", "Delete", "Edit", "Save", and "Undo". Below these is a "Default" button. At the bottom of the "Dial-Up" section is an "Advanced..." button. At the very bottom of the dialog are "OK" and "Cancel" buttons.

5. Insert "POSSDialUpEntry" as profile name. Select Static APN and insert "maxis3g" as APN name. Click **Save** button to save the new profile.

The screenshot shows the 'Options' dialog box with the 'Dial-Up' tab selected. The left sidebar contains a tree view with 'General', 'Text Message', 'Profile Management', and 'Network'. The main area is divided into three sections: 'Profile Name' with a text box containing 'POSSDialUpEntry', 'APN' with radio buttons for 'Dynamic' and 'Static' (the latter is selected), and an 'APN:' text box containing 'maxis3g'. Below these is an 'Authentication' section with fields for 'Access number:' (containing '\*99#'), 'User name:', and 'Password:'. An 'Advanced...' button is at the bottom of the main area. On the right side, there are buttons for 'New', 'Delete', 'Edit', 'Save', 'Undo', and 'Default'. At the bottom of the dialog are 'OK' and 'Cancel' buttons.

Options

General  
Text Message  
Profile Management  
Network

Dial-Up

Profile Name  
POSSDialUpEntry

APN  
☐ Dynamic ☒ Static  
APN: maxis3g

Authentication  
Access number: \*99#  
User name:  
Password:

Advanced...

New  
Delete  
Edit  
Save  
Undo  
Default

OK Cancel

6. Set the new profile as Default by clicking the ***Set as Default*** button.

The screenshot shows a Windows-style dialog box titled "Options" with a close button (X) in the top right corner. On the left is a tree view with four items: "General", "Text Message", "Profile Management", and "Network". The "Dial-Up" tab is selected, and its settings are displayed in the main area. The settings are organized into three sections: "Profile Name" with a dropdown menu showing "POSSDialUpEntry (Default)"; "APN" with radio buttons for "Dynamic" (selected) and "Static", and a text field for "APN:"; and "Authentication" with text fields for "Access number:" (containing "\*99#"), "User name:", and "Password:". Below these is an "Advanced..." button. On the right side of the dialog are several buttons: "New", "Delete", "Edit", "Save", "Undo", "Default", "OK", and "Cancel". The "Default" button is highlighted with a blue border.

Options

General  
Text Message  
Profile Management  
Network

Dial-Up

Profile Name  
POSSDialUpEntry (Default)

APN  
☒ Dynamic ☐ Static  
APN:

Authentication  
Access number: \*99#  
User name:   
Password:

Advanced...

New  
Delete  
Edit  
Save  
Undo  
Default  
OK  
Cancel

- Restart the Digi Internet software and check at Profile Management and make sure the default Profile is "POSSDialUpEntry".

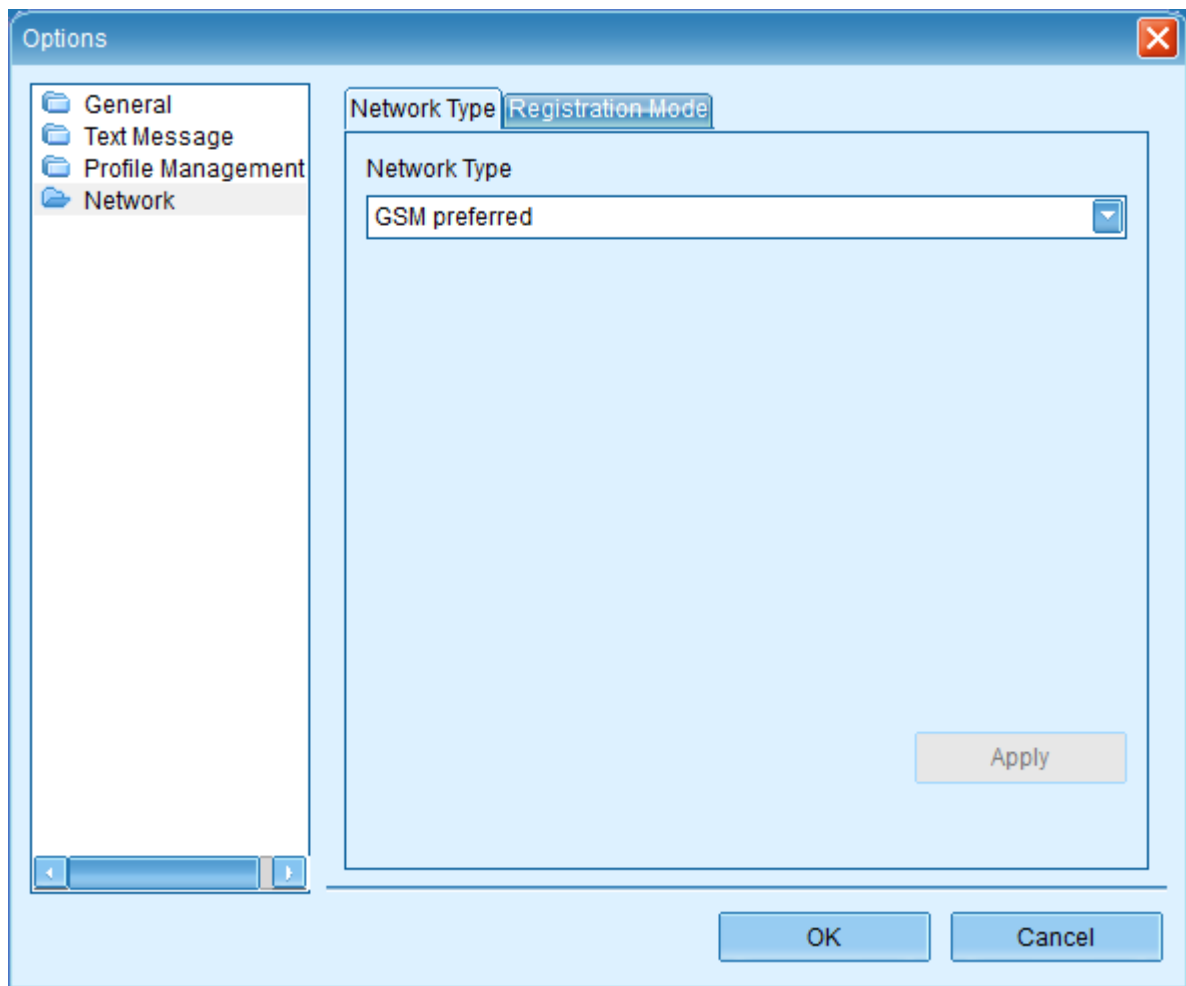
The screenshot shows the 'Options' dialog box with the 'Dial-Up' tab selected. On the left, a tree view shows 'General', 'Text Message', 'Profile Management', and 'Network'. The 'Dial-Up' tab contains the following fields and buttons:

- Profile Name:** A dropdown menu showing 'POSSDialUpEntry (Default)'.
- APN:** A section with two radio buttons: 'Dynamic' (selected) and 'Static'. Below it is an 'APN:' label and an empty text box.
- Authentication:** A section with three labels and text boxes: 'Access number:' with '\*99#', 'User name:' with an empty box, and 'Password:' with an empty box.
- Buttons:** 'New', 'Delete', 'Edit', 'Save', 'Undo', 'Default' (highlighted), and 'Advanced...'.
- Footer:** 'OK' and 'Cancel' buttons.

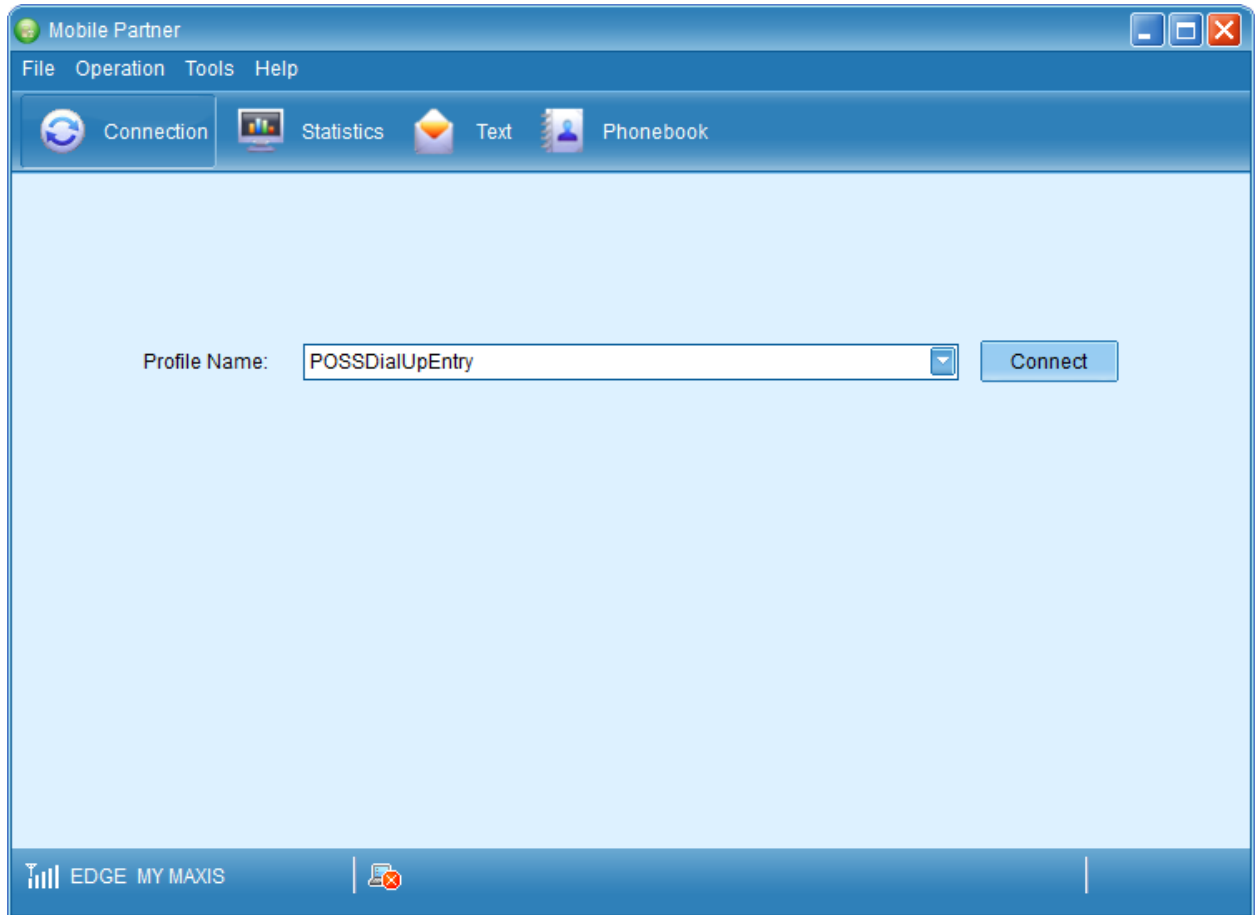
**NOTE:**

**APN: maxis3g**

8. Select "GSM Preferred" under Network as shown below:



9. Click **Connect** button to connect to the internet. Surf the Internet for testing. Disconnect and close the software after finish the testing.



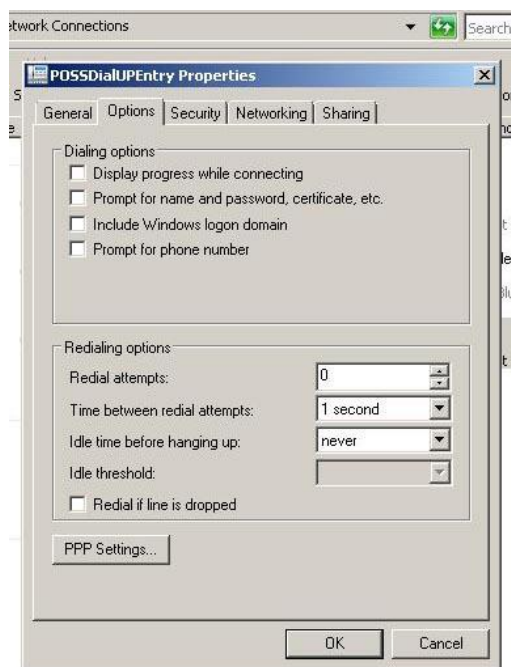
\*Please ensure to test the connectivity as mention above via the profile “POSSDialUpEntry” for once so that the connection profile will be created under Connection Manager (see below). Go to Control Panel > Network Connections and look for POSSDialUPEntry connection



10. Right-click on it and click Properties.



11. Go to **Option** tab and make sure all items under **Dialing Options** is uncheck. Click **OK** to finish Digi USB Modem installation.



## Appendix B: A Self Contained Environment

To ensure that MYEG's POS API does not affect the existing POS terminal's windows ecosystem – for example causing system's main executing thread to “hang”, hogging memory resources and not freeing them up fast enough etc... - several measures were undertaken to overcome these issues that could potentially cause problems to a lower spec machine.

To avoid causing system's main executing thread to “hang” or being a resource hog, the following steps were taken:

1. Function returns immediately with the ems ref when the POS API is invoked
2. Spawns a thread in parallel to process all heavy duty work as listed below:
  - a. Each sales transaction object is created and inserted into a queue\*
  - b. Queue is processed until all sales objects are cleared
  - c. Each sales object requires key signing before insertion into local firebird DB\*
3. The thread is destroyed after being idle for more than 30 seconds. Thus ensuring all objects created within the thread instance is cleared off with it, which will greatly help to free up memory.

\* Use StringBuilder class instead of creating multiple string objects like before as this is very wasteful

After employment of the above steps to create a self-contained environment for the POS API, the speed of execution was found to have increased substantially, and the application no longer suffers from being resource hungry each time it is invoked.

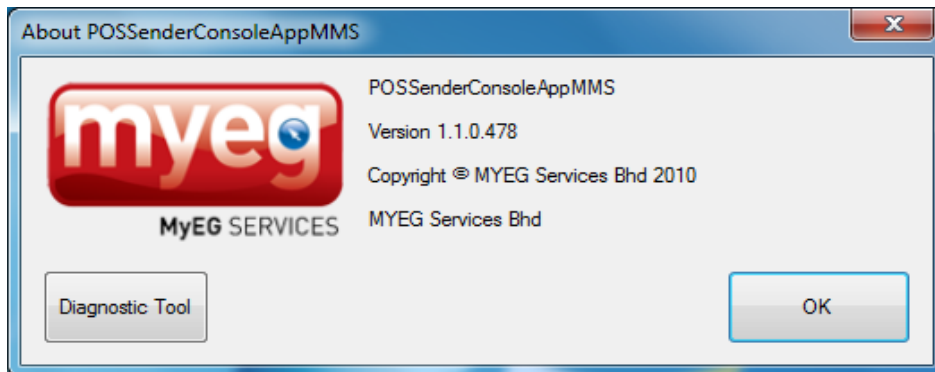


## Appendix C: EMS Diagnostic Tool

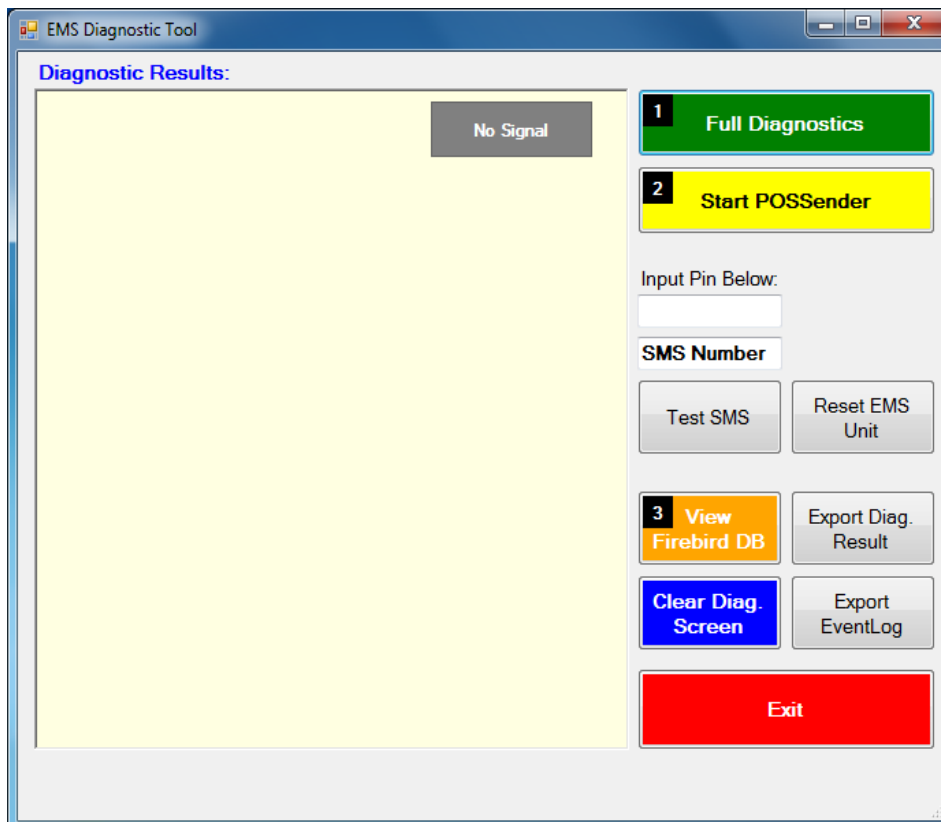
1. Access EMSChecker shortcut in desktop.



2. Click on “Diagnostic Tool” button on left down corner.

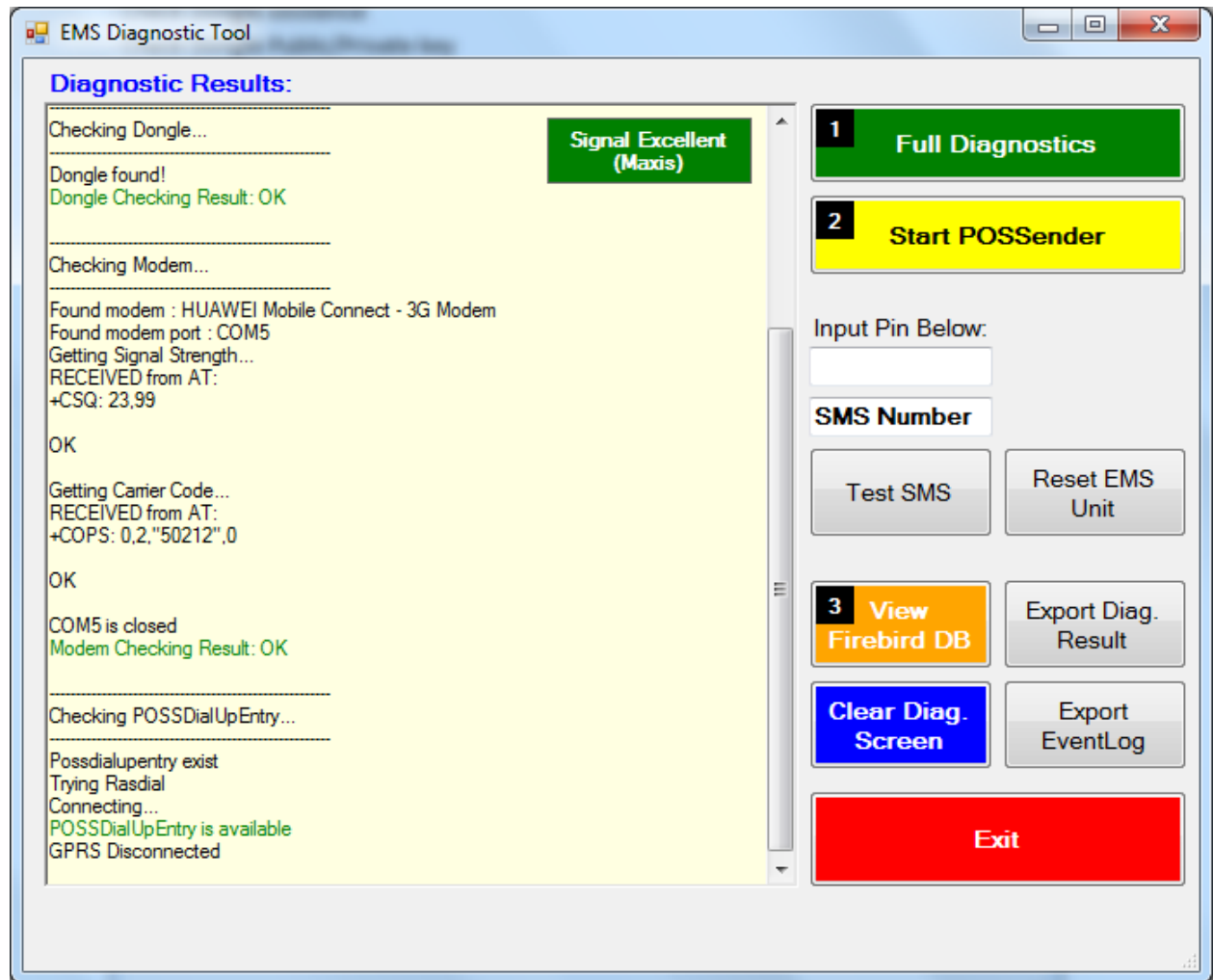


3. EMS Diagnostic Tool display as screenshot below.



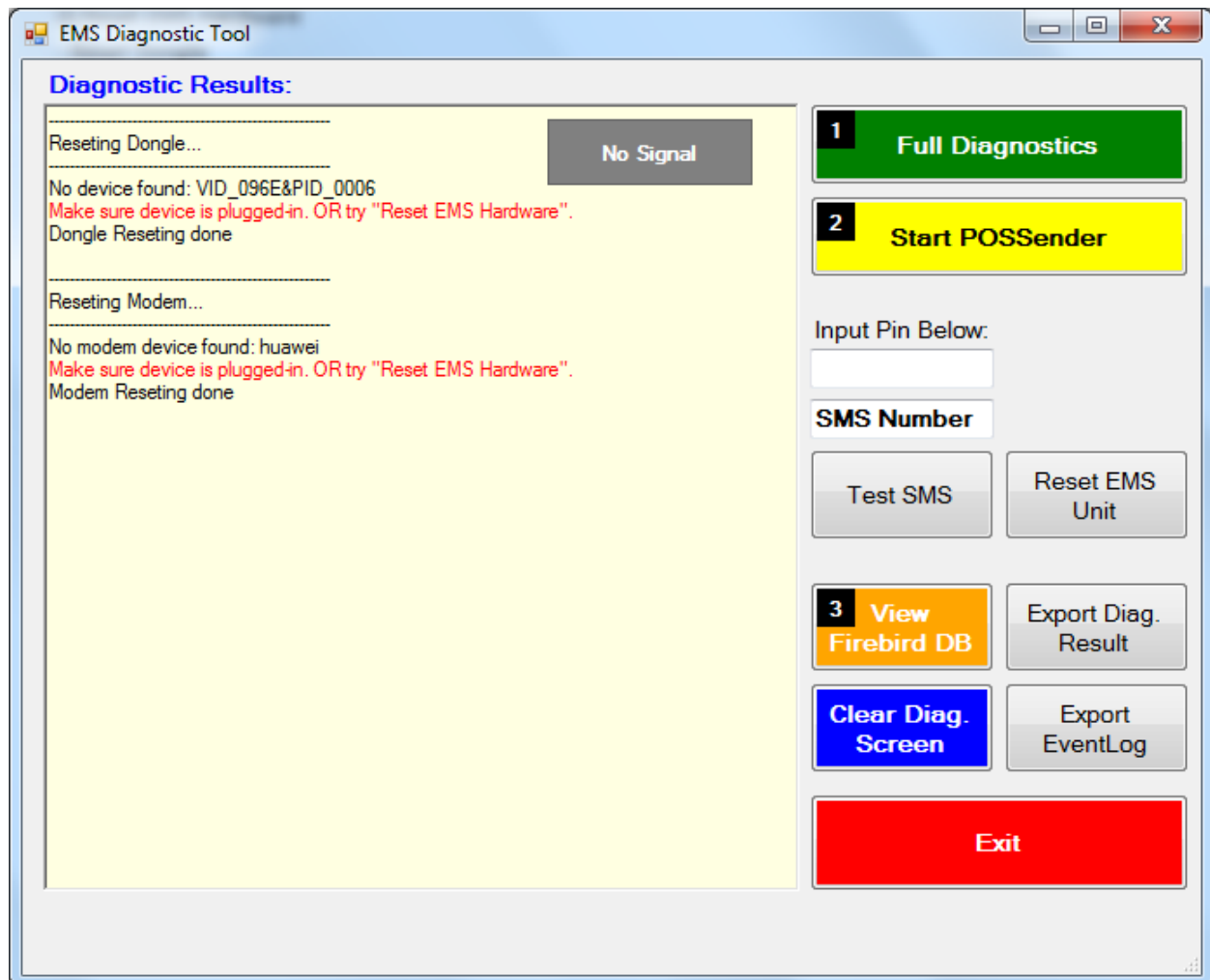
i) Full Diagnostic

- Check Dongle existence
- Check Dongle Public/Private key
- Check Modem existence
- Check Firebird service running? If not start FB service



ii) Reset EMS Hardware

- Reset Dongle
- Reset Modem



iii) Export Result

- Export diagnostic result to a text file

iv) Clear Result

- Clear result on screen

v) Close

- Exit Diagnostic Tool