



Demo Handbook



Introduction

The BluePay system demo will present to markets and shops a methodology so that clients may perform payments on the cash desk line by using the Bluetooth cellular phone. There are three media that certain cellular phones incorporate nowadays:

- Infrared
- Bluetooth
- NFC (Near Field Communication)

The Bluetooth is the most worldwide known.

The infrared technology tends to disappear from cellular phones, while NFC applies only to highly developed devices. The demo environment will show an example as how, in a determined cash desk line, a client executes a cellular phone application, then it is connected to the cash desk network and the payment is allowed. This payment will be notified to this determined cash desk within the network as well as to the cellular phone that performed the operation. The purpose is not to show how the machines work or to recommend a special brand or model.

The demo program will be practiced in only one cellular phone and several simulated cash desks to demonstrate how the Bluetooth technology works; i.e. it detects the quantity of devices in the area, connects the specified server and determines how to notify the predetermined cash desk. In the demo program the banking transference funds from the client account to the commerce account are not included.

In real banking transactions, funds may have origin in a banking account or a prepaid account which the client has in the different shops.

The steps described in the Demo Procedure will have to be done faithfully to the steps of a real transaction.

For more information about Bluetooth technology visit: <http://www.bluetooth.com>,
<http://en.wikipedia.org/wiki/Bluetooth>.

The KVM (J2ME Virtual Machine) is provided with all the cellular phones which are used in a specified API to control the affixed Bluetooth device. Windows does not provide this API so a framework would necessary.

This demo uses a Trial Framework with a total of 20 Mb limited transference. Once this total information has been transferred, this demo program will not be available anymore. In order to perform a real practice, in the Trial period, a huge data volume has been included in comparison with the few bytes needed in each operation. This provides the opportunity to perform several examples during this time.

Requirements



Windows (XP, 2003, Vista) PC/Notebook:

A 1.5 GHz processor or higher.

256 Mb RAM or higher.

2.0. USB Port

Tested through a 2.6 GHz 512 RAM Notebook.

1st Class Bluetooth Device:

It may be a low price version with USB connection.

The development of this device has been made according to a generic Bluetooth as the one shown in the image.





Drivers & Software:

Windows compatible.

BlueSoleil has been chosen since it is the most popular and it is available in the market

<http://www.BlueSoleil.com>



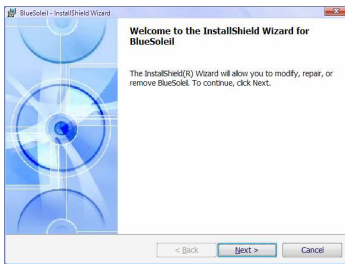
Cellular Phone:

CLDC 1.0 and MDP 2.0. Bluetooth and Java Virtual cellular phone. The usage of Bluetooth spends lot of energy so it is necessary to have a fully charged battery.

It is not necessary to have any enabled special service (SMS, GPRS, MMS, etc).

The development has been based in (V360 and L6) Motorola devices.

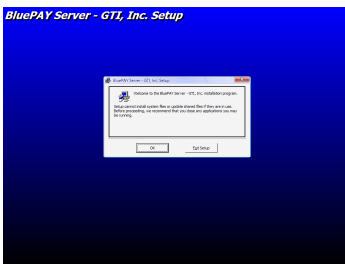
Demo Installation and Starting up



BlueSoleil Software Instalation (only once):

Download, unzip and execute BlueSoleil software <ftp://ftp.iw-global.com/private/BluePAY/BlueSoleil.zip>

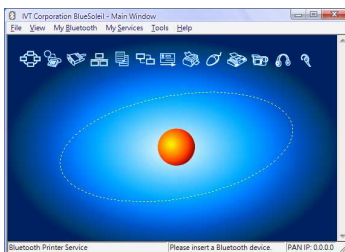
Follow the instructions on the screen to finish the installationRestart the equipment.



BluePAY Software Installation (only once)

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Execute the BlueSoleil software:

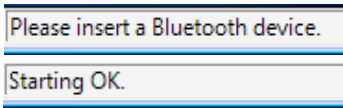
By default, this program is executed when starting the equipment and shows an icon in the Windows notification bar.

If the program does not start automatically, it may be executed from its direct access on the desk.

Select the menu:

My Bluetooth -> Device properties and change Device Name to BluePAY.

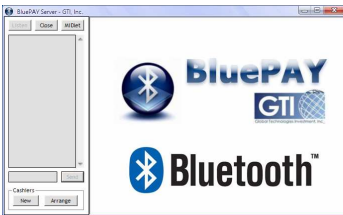
This is made only once.



Bluetooth Device Connection:

Insert the USB device in a port.

The message in the BlueSoleil status bar should change as it is shown in the image:



BluePAY Server Execution:

Execute BluePAY Server from the Start -> Programs - > GTI, Inc

BluePAY Server

The Trial Framework status will be indicated.

Click on Accept.

If the Bluetooth is not working correctly, the error message will let it know.

MIDlet Instalation (only once):

Motorola

From the cellular phone press the Menu button -> Configuration -> Find Me.

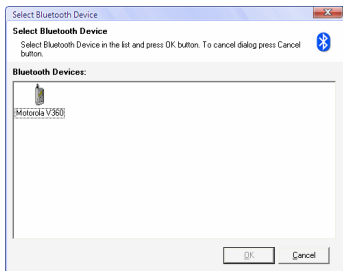
The equipment will start the receptor and will allow it to find the BluePay Server.

With the telephone in the Follow Me mode, click on the MIDlet button from the BluePAY Server.

The system will look for all the devices on listening mode and will show the list.

Select the cellular phone in use and press OK.

Follow the instructions on the phone.



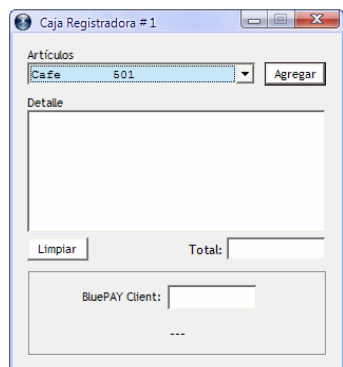
Demo Procedure

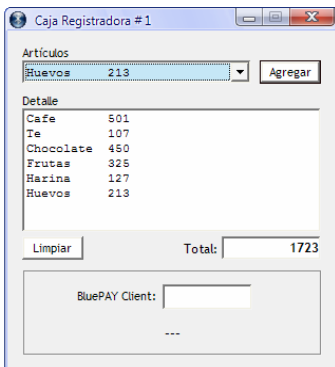
Create New Virtual Cash Register Desks:

The virtual cash desks are created from the BluePAY Server by using the New button. It is possible to create as many as you need, pressing the button on.

Each cash desk will show the number on the title bar, which allows its identification in the virtual simulated commerce network.

The Arrange button orders the different windows to help its arrangement on the screen.





Simulate products´ scanning:

From the previous list, it is necessary to select all the different products that the clients are to pay in the different cash desks.

It is recommended not to create all lists exactly the same to avoid confusion when bringing back the buying list from the cellular phone

Purchase total amount will be shown in the middle of the window that represents each cash desk.

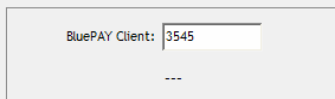
The Clean button erases all the added products from the list.

Enter the client BluePAY user number in the cash desk:

At the moment of paying, the cashier will ask the client if he/she prefer to pay from his/her cellular phone. In the case he/she does it, the cashier will ask for the user BluePAY number which will be registered by the cashier.

In that case, it must be registered the number in the BluePay Client field in the specified cash desk in which the client will pay through the cellular phone.

The idea of using several cash desks simultaneously is to convey how the system works with every cash desk and how it identifies the one in which a payment through a cellular phone will be made without interrupting the others.



Execute the BluePay application on the cellular phone and connect to the Server:

A system welcoming screen will be shown on the cellular phone when executing the BluePAY Client application.

Now the cellular phone will scan for a BluePAY Server.

When it finds the Server, it will ask for authorization to connect.

When a device is connected to a Server, the connection and the client device MAC Address are shown in the log.

This is a unique worldwide code for each cellular phone and the Server will use it to identify the equipment legality.

Enter the client BluePAY user number in the MIDlet:

The client BluePAY user number must be entered in the MIDlet.

During the usage of the demo program, it is not necessary to use any data base, so any number could be entered.

This must be the same as the one entered in the virtual cash desk.

Then, press *Send*.

Retrieving of the purchase detail and payment fulfillment:

The MIDlet sends the user code and the Server looks for the correct virtual cash desk where the user entered the code.



When the server finds it, it retrieves the purchase detail together with the amount to be paid and the cash desk number, and sends all these to the MIDlet.

The client may now see the purchase detail on the cellular screen and may press the button *Pay*.

Verify the payment:

The message PAID must appear in the virtual cash desk in which the user code was registered; this means that the purchase has been correctly paid. On the cellular phone screen will appear the following saying: Thank you for the purchase. The application closes and the operation ends.

BluePAY Client:

PAGADO



Frequently Asked Questions

Security

What kind of encryption is it necessary for the Cellular phone and Server connection?

Bluetooth uses its own encryption data system. BluePAY also encrypts all the transferred data. The data are sent encrypted through BluePAY by a Bluetooth encrypted channel.

- *How does BluePAY identify a specific cellular phone?*

BluePAY uses MAC Address (only one code for every each cellular phone around the world) to identify, in a univocal way, a specified cellular phone and associates this with the user account.

- *What does it happen if the client loses the cellular phone or it is stolen?*

The client must report the theft immediately so as MAC address cut off the service within BluePAY Server and forbids any connection with such device.

- *May a non-registered cellular phone scan the signal and be connected to the BluePAY Server?*

In order that BluePAY Server may be found by cellular phone clients, the Listening mode must be on, which allows other Bluetooth devices find it.

When a device tries to connect with a device whose MAC Address is not registered, the BluePAY Server will reject that connection.

Operational Performance

- *Where should be installed a BluePAY Server?*

This must be placed within the local commerce in an equidistant position from all the cash desks.

- *What range does BluePAY have?*

Bluetooth Class 1 has a range theoretically of 100 meters free of obstacles. The real range usually reaches the 80 meters without obstacles.

- *Where must be the funds located from which clients transferred the money?*

According to the business model, the clients may have a prepaid system with the shops chain or may have a bank account.

In the first possibility, the funds would be within the shops chain Server.

In the second case, the system acts as a Proxy Server to allow a specific Bluetooth cellular phone to send a form to the bank through a Server internet connection.

- *How many Bluetooth devices must the Server have?*

When using the demo program, only one connection is allowed.

The operational mode will depend on the acquired device capacities, although a maximum number of receptors may be established according to the number of cellular phones needed to be working simultaneously.

