

# iBonus™ Secure Contactless Gift Card System



Manual For:  
iBonus Terminal™ version 4.0.8106  
iBonus Server™ version 5.0

Revision: 20 May 2010

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## 1 iBonus Terminal

### 1.1 Installation

#### 1.1.1 Connections

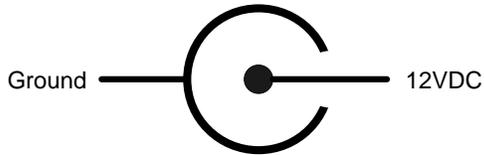


#### 1.1.2 Power

iBonus Terminal comes with a power supply with 110-220 V input. Connect the power supply to iBonus Terminal.

Voltage: 12V DC.

Maximum current: 600mA



### 1.1.3 RS 232 Serial Port for POS and Magnetic Stripe Card Reader

iBonus Terminal has a RS 232 Serial Port. The serial port is can be used to connect external magnetic stripe reader, barcode reader. Please refer to section 2.13 for detail of which card readers can work with iBonus Terminal. When the serial port is not configured to work with card reader, it can be used to connect to Point of Sales device (POS). To connect to a POS, a simplified null modem cable should be used. A null modem cable is available in computer shop. The pin out of the cable is as follows:

Figure 1: schematic for serial port cable.

	DB9-1	DB-2	
Receive Data	2	3	Transmit Data
Transmit Data	3	2	Receive Data
System Ground	5	5	System Ground

Pin out for null modem cable. The cable connecting iBonus Terminal and POS should be female 9-pin D sub.

iBonus provides a Windows based programming library in .DLL for system integrators who wishes to connect iBonus Terminal with POS devices.

### 1.1.4 Receipt Printer

iBonus Terminal supports various POS receipt printers. The following is the general specification requirement of the printer.

Connector: Parallel port

Protocol: ESC/POS

Paper Width: 42 Characters per line

When printer is connected, a receipt is printed whenever any transaction is made. Press the button **A** if you wish to reprint the receipt of the last transaction.

### 1.1.5 Networks

You can connect iBonus Terminal directly to your corporate network. To do so, you would need to assign an IP address to the product. It is possible to use the DHCP server in your network to dynamically assign the IP address, but it is suggested to assign a static IP address to the product to avoid problems.

iBonus Terminal can be connected to server with its IP being virtual IP (while the server is connected through WAN). The connection is established as long as the iBonus Terminal can be connected to port 3080 of the server. No port forwarding for the Terminal is required.

## 1.1.6 Points to Note before Launching iBonus System

### 1.1.6.1 Ordering Your Master Card

If smart card is used Master Card is required to be read by each terminal before terminal can issue and operate with smart care in iBonus Format.

Demo Master Card is for demonstration purpose only. A master card particular for individual end user must be read by each Terminal unit before use. Demo version of terminal comes with demo cards. If your end user's system is launched with demo card, any one who owns a demo card can be used in your end user's system.

Please read the chapter Master Card for detail.

Please state the followings clearly when you first order Master Card from Lucky Technology Ltd:

- End user's name
- Number of card issuing quota
- Decimal Mode or Integer Mode
- Maximum member card prepaid value
- Special concern about sector usage\*

Read the session Master Card for detail.

When you reorder master card for getting more card issuing quota, Decimal Mode or Integer Mode and Maximum member card prepaid value cannot be changed. So they have to be right in the first order.

As each master card carries a unique range of card ID corresponding to number of quotas, for the consistency of card ID, we can't replace another master card with the same range of card ID. The master card must be kept in a safe place. The system should not be reset when quota is loaded into the terminal.

Please state the followings clearly when you reorder Master Card for the same end user:

- End user's name
- Number of card Issuing Quota

### 1.1.6.2 Master Card Usage

The right master card should be read by the Terminal by using the Master Card Read Key function before launching.

### 1.1.6.3 Administrator Password

Administrator password must be changed before launching.

### 1.1.6.4 Expiry Date Settings

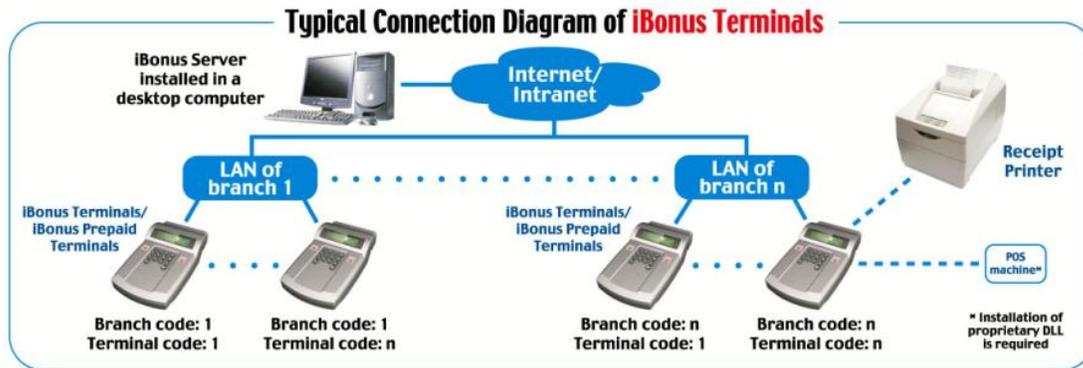
When a member card is converted from a brand new card, the expiry date and expiry mode is written to the card. Before the first member card is created, the expiry date extension setting should be set; otherwise, the expiry date field may be written with a wrong value or wrong mode.

In order to prevent blacklist to be growing to be infinitely large, the cards being blacklisted or replaced are required to have an expiry date. The serial number of

the blacklisted card is deleted from the blacklist one month after the expiry date of the card.

### 1.1.6.5 Date/ Time Settings

The correctness of the date/time of every Terminal is crucial for most operations in iBonus Terminal. Time should be adjusted or synchronized with iBonus Server before using for transactions.



As there is no real time query between iBonus Server and Terminals, the data requirement of processing power of iBonus Server is low. iBonus Server can be installed in any Windows XP desktop computer. Different Terminals in different branches are identified by the difference in their branch code. Different Terminals within the same branch have the same branch code but different terminal code. Both branch code and terminal code range from 1 to 9999. The connection between Server and Terminal is always from Terminal to Server. Even the data is sent though the Internet and the terminal is set to have local IP, no NAT or port forwarding is needed for the Terminals. In one word, the connection can be established as long as the Terminal can ping the Server.

### 1.1.7 iBonus Smart Cards

There are several types of card used in iBonus System:

- Blank Card
- Master Card
- Brand New Card
- Member Card
- Staff Card

#### 1.1.7.1 Blank Card

Blank card is the Mifare card newly bought without being written by any Mifare devices

#### 1.1.7.2 Master Card

Master Card has the following purposes:

- To ensure unique card ID allocation of Member Card ID's

- To ensure the Terminal of different end users can only read their own cards
- To define maximum prepaid value for member cards
- To define sector usage for member cards and staff cards
- To define whether Integer Mode or Decimal Mode should be used

The following sessions explains each of them.

#### **1.1.7.2.1 To ensure unique allocation of Member Card ID's**

Each Master Card carries a range of card ID (4 bytes). The number of unique values in the range is the quota that the Master Card has. Lucky Technology Ltd. ensures that the range of each of the ID in the quota is unique among all master card issued. Therefore, every member card issued by iBonus Terminals in the world has unique card ID.

For example, a Master Card can assign a range of Member ID from 1000004550 to 1000004650 with the quota of 100. With this Master Card, new Member Card can be issued from any Terminal. Each master card can carry up to 25500 quotas logically. Lost Master Card will not be replaced.

Card ID is normally used as a unique identification of each Member or staff, but some companies may prefer to use their existing member ID nomenclature. In this case customer ID can be set for this purpose. Please read the chapter Set Customer ID for more detail.

#### **1.1.7.2.2 To ensure the Terminal of different end users can only read their own cards**

Each master card carries a company code and two sets of keys for accessing and decrypting the data in Mifare cards. Terminal won't response to the card with different company code or keys. Therefore it ensures that the cards of different iBonus systems won't mix up with each others'.

**CAUTION:** Demo master card can only be used for testing only. It and its quota must not be used for real deployment. Otherwise, the demo card used in different companies can be used in each others' Terminals.

#### **1.1.7.2.3 To define maximum prepaid value for member cards**

Each master card carries the maximum prepaid which can be stored in member cards. It limits the maximum possible loss of a member in case of losing cards.

The maximum possible value for maximum prepaid is as follows:

Decimal Mode: 83,886.07

Integer Mode: 8,388,607

#### **1.1.7.2.4 To define sector usage for member cards and staff cards**

For each Mifare 1K classic card used in iBonus Systems, sector 0 is used for storing serial number and other card factory information. Sector 1 is mandated to be used for storing iBonus Specific sector definition. Location of main sector, location and number of redemption sector(s) (item for storing redemption items or shopping items) can be customized. The unused sector will still be using the key FFFFFFFF. For the definition of card sector please check out the chapter Smart Card Format.

Normally one main sector and 3 redemption sectors are defined for each master card.

#### **1.1.7.2.5 To define whether Integer Mode or Decimal Mode should be used**

There are some currencies which does not need decimal place during monetary transactions. For example: Japanese Yen. Master Card can set up the system to be decimal mode or integer mode.

In decimal mode, the maximum possible prepaid value in member card is 83886.07. The accumulated spending in member card is 21,474,836.47

In integer mode, the maximum possible prepaid value in member card is 8,388,607. The accumulated spending in member card is 2,147,483,647

iBonus Terminal does not response to cards with different value mode even the key and company code are matching.

#### **1.1.7.3 Brand New Card**

Brand new card is the card formatted from a blank card. It carries the key and company code corresponding to the master card the terminal is previously read. It can later on be changed in to staff card or member card.

#### **1.1.7.4 Staff Card**

Staff Card is used to login the iBonus Terminal so that the person who is responsible in each transaction can be tracked.

Advanced staff card functions, for example, undo transactions require the staff card to be presented again to prevent staff from carelessly misusing those functions.

Staff Card also protects the Terminal from being used by staff from different branches. The staff card can only be used on the Terminals of the same branch. The branch code can be defined or changed during Create Staff Card function.

Staff Card carries the maximum transaction limit that the staff can handle. It can be defined or changed by created staff card function.

Staff Card is created by Create Staff Card function. It can be created from a brand new card. Once a brand new card becomes a staff card, it cannot be changed in to a member card or vice versa.

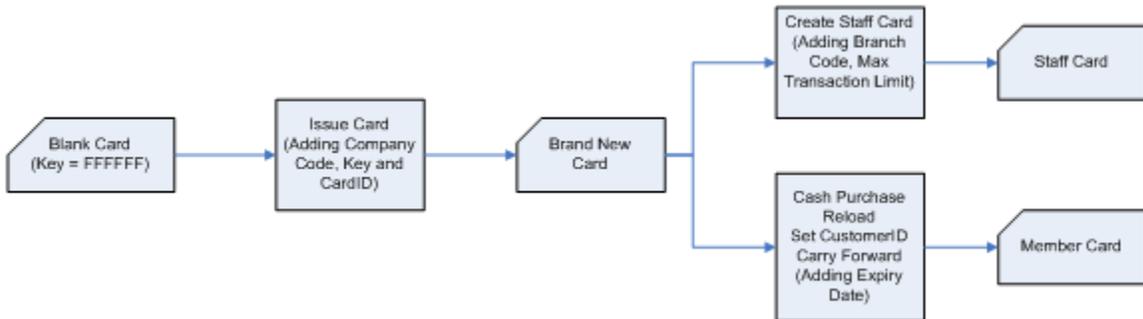
**1.1.7.5 Member Card**

Member Card is held by member for storing prepaid value, accumulated spending and bonus points.

Member Card is created from a brand new card. The following procedure converts a brand new card into a member card:

- Set Customer ID
- Reload
- Cash Purchase
- Carry Forward

**1.1.7.6 Transition of Smart Card's Card Types**



**1.1.8 iBonus ID Cards**

**1.1.8.1 Definition of ID Card**

ID card for iBonus System refers to the card which only stores an ID. Prepaid balance, bonus point and other values are stored in server. iBonus System supports following types of ID Cards:

- Magnetic Stripe Card
- Barcode Card

**1.1.8.2 Card Format**

Magnetic Stripe

Name	Number of Characters	Example
Card Serial Number	1-19	Digits only, cannot have leading 0s

**Bar Code**

Card Serial Number	1-19	Digits only, cannot have leading 0s
--------------------	------	-------------------------------------

iBonus System does not write on an ID card including Magnetic Stripe Card. The card serial number and necessary data structure of the card usable in iBonus System has to be pre-written according to the above data structure.

**1.1.8.3 Security Concern of Generating Number for ID Cards**

While generating card SN for magnetic stripe and bar code card, it is suggested that the SN of each card should not be sequential. One commonly used algorithm for generated card SN is 16 digits with the number following Luhn algorithm, so that it makes it harder to guess the next card SN from the current card number.

It is also suggested that a customer ID is given to each card. (Customer ID is an ID customizable by administrator and is saved at server.) Customer ID should be the only ID which is visible by customer (printed on card or receipt). It must be made impossible to deduce the card SN written on the card from the customer ID printed on the card.

With the above precaution taken, criminals cannot replicate a fake card basing on the customer ID printed on the receipt or card surface.

**1.1.8.4 ID Member Card**

Member Card is held by member for storing prepaid value, accumulated spending and bonus points.

Member Card is created by Create ID Member Card Function.

**1.1.8.5 ID Staff Card**

Staff Card is used to login the iBonus Terminal so that the person who is responsible in each transaction can be tracked.

Advanced staff card functions, for example, undo transactions require the staff card to be presented again to prevent staff from carelessly misusing those functions.

Staff Card also protects the Terminal from being used by staff from different branches. The staff card can only be used on the Terminals of the same branch. The branch code can be defined or changed during Create Staff Card function.

Staff Card carries the maximum transaction limit that the staff can handle. It can be defined or changed by created staff card function.

Staff Card is created by Create ID Staff Card function.

## 1.2 Configuration

### 1.2.1 Branch Code, Terminal Code and Network Settings

This section serves to show you how to set the system date, time, branch code, terminal code and network settings. The administrator password is required for the system administrator to access the system menu and to configure the system parameters.

### 1.2.2 Date/ Time

Date time can be set either on key pad in the Administrator's menu or through the browser. The real time clock inside iBonus is battery operated. It takes a day to charge up the battery and it can run the real time clock for about one day.

Please do the followings to ensure the clock running correctly:

- Do not switch off the iBonus Terminal
- Synchronize time with iBonus Server.

\*Please read the session Date Time Settings.

### 1.2.3 Branch Code/ Terminal Code

The Branch Code (4 numeric digits) is used to identify a branch shop. The Terminal Code (4 numeric digits) is used to identify a terminal in a branch shop or office.

For example, there 2 shops identified by branch code 1001 or 1002. There are 4 Terminals in shop 1001 and 3 Terminals in shop 1002.

The seven Terminals will be identified as:

	Branch Code	Terminal Code
Terminal 1	1001	1
Terminal 2	1001	2
Terminal 3	1001	3
Terminal 4	1001	4
Terminal 5	1002	1
Terminal 6	1002	2
Terminal 7	1002	3

### 1.2.4 Network Settings

You can connect iBonus Terminal directly to your corporate network. To do so, you would need to assign a device name & an IP address to the product. It is possible to use the DHCP server in your network to dynamically assign the IP address.

The server IP address can be set in the Terminal. All connection between the Server and Terminal is origin from iBonus Terminal. If Terminal and Server is

connected through the Internet, no network address translation or port forwarding is needed at the Terminal side.

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Press <b>5</b> to enter system setting manual.	System Settings
Press <b>1</b> to enter network setting manual	Press 1: Network Settings
Enter the branch code. The value should be between 1 and 9999. Press the <b>Func</b> key to continue.	Branch Code: 1
Enter the terminal code. The value should be between 1 and 9999. Press the <b>Func</b> key to continue.	Terminal Code: 1
Enter IP address. Press the <b>Func</b> key to continue.	IP Address: 192.168.000.100
Enter sub net mask. Press the <b>Func</b> key to continue.	Subnetmask: 255.255.255.000
Enter gateway IP address. Press the <b>Func</b> key to continue.	Gateway: 192.168.000.200
Enter DNS IP address. Press the <b>Func</b> key to continue.	DNS: 192.168.000.200
Choose whether or not to connect to iBonus Server. Press <b>1</b> to choose yes. Press <b>2</b> to choose no. Press the <b>Func</b> to keep the old setting.	Connect server? Y/N (1/2)?Y
If yes is chosen. Enter the server IP address. Press the <b>Func</b> key to continue.	Server IP: 192.168.001.051
Enter server port. Default value should be 3080.	Server Port: 3080

Press the <b>Func</b> key to continue.	
Confirm the changes. Press <b>1</b> to commit changes. Press <b>2</b> or <b>Func</b> to discard changes.	OK to Accept Y/N (1/2)? No

### 1.2.5 Date Time Settings and Time Synchronization Settings

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Press <b>5</b> to enter system setting manual.	System Settings
Press <b>2</b> to enter time setting manual	Press 2: Time Settings
Enter date in MM/DD/YYYY format	Date (M/D/Y): 01/01/2010
Enter time in HH:MM:SS format	Time (H:M:S): 12:38:00
Press <b>1</b> to enable automatic time synchronization with iBonus Server. Press <b>2</b> to disable this option.	Enable Sync Time W/ Server(Y/N)?
If automatic time synchronization option is enabled this menu is prompted. If you wish to synchronize time with server now press <b>1</b> . Otherwise press <b>2</b> .	Sync Time Now Y/N (1/2)?

iBonus Terminal can be configured to synchronize its time with iBonus Server. If time zone setting is not set at iBonus Terminal, iBonus Terminal will follow the local time of iBonus Server. If time zone setting is set at iBonus Terminal, iBonus Terminal will follow UTC of the iBonus Server and will display the clock as local time of iBonus Terminal.

iBonus Terminal synchronizes time with server at 3am every day. If iBonus Terminal is powered off at that time, iBonus Terminal will synchronizes time with iBonus Server shortly after it starts up.

### 1.2.6 ID Card Settings

ID Card Settings let you select the type of ID card reader which is connected to iBonus Terminal. Also you can set whether or not to allow entering card S/N or customer ID on the key pad.

Card S/N is the number written magnetic stripe or bar code on the card.

Customer ID is the card number which can be defined by administrator or staff during or after issuing the member card. It is a number stored in server database. If magnetic stripe card is used, Customer ID should be the only number printed on the card and card S/N should not be printed, in order to prevent the card from being duplicated too easily.

Only Customer ID will be printed on receipt.

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Press <b>5</b> then press <b>Func</b> to enter system setting manual.	System Settings
Press <b>3</b> to enter ID Card setting manual	Press 3: ID Card Settings
Press <b>1</b> to select using magnetic stripe card reader. Press <b>2</b> to select barcode reader Press <b>3</b> to select Felica card reader Press <b>4</b> to select not using any card reader. In this case the serial port will be used for POS connection.	Select ID Card Type... 1)Magnetic Stripe 2)Barcode 3)Felica 4)Disabled/KeyIn ID only
Press <b>1</b> to enable beep sound during ID card read. Otherwise press <b>2</b> .	Beep WhileIDCard Read Y/N(1/2)?
Press <b>1</b> to enable Key-in the card SN by key pad. Otherwise press <b>2</b> . Card SN is the number stored on the card.	Enable Key-in CardSN YN(1/2)?
Press <b>1</b> to enable Key-in the customer ID by key pad. Otherwise press <b>2</b> . Customer ID is the card number which can be defined by administrator or staff during or after issuing the member card. It is a number stored in	Enable Key-in CustID YN(1/2)?

server database.	
Press <b>1</b> to apply changes.	OK to Accept Y/N (1/2)? No

### 1.2.7 Register Terminal

In order to do ID card transactions, terminal has to be registered to server before. If the server setting *Default ID Card Operation* is enabled, the new terminal can be enabled for ID card operations during the first registration. However it will not prevent unknown terminal from being able to register successfully

In order to prevent an unknown terminal from being able to do transactions, the *Default ID Card Operation* in the server can be set to disable. In this case, during terminal registrations, server will only record the terminal with a disabled status. Administrator has to enable the terminal manually at the server side.

Terminal would normally register itself during start up after entering server IP or some setting changes. Please follow the step below to register the terminal manually.

After changing the following settings at server, it is required that all terminals have to re-register itself to maintain consistency.

- Decimal mode
- Maximum prepaid balance

When iBonus Terminal is supporting both Mifare card and ID card, it is required that the decimal mode of the master card and that of ID card is consistent. If a master card is set to one decimal mode and the server is set to another, the registration would fail. In such case, you need to either remove the master card setting by resetting the terminal or change the decimal mode at the server side.

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Press <b>5</b> then press <b>Func</b> to enter system setting manual.	System Settings
Press <b>4</b> to for registering terminal	Press 4: Register ID Functions...
Press <b>1</b> to register terminal.	Register Now?

	Y/N (1/2)?

### 1.2.8 Staff Operation Settings

Terminal can be either configured running in prepaid mode or Bonus mode. In prepaid mode, staff can have access to the transactions which handles the dollar and bonus values. In bonus mode staff can have access to the transactions which handles the bonus value only.

To change the terminal mode:

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown.	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Enter <b>2</b> to select the <b>Set Prepaid / Bonus</b> menu. It will prompt you to select prepaid or bonus mode. Press <b>1</b> to select <b>Prepaid</b> mode Press <b>2</b> to select <b>Bonus</b> mode.	Prepaid / Bonus Mode (1/2)?
Press <b>1</b> to select the functions available in staff admin menu. Press <b>2</b> to skip this process.	Fine Tune Staff Func Y/N(1/2)?Y
If pressed <b>1</b> from the above menu, this menu will be prompted. Press <b>1</b> if you wish the terminal to read smart card status even staff card is not login. Otherwise press <b>2</b> .	Admin Show Card Status YN(1/2)?Y
Press <b>1</b> if you wish to use online renew method. Press <b>2</b> if you wish to use offline renew method.  With online renew method, terminal has to be connected to server in order to renew a card. If you wish to renew ID card, this is the only method.  With offline renew method, terminal does not have to be connected to server in order to renew a card, however the card renew cannot be done instantly.	Renew 1)Online/ 2)Offline(1/2)?
Press <b>1</b> if you wish to enable replace card functions. Otherwise press <b>2</b> .	Enable Replace Card Y/N(1/2)?Y
Press <b>1</b> if you wish to enable repair card functions. Otherwise press <b>2</b> .	Enable Repair Card Y/N(1/2)?Y
Press <b>1</b> if you wish to let the staff issue key-in ID	Staff Issue Key

card. Otherwise press <b>2</b> .	InCard YN(1/2)?Y
This function allows staff to issue a card-less account for customer.	
Press <b>1</b> if you wish to let the staff to set customer ID. Otherwise press <b>2</b> .	Staff Set Customer-ID YN(1/2)?Y
Press <b>1</b> if you wish to let the staff to activate a shelved card. Otherwise press <b>2</b> .	Staff Activate Member YN(1/2)?Y
Press <b>1</b> if you wish to let the staff to suspend ID member card. Otherwise press <b>2</b> .	Staff Suspend Member YN(1/2)?Y
Press <b>1</b> if you wish to let the staff to resume suspended ID member card. Otherwise press <b>2</b> .	Staff Resume Member YN(1/2)?Y
Press <b>1</b> to apply changes.	Ok To Accept Y/N (1/2)? No

### 1.2.9 Administrator Password

The **System Administrator Password** is used to access the system menu and to configure the system.

To change the administrator password:

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Enter <b>6</b> to select <b>Set Password</b> .	Set Password
Enter a new password. Press <b>Func</b> to re-enter password again.	Enter Password: ***
Press <b>Func</b> to save changes.	Reenter Password: ***
It is done!	Reenter Password: Updating...

## 1.2.10 Receipt Printing

iBonus Prepaid Terminal supports various POS receipt printers. The following is the general specification requirement of the printer.

Connector: Parallel port

Protocol: ESC/POS

Recommended paper width: 42 characters per line

The Configuration setting can be printed from the Terminal. Also, you can change the language printed on the receipt. It is in English by default.

A sample of configuration printout:

```
==== System Configuration ====
```

1. Branch Code: 0015
2. Terminal Code: 0147
3. System Mode: BONUS
4. Default Expiry Mode: Fixed Date
  - month: 16 (relative)
5. Receipt Type: English

```
2006/09/10 15.45:33
```

When a printer is connected to the iBonus Terminal, a receipt is printed when a transaction is made. Press the button **A** if you wish to print the receipt of the last transaction again.

To change the print settings:

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Enter <b>A</b> to select the <b>Receipt Type</b> menu. Default language is in English.	Default Language English

Select LCD language Select <b>1</b> for English with currency sign in pound sterling. Select <b>2</b> for English with currency sign in Euro. Select <b>3</b> for English with currency sign in Chinese Yuan. Select <b>4</b> for English with currency sign in USD	Select Language: 1)English_uk, 2)English_eu 3)English_cn, 4)Default
Select receipt language Select <b>1</b> for traditional Chinese Select <b>2</b> for simplified Chinese Select <b>3</b> for English with currency sign in GBP. Select <b>4</b> for English with currency sign in EUR. Select <b>5</b> for English with currency sign in USD.	Receipt Language: 1)Trad Chinese, 2)Sim Chinese 3)English_uk 4)English_eu, 5)Default
Select number of copies of the receipt printed during each transaction.	Number of Copies: (1/2)?
Enter <b>1</b> if you want to print the system configuration parameters.	Print Sys Config Yes/No (1/2)?

### 1.2.11 Master Card: Read Key and Get Quota

To perform master card operation in iBonus Terminal: (Please note that the master card operation can ONLY be operated with a Terminal which has zero quotas in it)

Note: When getting quota, iBonus Terminal will not response to the card with different company code.

The decimal mode of master card has to be consistent with that of ID card. If the master card is having a different decimal mode, the master card will be rejected. In this case, you need to change the decimal setting at server and re-register the terminal before letting the terminal read the master card.

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Enter <b>B</b> to select the <b>Master Card</b> menu. Enter <b>1</b> to	Read Key/ Get Quota (1/2)?

read the information from master card. Enter <b>2</b> to fetch member card formatting quota.	
If you choose <b>1</b> you can see the following screen. Present master card now.	Read MasterCard Waiting Card...
If you choose <b>2</b> you can see the following screen. Present master card now.	Get Quota Waiting Card...

## 1.3 Administration

### 1.3.1 Mode of expiry

Applicability: iBonus Smart Card

The Expiry Date defines as the last date which the Member Card can be used and it is also related to the blacklist control if the system is required to support lost Member Card replacement.

There are 3 different choices of Member Card expiry schemes:

1. Fixed Month
2. Relative to Card Initializing Date
3. Automatic expiry extension based on the last visit.

In scheme 1, Fixed Month, you simply decide which month of the year you want the Member Card to be expired. For example, the current month is February and the expiry month is set as January. The Member Card will not be able to use in January of next year.

In scheme 2, Relative to Card Initializing Date, you have to define the number of months relative to the Member Card Initializing Date. For example, if you set 12 months and the Member Card is initialized on January 2002, the Member Card will be expired on January 2003.

In scheme 3, Automatic Expiry Extension Based on the Last Visit, the expiry date will be automatically extended by the administrator defined periods (months) if Members purchase, redeem, or reload before the card expires.

Some points to note about the calculations of expiry date

If the mode of expiry is set to be fixed month mode, for example month of expiry is set to December, (i.e. the exact date of expiry is 31 Dec.), and the expiry date on the card is 31 Dec 2004, within the period between two months before the expiry day to two months before the expiry date of the next year, (i.e. 1 Nov

2004- 31 Oct 2005), the date of expiry of the card will be extended to 31 Dec 2005. If the card renewal is earlier than two months before the date of expiry (i.e. 31 Oct 2004 or before), the card won't be extended.

If the date of expiry assignment is relative to card initialization day(fixed relative), for example 12 months relative to the card initialization day. The date of expiry will be extended by 12 months based on the current date in the Terminal. The new expiry date will be rewritten as the end of the next 12 month.

To set expiry mode:

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Enter <b>3</b> to select the <b>Set Expiry Mode</b> menu.	Current Mode: NO EXPIRY
Press <b>1</b> to choose using server settings. Press <b>2</b> to set new expiry mode.	Server Settings? Yes/No (1/2)?
Press <b>1</b> to choose Yes.	Use Expiry Date Yes/No (1/2)?

To choose Fixed Month mode:

Press <b>1</b> to choose Fixed mode.	Fixed/ LastVisit Mode (1/2)?
Press <b>2</b> to choose absolute expiry month.	Relative / Abs. Month (1/2)?
Enter the expiry month by number and press <b>Func</b> to confirm.	1:Jan --> 12:Dec
It is done!	Done!

To choose the mode of Relative to Card Initialized Date:

Press <b>1</b> to choose Fixed mode.	Fixed/ LastVisit Mode (1/2)?
Press <b>1</b> to choose relative expiry month.	Relative / Abs. Month (1/2)?
Enter the number of month relative to the member card initialize date. Press <b>Func</b> to confirm.	No. of Months:
It is done!	Done!

To choose the mode of Automatic Expiry Extension Based on the time of last visit:

Press <b>2</b> to choose Fixed mode.	Fixed/ LastVisit Mode (1/2)?
Enter the number of month you want to extend for each member card transaction. Press <b>Func</b> to confirm.	#Extended Month
It is done!	Done!

## 1.3.2 Initialize Member Card

### 1.3.2.1 Initializing Member Smart Card

New Member Card has to be initialized before it can be used. Only blank card with key FFFFFFFF can be initialized. The initialization process adds the necessary security key, data structure, Company Code, and a unique Card ID onto a blank card. After initialization, a “brand new card” is created. It can be used as a member card with zero store values. If any member card transaction is done on the card, like reloading money or adding bonus point, the card will be changed to a member card. A brand new card can be formatted to be a staff card as well. Only before any member card transaction is made, can the brand new card be converted to be a staff card.

Before any card initialization can be done, card formatting quotas have to be loaded from Master Card first. 100 quotas are loaded at a time.

Make sure that you have enough card formatting quotas loaded from master card. Please refer to master card section on how to do this.

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Press <b>1</b> to select Card Init/Registration menu. Then press <b>1</b> to select init smart card menu.	Init Smart Card/ Issue ID(1/2)?
Quota left will be shown.	Quota: 100 ID: 0000000100
Present a blank new card. Do not pick up the card until the writing is finished.	Writing.....
You can see a decrement and an increment in the value of quota and ID respectively. Present the next blank card again until the quota are used up or all card are formatted. Press ← to exit.	Quota: 99 ID: 0000000101

### 1.3.2.2 Initializing ID Member Card

In order to initialize member card, administrator has to add enough card initialization quota at the server side for the terminal. iBonus Terminal does not actually write the ID card during card initialization, nor does it write on a magnetic stripe card. If magnetic stripe card is used, it has to be pre-written according to the format defined in this user's manual. Please read the chapter Card Format at page 5.

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Press <b>1</b> to select Card Init/Registration menu. Then press <b>2</b> to select Issue ID Card menu.	Init Smart Card/ Issue ID(1/2)?
Enter initial bonus point for the card	Initial Bonus: Bonus: 0
Enter Initial prepaid value for the card	Initial Prepaid: Amount: \$0.00

Enter customer ID for the card. Customer ID is a user defined ID for the card.	Customer ID:

### 1.3.3 Creating Staff Card

In order to identify the person in charge of all transactions, a staff card is needed to login the iBonus Terminal before any such transaction can be done. The staff card can only be used among the different Terminals in the same branch.

Both smart card and ID card can be created as staff card. Both types of card can be used for both smart card and ID card transactions.

#### 1.3.3.1 Creating Staff Smart Card

Staff Smart Card is a conversion from a Brand New Card. You need to initialize a blank card first. The Set Staff Card function will also define the maximum transaction allowed (default: 1,000, maximum value: 83,886,07 in decimal mode; 8,388,607 in integer mode).

To create a new staff card:

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Enter <b>4</b> to select the <b>Staff Card Management</b> menu. Press <b>1</b> to operate with smart card	1) Smart Card/ 2) ID Card(1/2)?
Press <b>1</b> to create new staff card.	Create/Blacklist (1/2)?
Enter the maximum value of every single transaction that the staff is allowed. Press <b>Func</b> to confirm.	Max Transaction: \$1,000.00
Present a brand new card.	Create StaffCard Waiting Card...
It is done!	Done! ID: 0000000100

### 1.3.3.2 Creating ID Staff Card

ID card can be registered as staff card.

iBonus Terminal does not actually write the ID card during card initialization, nor does it write on a magnetic stripe card. If magnetic stripe card is used, it has to be pre-written according to the format defined in this user's manual. Please read the chapter Card Format at page 5.

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Enter <b>4</b> to select the <b>Staff Card Management</b> menu. Press <b>2</b> to operate with ID card	1) Smart Card/ 2) ID Card (1/2) ?
Press <b>1</b> to issue new staff card.	Issue/Suspend (1/2) ?
Enter the maximum value of every single transaction that the staff is allowed. Press <b>Func</b> to confirm.	Max Transaction: \$1,000.00
Enter staff PIN	Enter New PIN: ***
Reenter staff PIN	Reenter New PIN: ***
Present ID Card for issuing or press <b>FUNC</b> to change the values again.	Present ID Card Or Press Func

### 1.3.4 Set Customer ID

Applicability: Smart Card, ID Card

Card ID/Customer ID is normally used as a unique identification of each Member, but some companies prefer to use their existing ID nomenclature. Customer ID (maximum 16 digits) can be entered through Terminals. There is a transaction record stored in the Terminal for this assign Customer ID action.

As the Customer ID is typed manually. Duplication might occur for smart card. If it happens, warning message will be shown when the card with duplicated customer ID is presented to the Terminal. Card Replacement by Customer ID for

those cards will be denied until the customer ID of those cards is corrected.  
Please use Set Customer ID function with care.

To assign a customer ID to the member card:

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Enter <b>8</b> to select the <b>Assign Customer ID</b> menu. Enter the member's ID and press <b>Func</b> .	Customer ID: 123
Present either ID card or smart card.	123 Waiting Card...
It is done!	Member Card Updated OK!
Press <b>Func</b> to set another customer ID with an incremented value or enter any numbers to set manually.	Customer ID: 124
It is done!	Member Card Updated OK!

### 1.3.5 System Reset and shutdown

The access log, member-card initialization quota or everything can be reset to factory default. Also you can reboot or shutdown the Terminal.

To reset the Terminal:

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Enter <b>7</b> to select the <b>Shutdown/ Reset</b> menu. Enter the member's ID and press <b>Func</b> . Press <b>1</b> if you wish to reset the access log.	Reset Log Yes/No (1/2)?
Enter <b>1</b> if you wish to reset the Terminal back to factory default. Please note that company code is removed in the Terminal and card initialization quota will be reset to zero.	Factory Default Yes/No (1/2)?

Enter <b>2</b> if you wish to reset the card initialization quota.	Reset Quota Yes/No (1/2)?
If you wish to reboot the Terminal without resetting anything simply answer no in the three questions above.	Shutting Down .....

### 1.3.6 Blacklist/Suspend Staff Card

Applicability: Smart Card, ID Card

Staff smart card can be blacklisted by entering a Staff ID of the lost card. ID Staff card can be suspended by similar operation. To suspend a staff card, the Terminal has to be connected with the iBonus Server.

#### 1.3.6.1 Blacklist Staff Smart Card

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Enter <b>4</b> to select the <b>Staff Card Management</b> menu. Press <b>1</b> to operate with smart card	1) Smart Card/ 2) ID Card (1/2)?
Press <b>2</b> to blacklist a staff card.	Create/Blacklist (1/2)?
Enter the staff ID, i.e. card ID of the staff card. Press <b>Func</b> to confirm.	Staff ID:
It is done!	Request Sent!

#### 1.3.6.2 Suspend ID Staff Card

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Enter <b>4</b> to select the <b>Staff Card Management</b> menu.	1) Smart Card/ 2) ID Card (1/2)?

Press <b>2</b> to operate with ID card	
Press <b>2</b> to enter suspend staff card menu	Issue/Suspend (1/2) ?
Present ID Staff Card or Press <b>Func</b> if you wish to enter card SN manually	Waiting Card Or Press Func..
If <b>Func</b> is pressed, Card SN will be prompted. Simply enter card SN and press <b>Func</b> .	Card SN _

### 1.3.7 Bonus Rate

Bonus rate can only be \$1 = 1 point in bonus mode. Therefore this option cannot be changed when it is in Bonus Mode. However, when it is in Prepaid Mode, administration can set whether the same amount of bonus points comes with every Card Purchase transaction.

To change this option:

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Prepaid Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Enter <b>0</b> to select the <b>Set Bonus Rate</b> menu.	Current Setting \$1 = 1 point
Enter <b>1</b> to use bonus point. Enter <b>2</b> otherwise.	Use Bonus Yes/No (1/2) ?
You can see the new setting displayed as shown.	New Setting \$1 = 1 point

### 1.3.8 Deregister Terminal

To de-register an iBonus Terminal from the iBonus Server, the Terminal has to be connected with the iBonus Server. Steps are as follows:

While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b>	Enter Password: ***

(default password: 123).	
Enter <b>9</b> to select the <b>De-register Terminal</b> menu.	Deregister Terminal...
Press <b>1</b> to deregister the Terminal.	Are you sure Yes/No (1/2)?
Press ← if you wish to interrupt the deregistration process.	Send Transaction 15/100 done
If some transactions are not sent to server at the time when the ← is pressed, the following message is shown.	Transaction left 85
	Terminal not Deregistered

### 1.3.9 Internationalization

As the language file in iBonus Terminal defines the language of receipt and the language of the LCD. The language setting menu is in the receipting menu. To change the language settings:

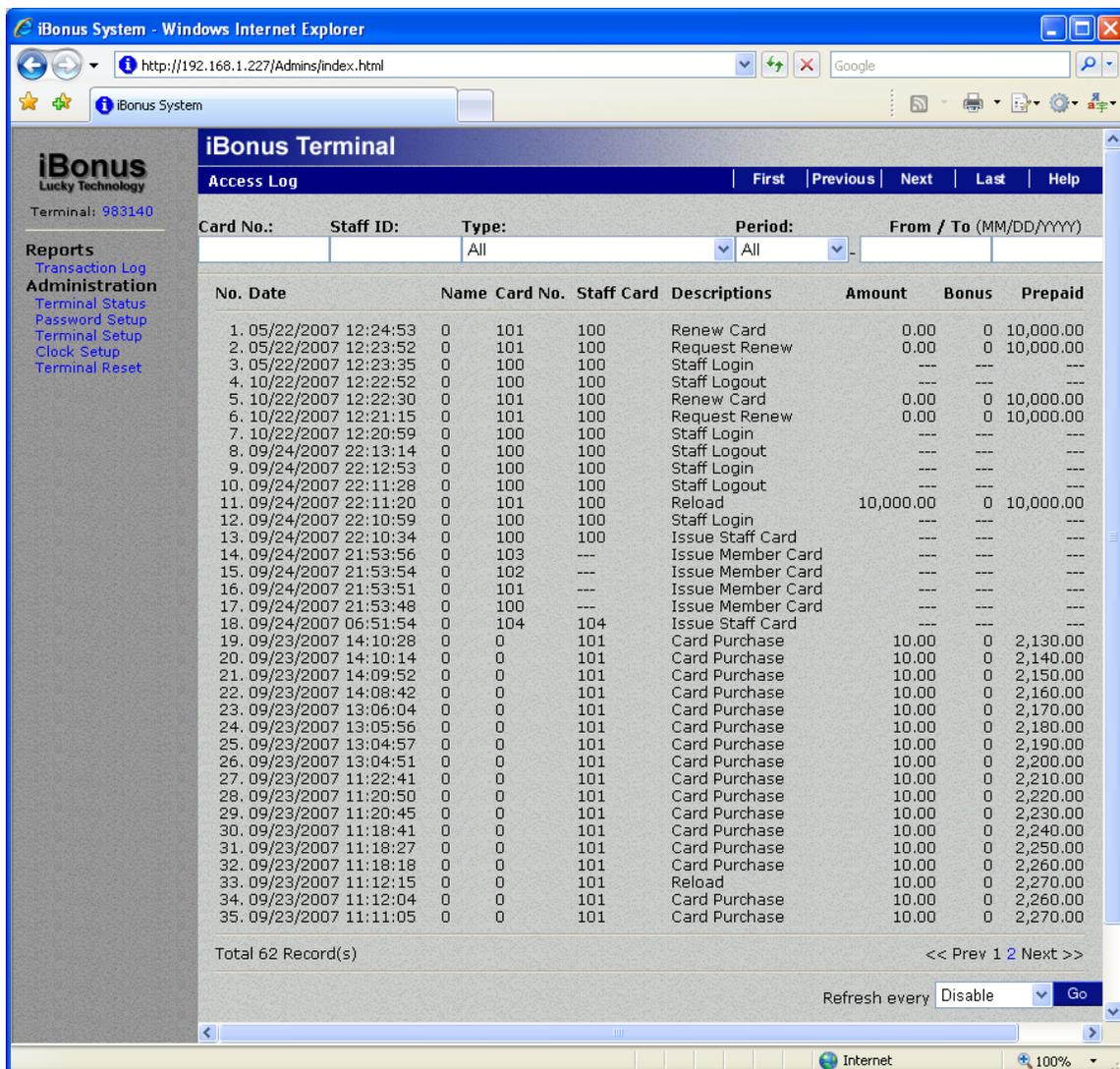
While in Standby Mode, press the <b>Func</b> key to enter the Setup Menu. You will be prompted to enter the Administrator Password as shown	TUE 07 SEP 15:45 Bonus Terminal
Enter the Administrator Password and press <b>Func</b> (default password: 123).	Enter Password: ***
Enter <b>A</b> to select the <b>Receipt Type</b> menu. Default language is in English.	Default Language English
Select LCD language Select <b>1</b> for English with currency sign in pound sterling. Select <b>2</b> for English with currency sign in Euro. Select <b>3</b> for English with currency sign in Chinese Yuan. Select <b>4</b> for English with currency sign in USD	Select Language: 1)English_uk, 2)English_eu 3)English_cn, 4)Default

<p>Select receipt language          Select <b>1</b> for traditional Chinese          Select <b>2</b> for simplified Chinese          Select <b>3</b> for English with currency sign in GBP.          Select <b>4</b> for English with currency sign in EUR.          Select <b>5</b> for English with currency sign in USD.</p>	<p>Receipt Language:          1) Trad Chinese,          2) Sim Chinese          3) English_uk          4) English_eu,          5) Default</p>
<p>Select number of copies of the receipt printed during each transaction.</p>	<p>Number of Copies:          (1/2) ?</p>
<p>Enter <b>1</b> if you want to print the system configuration parameters.</p>	<p>Print Sys Config          Yes/No (1/2) ?</p>

### 1.3.10 Viewing Transaction Log

Transaction Logs stored in the iBonus Terminal can be viewed at the web administrator interface. To view the Transaction Log:

- Browse your iBonus Terminal with browser
- Click Transaction Log at the menu.



## 1.4 Staff Operations

### 1.4.1 Operation Map in Bonus Mode

Staff Operations - Bonus Mode	Support Smart Card	Support ID Card	Support KeyIn-ID	Optional
Cash Purchase	✓	✓	✓	
Redeem	✓	✓	✓	
Balance Checking	✓	✓	✓	
<b>Staff Admin Mode</b>				
Undo Cash Purchase	✓	✓	✓	

Undo Redeem	✓	✓	✓	
Renew Card	✓	✓	✓	either online or offline
Offline Renew Card	✓			
Replace Card	✓	✓	✓	✓
Repair Card	✓			✓
Carry Forward	✓	✓	✓	
Change Staff PIN		✓		
Issue KeyIn Card			✓	✓
Set Customer ID	✓			✓
Activate ID Member Card		✓	✓	✓
Suspend ID Member Card		✓	✓	✓
Resume ID Member Card		✓	✓	✓

### 1.4.2 Operation Map in Prepaid Mode

Staff Operations - Prepaid Mode	Support Smart Card	Support ID Card	Support KeyIn-ID	Optional
Card Purchase	✓	✓	✓	
Reload	✓	✓	✓	
Balance Checking	✓	✓	✓	
Quick Reload	✓			

Staff Admin Mode	Support Smart Card	Support ID Card	Support KeyIn-ID	Optional
Undo Card Purchase	✓	✓	✓	
Undo Reload	✓	✓	✓	
Online Renew Card	✓	✓	✓	either online or offline
Offline Renew Card	✓			
Replace Card	✓	✓	✓	✓
Repair Card	✓			✓
Carry Forward	✓	✓	✓	
Change Staff PIN		✓		
Issue KeyIn Card			✓	✓
Set Customer ID	✓			✓
Activate ID Member Card		✓	✓	✓
Suspend ID Member Card		✓	✓	✓
Resume ID Member Card		✓	✓	✓

### 1.4.3 Staff Login/ Logout

#### ID Card Login

iBonus Terminal will not operate unless it is logged in using Staff card. When the iBonus Terminal is not used, staff should logout by the same Staff card. The date and time of the staff login and logout are recorded in the iBonus Terminal and the iBonus Server. Every upcoming transaction is associated to the staff ID as reference.

Action sent back to server:

Staff Login, Staff Logout

To login / logout the Terminal:

iBonus Terminal is idle. To get the iBonus Terminal in operation, operator is required to present its Staff Card.	TUE 07 Sep 15:45 Prepaid Terminal
If an ID card is presented, PIN will be prompted.	Enter Password: ***
After presenting Staff Card, iBonus Terminal can be used for deducting prepaid stored value from customer's card and reload customer's card.	TUE 07 Sep 15:45 Amount: \$
Present the Staff Card again. The Terminal is back to idle mode.	TUE 07 Sep 15:45 Prepaid Terminal

### 1.4.4 Check Member Card Status

#### 1.4.4.1 Check Member Smart Card Status

Member Card status such as prepaid amount balance and bonus amount balance can be viewed simply just presenting a member card to the iBonus Terminal.

While in Staff Operation Mode (after Staff Login), present a member card.	TUE 07 Sep 15:45 Amount: \$
The LCD will display the customer ID and card SN.	Customer ID: 123
The prepaid amount balance and bonus amount balance will show up follow by the member ID.	CARD:           \$10.00 BONUS:           300

### 1.4.4.2 Check ID Member Card Status

Make sure you are in Staff Operation Mode (after Staff Login)	TUE 07 Sep 15:45 Amount: \$
Press <b>Func</b> until you see this menu and press <b>A</b>	CheckCardBalance Press 'A'
Present ID card or press <b>Func</b> to enter card SN or customer ID manually.	Waiting Card Or Press Func
Press <b>1</b> to enter card SN or press <b>2</b> to enter customer ID. Then enter the corresponding ID	1)Card SN /2) CustomerID(1/2)?
The LCD will display the customer ID and card SN.	Customer ID: 123
The prepaid amount balance and bonus amount balance will show up follow by the member ID.	CARD: \$10.00 BONUS: 300

### 1.4.5 Card Purchase

Card purchase is a mostly used sales operation. This operation is for the staff keying in the sales value on the key pad and deduct the amount from the card. If bonus rate is on, every dollar of purchase brings with one bonus point. The sales value is rounded and added to the field bonus point.

This function is available in Prepaid Mode only.

Field(s) changed on the member's card:

Deducted: abyBalPrepaid.

Increased: dwAccSpending, abyBalBonus (if Bonus Rate is on)

Action sent back to iBonus Server:

Card Purchase

To deduct stored value from the member card:

While in Staff Operation Mode (after Staff Login) and Prepaid Mode, to deduct the card stored value, and increase the bonus point if set, (defined as Card Purchase), simply key in the amount.	TUE 07 Sep 15:45 Amount: \$
For example, to deduct 230 dollars, key in <b>2 3 0 0 0</b> . If the entry exceeds the Staff Card allowable	Purchase [CARD]: \$230.00

transaction limit, it warns you. By presenting the smart card or ID card, stored value will be deducted and the bonus points will be added to the card. The transaction is recorded. For key-in ID operation, press <b>Func</b>	
Press <b>1</b> to enter card SN or press <b>2</b> to enter customer ID. Then enter the corresponding ID and press <b>Func</b> .	1)Card SN /2) CustomerID(1/2) ?
The transaction summary will be displayed.	CARD: -\$230.00 BONUS +230

### 1.4.6 Cash Purchase

Cash purchase is a mostly used sales operation in bonus mode. This operation is for the staff keying in the sales value on the key pad and the bonus point calculated from rounding the amount is added to the card.  
This function is available in Bonus Mode only.

Field(s) changed on the member's card:  
Increased: dwAccSpending, abyBalBonus

Action sent back to iBonus Server:  
Cash Purchase

To add bonus point to the member card:

While in Staff Operation Mode (after Staff Login) and bonus mode, to add bonus points (defined as Cash Purchase) to the member card, simply key in the bonus point	TUE 07 Sep 15:45 Amount: \$
For example, to add 230 points, key in <b>23000</b> . If the entry exceeds the Staff Card allowable transaction limit, it warns you. By presenting the smart card or ID card, bonus points will be added to the card. The transaction is recorded. For key-in ID operation, press <b>Func</b>	Purchase [CASH]: \$230.00
Press <b>1</b> to enter card SN or press <b>2</b> to enter customer ID. Then enter the corresponding ID and press <b>Func</b> .	1)Card SN /2) CustomerID(1/2) ?
The transaction summary will be displayed.	CASH: \$230.00 BONUS +230

### 1.4.7 Reload

Reload charges up the stored value of the member’s card.

Field(s) changed on the member’s card:

Increased: abyBalPrepaid.

Action sent back to iBonus Server:

Reload

To reload the member card’s stored value:

While in Staff Operation Mode (after Staff Login), to reload the card stored value, press <b>Func</b> once.	TUE 07 Sep 15:45 Amount: \$
For example, to reload 200 dollars, key in <b>2 0 0 0 0</b> . If the entry exceeds the Staff Card allowable transaction limit, it warns you. By presenting the smart card or ID card, stored value will be added to the card. The transaction is recorded. For key-in ID operation, press <b>Func</b>	* Reload Mode! * \$200.00
Press <b>1</b> to enter card SN or press <b>2</b> to enter customer ID. Then enter the corresponding ID and press <b>Func</b> .	1)Card SN /2) CustomerID(1/2)?
The transaction summary will be displayed.	==== Reload ==== CARD: +\$200

### 1.4.8 Quick Reload

In case of there is insufficient stored value in the member card to complete the card purchase transaction, by pressing the ‘0’ button on the keypad, the amount right enough for the purchase will be reloaded to the card. Right on the same instance, the purchase transaction is also done. Therefore the card stored value in the card is 0 after Quick Reload if the amount for reload is not altered.

Field(s) changed on the member’s card:

Set to 0: abyBalPrepaid.

Increased: dwAccSpending, abyBalBonus (if Bonus Rate is on)

Action sent back to iBonus Server:

Reload, Card Purchase

In some occasions, the stored value in the card is not enough. In such situation the transaction is not performed.	Insufficient
--	--------------

If you wish the reload the card value with the exact amount of insufficiency, press <b>0</b> right after seeing the previous screen.	TUE 07 Sep 15:45 Amount: \$
You can choose to present card now or alter the reload value before presenting card.	* Quick Reload * \$38.90
After presenting card, the summary of the transaction is shown.	Reload \$38.90 Purchase \$230.00

### 1.4.9 Manual Redeem

Manual redeem deducts the bonus point by manually key in the bonus point value.

Field(s) changed on the member's card:

Deducted: abyBalBonus

Actions sent back to iBonus Server:

Redeem

To enter the value of the redemption points manually:

While in Staff Operation Mode (after Staff Login), press <b>Func</b> to enter Staff Admin mode.	TUE 07 Sep 15:45 Amount: \$
Enter the value of the bonus point and present the member card. Present smart card or ID card to carry out transaction immediately. If you wish to enter card SN or customer ID manually press <b>Func</b> .	= ManualRedeem = Bonus: 50
Press <b>1</b> to enter card SN or press <b>2</b> to enter customer ID. Then enter the corresponding ID and press <b>Func</b> .	1)Card SN /2) CustomerID(1/2)?
The summary of the transaction will be shown.	Bonus: -50 Bal: 2000

### 1.4.10 Undo Card Purchase

Undo Purchase reverses the action of Card Purchase. In case, the customer wants to get a refund or there is a mistake when entering the Card Purchase value, undo purchase can be used.

Field(s) changed on the member's card:

Increased: abyBalPrepaid.

Deducted: dwAccSpending, abyBalBonus (if Bonus Rate is on)

Action sent back to iBonus Server:

Undo Purchase Card

To make adjustment on the member card:

While in Staff Operation Mode (after Staff Login), press <b>Func</b> twice to enter Staff Admin mode.	TUE 07 Sep 15:45 Amount: \$
Present Staff Card to enter staff admin mode.	* Staff Admin! * Wait StaffCard..
Enter the amount you want to adjust.	= UndoPurchase = Amount: \$
After entering the adjustment, Staff Card needs to be presented to confirm the transaction.	Confirmed! Staff Card OK...
When you see the screen as follows. Present member card to finish the adjustment. Present smart card or ID card to carry out transaction. Press <b>Func</b> to enter card SN or customer ID manually.	= UndoPurchase = \$10.00
Press <b>1</b> to enter card SN or press <b>2</b> to enter customer ID. Then enter the corresponding ID and press <b>Func</b> .	1)Card SN /2) CustomerID(1/2)?
The summary of the transaction is shown.	CARD: +10.00 BONUS -10

### 1.4.11 Undo Cash Purchase

Undo Cash Purchase reverses the action of Cash Purchase. In case the customer wants to get a refund or in case of a mistake when entering the Cash Purchase value, undo cash purchase can be used. Staff can enter the value to be refunded on the keypad, and present the member's card. The corresponding value is deducted from accumulated spending. The same value is rounded and deduced from bonus point.

Field(s) changed on the member's card:

Deducted: dwAccSpending, abyBalBonus

Action sent back to iBonus Server:

Undo Purchase Cash

To make adjustment on the member card:

While in Staff Operation Mode (after Staff Login), press <b>Func</b> twice to enter Staff Admin mode.	TUE 07 Sep 15:45 Amount: \$
Present Staff Card to enter staff admin mode.	* Staff Admin! * Wait StaffCard..
Enter the amount you want to adjust.	= UndoPurchase = Amount: \$
After entering the adjustment, Staff Card needs to be presented to confirm the transaction.	Confirmed! Staff Card OK...
When you see the screen as follows. Present member card to finish the adjustment. Present smart card or ID card to carry out transaction. Press <b>Func</b> to enter card SN or customer ID manually.	= UndoPurchase = \$10.00
Press <b>1</b> to enter card SN or press <b>2</b> to enter customer ID. Then enter the corresponding ID and press <b>Func</b> .	1)Card SN /2) CustomerID(1/2)?
The summary of the transaction is shown.	CARD: +10.00 BONUS -10

### 1.4.12 Undo Reload

Undo Reload reverses the action of Reload. In case the customer wants to get a cash-refund or in case of a mistake when entering the Reload value, undo Reload can be used.

Field(s) changed on the member's card:

Decreased: abyBalPrepaid.

Action sent back to iBonus Server:

Undo Reload

To make adjustment of reloading on the member card:

While in Staff Operation Mode (after Staff Login), press <b>Func</b> twice to enter Staff Admin mode.	TUE 07 Sep 15:45 Amount: \$
Present Staff Card to enter staff admin mode. Press <b>Func</b> once more.	* Staff Admin! * Wait StaffCard..
Enter the amount you want to adjust.	= Undo Reload! = Amount: \$
After entering the adjustment, Staff Card needs to be presented to confirm the transaction.	Confirmed! Staff Card OK...
When you see the screen as follows. Present member card to finish the adjustment. Present smart card or ID card to carry out transaction. Press <b>Func</b> to enter card SN or customer ID manually.	= Undo Reload! = \$10.00
Press <b>1</b> to enter card SN or press <b>2</b> to enter customer ID. Then enter the corresponding ID and press <b>Func</b> .	1)Card SN /2) CustomerID(1/2)?
The summary of the transaction is shown.	= Undo Reload! = Card: -\$10.00

### 1.4.13 Undo Manual Redeem

Undo Redemption reverses the action of Redemption. In case the member wants to get back the bonus point or in case of a mistake when entering the value of Manual Redeem, Undo Redemption can be used. Staff can enter the bonus to be returned to the member and present the member's card. The corresponding value will be added back to the bonus point.

Field(s) changed on the member's card:

Increased: abyBalBonus

Action sent back to iBonus Server:

Undo Redeem

To make adjustment of bonus redemption on the member card:

While in Staff Operation Mode (after Staff Login), press <b>Func</b> twice to enter Staff Admin mode.	TUE 07 Sep 15:45 Amount: \$
Present Staff Card to enter staff admin mode. Press <b>Func</b> once more.	* Staff Admin! * Wait StaffCard..

Enter the bonus amount you want to adjust.	= Undo Redeem! = Bonus :
After entering the adjustment, Staff Card needs to be presented to confirm the transaction.	Confirmed! Staff Card OK...
When you see the screen as follows. Present member card to finish the adjustment. Present smart card or ID card to carry out transaction. Press <b>Func</b> to enter card SN or customer ID manually.	= Undo Redeem! = Bonus : 10
Press <b>1</b> to enter card SN or press <b>2</b> to enter customer ID. Then enter the corresponding ID and press <b>Func</b> .	1)Card SN /2) CustomerID(1/2) ?
After presenting card, the summary of the transaction is shown.	Bonus : +10 Bal : 2000

#### 1.4.14 Item Purchase

Members can select their desired products on iBonus Display. The product description, price and the quantity is recorded on the card. When using Mifare Classic card, multiple items can be chosen from the display. After choosing the items from the iBonus Display, members should let the staff do the transaction on the iBonus Terminal. When the card is presented to the Terminal, it will display the products chosen by the members one by one, the staff can choose yes or no for whether or not to sell each of them. Then the member's card will be presented to the Terminal again to finish the transaction. The card stored value is actually deducted in that moment.

If bonus rate is on, every dollar of purchase will bring with one bonus point. The decimal place of the purchase is rounded. When purchasing multiple items, iBonus Terminal will send back to server one record for each single product. That will cause a rounding error greater than 1. iBonus Terminal will send to the server one action `Positive Bonus Adjustment` or `Negative Bonus Adjustment Bonus`, thus eliminating the error.

Field(s) changed on the member's card:

Read: `abyItemBonus`, `abyItemDes`

Deducted: `abyBalPrepaid`.

Increased: `dwAccSpending`, `abyBalBonus` (if Bonus Rate is on)

Actions sent back to iBonus Server:

Card Purchase, Positive Bonus Adjustment or Negative Bonus Adjustment (if Bonus Rate is on)

Note: iBonus Display is an obsolete product. This item purchase function is provided for backward compatibility.

To perform the shopping transaction, make sure it is in Prepaid Mode:

While in Staff Operation Mode (after Staff Login), present the Member Card to the iBonus Terminal.	TUE 07 Sep 15:45 Amount: \$
iBonus Terminal will first display number of items to be purchased.	Total No. of item(s): 01
Then, iBonus Terminal will show the first item and prompt for confirmation Yes (1) / No (2)?	1: Fries x 2 Yes/No (1/2) ?
It displays the next items for confirmation until all respective items are confirmed or declined.	2: GiftCoupon x 1 Yes/No (1/2) ?
If there are no more items to be displayed, it will ask for presenting the smart card to finalize the transaction. Stored value will be deducted from the smart card, corresponding bonus point is added and a receipt will be printed out if a receipt printer is connected to the iBonus Terminal	Total \$50.00 Waiting Card...
After presenting card, the summary of the transaction is shown.	Amount: -\$50.00 Bal: \$200.00

#### 1.4.15 Item Redeem

After choosing gift from iBonus Display, the selection is written into the member card. The transaction for deducting the bonus point is done in the iBonus Terminal.

Members can select their desired redemption item on iBonus Display. The description of the redemption item, bonus point and the quantity is recorded on the card. When using Mifare Classic card, multiple items can be chosen from the display. After choosing the items from the iBonus Display, members should let the staff do the transaction on the iBonus Terminal. When the card is presented to the Terminal, it will display the name of the redemption item chosen by the members one by one. The staff can choose yes or no for whether or not to redeem each of them. Then the member's card will be presented to the Terminal again to finish the transaction. The bonus points are actually deducted in that moment.

Field(s) changed on the member's card:

Deducted: abyBalBonus

Actions sent back to iBonus Server:

Redeem

Note: iBonus Display is an obsolete product. This item redeem function is provided for backward compatibility.

To perform the redeem transaction, make sure it is in Bonus Mode:

While in Staff Operation Mode (after Staff Login), present the Member Card to the iBonus Terminal.	TUE 07 Sep 15:45 Amount: \$
iBonus Terminal will first display number of items to be redeemed.	Total No. of item(s): 01
Then, iBonus Terminal will show the first item and prompt for confirmation Yes (1) / No (2)?	1: Fries x 2 Yes/No (1/2)?
It displays the next items for confirmation until all respective items are confirmed or declined.	2: GiftCoupon x 1 Yes/No (1/2)?
If there are no more items to be displayed, it will ask for presenting the smart card to finalize the transaction. Bonus point will be deducted from the smart card and a receipt will be printed out if a receipt printer is connected to the iBonus Terminal	Total 50 Waiting Card...
After presenting card, the summary of the transaction is shown.	Bonus: -50 Bal: 200

#### 1.4.16 Carry Forward

Carry Forward is used for setting up the value of the member card. It is useful when an end user want to replace the member cards in the legacy system into iBonus System. Carry Forward can assign bonus point and monetary value into the brand new card or member card which has not done any value transaction before.

Field(s) changed on the member's card:

Increased: abyBalPrepaid, abyBalBonus

Set to 0: dwAccSpending

Altered: abyMemberName

## Action sent back to iBonus Server:

Carry Forward

While in Staff Operation Mode (after Staff Login), press <b>Func</b> twice to enter Staff Admin mode.	TUE 07 Sep 15:45 Amount: \$
Present Staff Card to enter Staff Admin mode.	* Staff Admin! * Wait StaffCard..
Press <b>Func</b> until seeing the screen as follows. Press <b>A</b> .	= CarryForward = Press 'A'...
Enter the initial stored value and press <b>Func</b> . (This will only be shown in Prepaid Mode)	Initial Value: \$100.00
Enter the initial bonus value and press <b>Func</b> .	Initial Bonus: 50
Present a brand new card, a member smart card with no previous transaction done or an ID smart card with no previous transaction done or to confirm. Press <b>Func</b> to enter card SN or customer ID manually.	Waiting Card Or Press Func...
Press <b>1</b> to enter card SN or press <b>2</b> to enter customer ID. Then enter the corresponding ID and press <b>Func</b> .	1)Card SN /2) CustomerID(1/2)?
It is done!	Member Card Updated OK!

### 1.4.17 Reprint Receipt

When a printer is connected to the iBonus Terminal, a receipt is printed when a transaction is made. Press the button A if you wish to print the receipt of the last transaction again.

While in Staff Operation Mode (after Staff Login), press A	TUE 07 Sep 15:45 Amount: \$
Press <b>1</b> to confirm to reprint receipt of the last transaction or press <b>2</b> to cancel.	<b>Reprint Receipt</b> Yes/No (1/2)?

## **1.5 Advanced Staff Operations**

### **1.5.1 Renew Member Card**

Renew Member Card extends the date of expiry of the member's card. This function is useful only when both card and iBonus Terminal are using fixed date expiry mode. To renew a card, the staff chooses the request renew member card function and present the member card to be renewed. The iBonus Server waits for about a day for the data synchronization from all terminals and check whether the member card is blacklisted. If the card is not blacklisted, the iBonus Server will send back a reply to the origin iBonus Terminal. The staff chooses renew member card function and present the member card again, the card is renewed. The new expiry date is calculated as follows:

If the mode of expiry is set to be fixed month mode, for example month of expiry is set to December, (i.e. the exact date of expiry is 31 Dec.), and the expiry date on the card is 31 Dec 2004, within the period between two months before the expiry date to two months before the expiry date of the next year, (i.e. 1 Nov 2004- 31 Oct 2005), the date of expiry of the card will be extended to 31 Dec 2005. If the card renewal is earlier than two months before the date of expiry (i.e. 31 Oct 2004 or before), the card won't be extended.

If the date of expiry assignment is relative to card initialization day, for example 12 months relative to the card initialization day. The date of expiry will be extended by 12 months based on the card expiry date. For example, if the card expiry date is 31 Dec 2004, within the period between two months before the expiry date to two months before the expiry date of the next year, (i.e. 1 Nov 2004- 31 Oct 2005), the date of expiry of the card will be extended to 31 Dec 2005. If the card renewal is earlier than two month before the date of expiry (i.e. 31 Oct 2004 or before), the card won't be extended.

#### **1.5.1.1 Renew Member Card (Offline Mode)**

To renew a card in offline mode, iBonus Terminal is not necessary to connect to the internet at the time when the card is presented to the terminal. However, the terminal still need to be connected to server afterward in order to obtain renew authorization from server.

The whole renew process splits up to Request Renew and Do Renew. As the terminal downloads the authorization periodically, it needs to wait for several hours to several days between Do Renew and Request Renew. For those terminals operating with broadband or LAN connection, it is recommended using Renew Member Card (Online Mode).

To switch between online renew mode and offline renew mode please refer to at page 18.

Action sent back to iBonus Server:

## Request Renew, Renew

Since the iBonus Terminal only keeps the blacklist of the cards which are not yet expired. To renew a card, the iBonus Terminal has to check with the iBonus Server whether the card is in the blacklist. Therefore, there are 2 steps for renewing a member card: (1) Send Request to iBonus Server for Member Card renewal and (2) Renewal of Member Card after the request has been sent and verified by iBonus Server. The new expiry mode and date of the Member Card will follow the setting on the Terminal. Transaction actions will be logged.

**1.5.1.1.1 Timing Issue**

After receiving the `Request renew` transaction, the server will wait for all transactions to be sent back to server before letting the authorization of the renew transaction to be available for the request originating terminal to download, so that the Server will know whether the card is blacklisted very recently.

If one of the Terminals is not connected to the server, Server will wait for 3 days (by default) since last visit of the Terminal. After 3 days the Terminal is assumed not in service. Server will not be waiting for the Terminal and will send back the correct status of the corrupted card back to the request originating Terminal.

Therefore by default, it will take longest 3.5 days to have the card renew. In an unstable network, if you want to shorten the maximum card renew time, you can set Limit Visit in iBonus Server to be a shorter time. The trade off is that the card may be able to be renewed even it is blacklisted recently.

To send renewal request to iBonus Server:

While in Staff Operation Mode (after Staff Login), press <b>Func</b> twice to enter Staff Admin mode.	TUE 07 Sep 15:45 Amount: \$
Present Staff Card to enter Staff Admin mode.	* Staff Admin! * Wait StaffCard..
Press <b>Func</b> when you see the screen as follows.	= UndoPurchase = Amount: \$
Press <b>A</b> when you see the screen as follows.	= Renew Card = Press 'A'...
Press <b>1</b> to choose request.	Request/Renew (1/2) ?

When you see the screen as follows. Present member card to send the renew request.	Request to Renew Waiting Card...
The request is now sent back to the iBonus Server and waiting for authorization.	Request queued

After several minutes to one day (depends on the network architecture). The renewal can be performed as follows:

Proceed to this screen again by the step above. Choose <b>2</b> this time for renewal.	Request/Renew (1/2) ?
When you see the screen as follows. Present member card to send the renew request.	Renew MemberCard Waiting Card...
When you see the screen as follows. Present member card to confirm.	Present the same MemberCard again
When the card is authorized from the Server, the card can be renewed.	Card Renewed!
If record is found but not authorized, it will show the message about the reason.	Card has already Renewed
The card being requested is blacklisted.	Card is blacklisted
Another terminal is trying to renew on the same card	Another Terminal doing the renew
The date setting of the Terminal is not correct so it can't derive the correct expiry date. Please check date setting of the Terminal.	Invalid renew date

### 1.5.1.2 Renew Member Card (Online Mode)

Renew Member Card (Online Mode) allows you to renew member card instantly. To switch between online renew mode and offline renew mode please refer to chapter iBonus Terminal at page 18.

To perform Online Renew (online renew mode):

While in Staff Operation Mode (after Staff Login), press <b>Func</b> three times to enter Staff Admin mode.	TUE 07 Sep 15:45 Amount: \$
Present Staff Card to enter Staff Admin mode.	* Staff Admin! * Wait StaffCard..
Press <b>Func</b> when you see the screen as follows.	= UndoPurchase = Amount: \$
Press <b>A</b> when you see the screen as follows.	= Renew Card = Press 'A'...
This will be shown if online renew method is selected in Card Management Settings.	Online Renew...
When you see the screen as follows. Present member card to request online renew.	Renew MemberCard Waiting Card...
If smart card is presented, new expiry date will be calculated.	Request accepted
Present the same card again.	Present the same MemberCard again
When the card is authorized from the Server, the card can be renewed.	Card Renewed!

### 1.5.2 Repair Member Card

Repair Member Card fixes the data corruption problem of the card. To repair a card the staff chooses the request repair function and presents the corrupted card to the Terminal. The Terminal tries to read the serial number of the corrupted card. Once successful, the Terminal sends to the iBonus Server a `Request Repair` with the card serial number. If it fails, staff should use `Replace Card` function instead. The server waits for the data sent from the other iBonus Terminals so that the most updated transaction on the card is collected. It sends back to the initiating iBonus Terminal the card information. The next day, the staff chooses the repair function and presents the corrupted card again. The Terminal tries to write the most updated information to the card. If it is successful, the action `Repair` is sent back to server. If fail, the staff should present a brand new card to the Terminal, so that the card is replaced instead of repaired and the action `Repair by Replace` is sent back to server.

Action sent back to iBonus Server:

`Request Repair, Do Repair, Repair by Replace`

### 1.5.2.1 Timing Issue and Card Salvage Value

After receiving the `Request Repair` transaction, the server will wait for all transactions to be sent back to server before letting the information of the corrupted card to be available for the request originating terminal to download.

If one of the Terminals is not connected to the server, Server will wait for 3 days (by default) since last visit of the Terminal. After 3 days the Terminal is assumed not in service. Server will not be waiting for the Terminal and will send back the corrupted card status back to the request originating Terminal.

Therefore by default, it will take longest 3.5 days to have the card repaired. In an unstable network, if you want to shorten the maximum card repair time, you can set `Limit Visit` in iBonus Server to be a shorter time. The trade off is that the Terminal, which lost connection with server might have some transaction of the card before it is damaged. The status of the repaired card might not be able to reflect the latest value of the lost card.

To send the request for repairing:

While in Staff Operation Mode (after Staff Login), press <b>Func</b> to enter Staff Admin mode.	TUE 07 Sep 15:45 Amount: \$
Present Staff Card to enter Staff Admin mode.	* Staff Admin! * Wait StaffCard..
Press <b>Func</b> when you see the screen as follows.	= UndoPurchase = Amount: \$
Keep pressing <b>Func</b> until you see the screen as followings. Press <b>A</b> to enter repair card menu.	= Repair Card! = Press 'A'...
Press <b>1</b> to choose request.	Request/Repair (1/2)?
When you see the screen as follows. Present member card to send the repairing request.	Request to Repair Waiting Card...
The request is now sent back to the iBonus Server and waiting for authorization.	Request queued

After several minutes to one day (depends on the network architecture). The repairing can be performed as follows:

Go to this screen by the step above. Press <b>2</b> to choose repair.	Request/Repair (1/2)?
When you see the screen as follows. Present the damaged member card to complete the repair process.	Repair Card Waiting Card...
When you see the screen as follows. Present member card to confirm.	Present the same MemberCard again
When the card is authorized from the Server, the card can be repaired.	Card Repaired!
If record is found but not authorized, it will show the message about the reason.	Card has already Repaired
Card record is not found in the database.	Error: Card Not Found
Another Terminal is trying to repair the same card.	Another Terminal doing the repair
If record is found but the card cannot be repaired, it is due to severe damaged on the card.	This Card Cannot be Repaired!
Present a brand new card.	Waiting Brand New Card...
The entire data of the corrupted card will be replaced by a brand new card.	Card Replaced!

### 1.5.3 Replace Member Card

#### 1.5.3.1 Replace Member Smart Card

Replace Member Card reissues a lost member's card. The reissued card will have the same value as the lost card. To replace a member card, the staff chooses request replace member card function, enter the customer ID or member's ID and optionally date of birth of the member. The reference number is displayed on the LCD screen and jot down by the staff. If a printer is connected, a receipt with the reference number is printed. The reference number is for referring the replacement process. After receiving the request, the iBonus Server waits for a day for the data synchronization from all terminals. If the most updated card information shows that there is only one match of the information and the card is not blacklisted, the card information will be sent back to the origin

iBonus Terminal. The staff chooses the replace member card function, enters the reference number and presents the brand new card. The card information is written back to the card.

To enable the replacement function, the following condition has to be met.

1. The expiry function is active and there is an expiry day on the lost card.
2. Either unique customer ID is stored on the card (At least one transaction about the card is sent back to the server) or unique member ID associate with the lost card is stored in the iBonus Server's database.

iBonus Terminal does not write anything to disable the card. Whenever a staff finds that a member card is marked as blacklisted when trying to present it to an iBonus Terminal, the staff is supposed to confiscate the card.

Action sent back to iBonus Server:

```
Request Replace by Card ID, Request Replace by Customer ID,  
Do Replace
```

In order to enjoy the glory of this function, the following requirement has to be met:

1. The expiry function is active and there is an expiry day on the lost card.
2. Either unique customer ID is stored on the card or unique member ID associate with the lost card is stored in the iBonus Server's database.

There are 2 steps: (1) Send Request for Member Card replacement and (2) Replacing of Member Card after the request has been sent and verified by iBonus Server. Transaction actions will be logged.

### **1.5.3.2 Timing Issue and Card Salvage Value**

The server updates a blacklist including the lost card. By default, each terminal downloads the blacklist from the server 4 times a day. It means that it takes at most 6 hour for all Terminals to prohibit the use of the lost card. Server needs to see if the card is used within that period. Server will return to the request originating Terminal the status of the lost card done before the card is blacklisted in time. If the connection of every Terminal is fine, it will take at most 6 hour for the lost card detail to be ready for download for the request originating Terminal. Every terminal prompts the server for lost card detail once every 6 hours. So it takes at most 12 hours for the lost card status to be downloaded to the request originating Terminal.

If one of the Terminals is not connected to the server, Server will wait for 3 days (by default) since last visit of the Terminal. After 3 days the Terminal is assumed not in service. Server will not be waiting for the Terminal and will send back the lost card status back to the request originating Terminal.

Therefore by default, it will take longest 3.5 days to have the card replaced. In an unstable network, if you want to shorten the maximum card replace time, you can set Limit Visit in iBonus Server to be a shorter time. The trade off is that the Terminal, which lost connection with server might have some transaction of the lost card before the card being blacklisted. The status of the replace card might not be able to reflect the latest value of the lost card.

To send request for Member Card replacement:

While in Staff Operation Mode (after Staff Login), press <b>Func</b> to enter Staff Admin mode.	TUE 07 Sep 15:45 Amount: \$
Present Staff Card to enter Staff Admin mode.	* Staff Admin! * Wait StaffCard..
Press <b>Func</b> when you see the screen as follows.	= UndoPurchase = Amount: \$
Keep pressing <b>Func</b> until you see the screen as followings. Press <b>A</b> to enter repair card menu.	= Replace Card = Press 'A'...
Press <b>2</b> to choose ID card to smart card.	1) Smart->Smart/ 2) ID->Smart/ 3) ID->ID (1/2/3)?
Press <b>1</b> to choose request.	Request/Replace (1/2)?
Press <b>1</b> if you know the customer ID stored in the card (iBonus Terminal can only enter customer ID in numerical format, you can choose <b>1</b> only if the customer ID is in such format). Press <b>2</b> if you know the member ID of the lost card.	CustomerID/ Card ID(1/2)?
If you have chosen <b>1</b> , enter the numerical customer ID and press <b>Func</b> .	Customer ID:
If you have chosen <b>2</b> , enter the numerical member ID and press <b>Func</b> .	Card ID:
Enter the date of birth as that in the lost card. If the date has not been entered before, leave is as 00/00/0000. Press <b>Func</b> to proceed	DOB (M/D/Y) : 00/00/0000
A receipt with the reference no. is printed. Keep the	Request Sent! Ref: 12345

receipt. If the Terminal is not connected to a printer, make sure that the reference number is noted. The number is required for the renewal process. Press <b>Func</b> or ← to finish.	
---	--

After the request is sent, the iBonus Server verifies the validity of the information and the card is not blacklisted. After several minutes to one day (depends on the network architecture). The card replacement can be performed as follows:

Follow the steps above. Go to the screen as follows. This time, press <b>2</b> to choose replace.	Request/Replace (1/2) ?
The replacement record can be searched by 1) Reference Code, 2) Card ID, or 3) Customer ID. Enter <b>1</b> , <b>2</b> , or <b>3</b> to do replacement by using one of the above methods. Press <b>Func</b> to proceed.	Ref No:
	Card ID:
	Customer ID:
Present a brand new card.	Waiting Brand New Card...
If the card replacement is accepted, present a newly initialized card to the Terminal. The card can now be used.	Card Replaced!
If record is found but not authorized, it will show the message about the reason.	Card has already Replaced
Customer ID is duplicated.	Customer ID Duplicated
Card being replaced is already blacklisted	Card is blacklisted
Card being replaced is not found.	Error: Card Not Found
Another Terminal is trying to replace the same card.	Another Terminal doing the replace

### 1.5.3.3 Replace ID Member Card with a Smart Card

This feature is to replace an ID member card with a smart card. iBonus Terminal will read the card values from server and write them to the smart card. The main purpose of this function is to upgrade the member's card to a more secure smart

card, thereby giving the customer more confident on using the card for payment purpose.

**Steps:**

While in Staff Operation Mode (after Staff Login), press <b>Func</b> three times to enter Staff Admin mode.	TUE 07 Sep 15:45 Amount: \$
Present Staff Card to enter Staff Admin mode.	* Staff Admin! * Wait StaffCard..
Press <b>Func</b> when you see the screen as follows.	= UndoPurchase = Amount: \$
Keep pressing <b>Func</b> until you see the screen as followings. Press <b>A</b> to enter repair card menu.	= Replace Card = Press 'A'...
Press <b>2</b> to choose ID card to smart card.	1) Smart->Smart/ 2) ID->Smart/ 3) ID->ID (1/2/3)?
Press <b>1</b> to enter by card ID, <b>2</b> to enter by card serial number, or <b>3</b> to enter by customer ID. Or present ID card to request from server.	Present ID Card Or Press Func
Present a brand new card.	Waiting Brand New Card...
If brand new card is presented, card balance will be retrieved from server.	Request accepted
Present the same brand new card again.	Present the same Brand new card..
The card can now be used.	Card Replaced!

#### **1.5.3.4 Replace ID Member Card**

The function to suspend the old card or lost card and create another ID card with the same values and customer ID.

**Steps:**

While in Staff Operation Mode (after Staff Login), press <b>Func</b> three times to enter Staff Admin mode.	TUE 07 Sep 15:45 Amount: \$
---	--------------------------------

Present Staff Card to enter Staff Admin mode.	* Staff Admin! * Wait StaffCard..
Press <b>Func</b> when you see the screen as follows.	= UndoPurchase = Amount: \$
Keep pressing <b>Func</b> until you see the screen as followings. Press <b>A</b> to enter repair card menu.	= Replace Card = Press 'A'...
Press <b>3</b> to choose ID card to ID card.	1) Smart->Smart/ 2) ID->Smart/ 3) ID->ID (1/2/3)? _
Present old ID card or press <b>Func</b> to manually enter card SN or customer ID.	Old ID Card Or Press Func...
Press <b>1</b> to enter by card ID or <b>2</b> to enter by customer ID.	1)Card ID /2) CustomerID(1/2)?
When you see the screen as follows. Present newly issued ID card to complete the replace.	Present ID Card Waiting Card...
If the card replacement is accepted, the card can now be used.	Card Replaced!

#### 1.5.4 Change PIN of ID Staff Card

PIN of ID staff card can be changed in Staff Admin Menu. Staff is required to enter old PIN once during the process. If the old PIN is forgotten, issue ID staff card function can be used to reset the PIN instead.

Steps:

While in Staff Operation Mode (after Staff Login), press <b>Func</b> three times to enter Staff Admin mode.	TUE 07 Sep 15:45 Amount: \$
Present Staff Card to enter Staff Admin mode.	* Staff Admin! * Wait StaffCard..
Press <b>Func</b> until seeing the screen as follows. Press <b>A</b> .	Change Staff PIN Press 'A'...
Present ID staff card.	Please Present ID Staff Card..
Enter the current staff PIN and press <b>Func</b> .	Current PIN: ***

Enter the new staff PIN and press <b>Func</b> .	Enter new PIN: ***
Reenter the new staff PIN and press <b>Func</b> .	Reenter new PIN: ***
Staff PIN is now changed.	Staff PIN Changed.

### 1.5.5 Suspend ID Member Card

When a member card is suspended, it cannot perform any transactions.

Steps:

While in Staff Operation Mode (after Staff Login), press <b>Func</b> three times to enter Staff Admin mode.	TUE 07 Sep 15:45 Amount: \$
Present Staff Card to enter Staff Admin mode.	* Staff Admin! * Wait StaffCard..
Press <b>Func</b> until seeing the screen as follows. Press <b>A</b> .	Suspend IDMember Press 'A'...
When you see the screen as follows. Present member card to resume member or press <b>Func</b> .	Waiting Card Or Press Func...
Press <b>1</b> to enter by card SN, <b>2</b> to enter by customer ID. Options that are only enabled in the Card Management Settings will be shown. ID Card can also be presented at this screen.	1)Card SN /2) CustomerID(1/2)?
This message is shown.	Done!

### 1.5.6 Resume ID Member Card

Resume ID card is to reactivate a suspend member card.

Steps:

While in Staff Operation Mode (after Staff Login), press <b>Func</b> three times to enter Staff Admin mode.	TUE 07 Sep 15:45 Amount: \$
Present Staff Card to enter Staff Admin mode.	* Staff Admin! * Wait StaffCard..

Press <b>Func</b> until seeing the screen as follows. Press <b>A</b> .	Resume ID Member Press 'A'...
When you see the screen as follows. Present member card to resume member or press <b>Func</b> .	Waiting Card Or Press Func...
Press <b>1</b> to enter by card SN, <b>2</b> to enter by customer ID. Options that are only enabled in the Card Management Settings will be shown.	1)Card SN /2) CustomerID(1/2)?
Enter Card SN if it is selected. Then press <b>Func</b> .	Card SN: 123
Enter Customer ID it is selected. Then press <b>Func</b> .	Customer ID: 123456
This message is shown.	Done!

### 1.5.7 Activate ID Member Card

Activate member card is to activate a shelved member card.

A shelved member card is a new member card to which is intentionally inactivated. Patrons can create shelved member card and sell them at third party retail store. As the card is inactivated, in case of theft, the loss is limited. After the card is sold, this function can be used to activate the member card.

Steps:

While in Staff Operation Mode (after Staff Login), press <b>Func</b> three times to enter Staff Admin mode.	TUE 07 Sep 15:45 Amount: \$
Present Staff Card to enter Staff Admin mode.	* Staff Admin! * Wait StaffCard..
Press <b>Func</b> until seeing the screen as follows. Press <b>A</b> .	ActivateIDMember Press 'A'...
When you see the screen as follows. Present member card to activate member or press <b>Func</b> .	Waiting Card Or Press Func...
Press <b>1</b> to enter by card SN, <b>2</b> to enter by customer ID. Options that are only enabled in the Card Management Settings will be shown.	1)Card SN /2) CustomerID(1/2)?
Enter Card SN if it is selected. Then press <b>Func</b> .	Card SN: 123
Enter Customer ID it is selected. Then press <b>Func</b> .	Customer ID: 123456

This message is shown.	Done!
------------------------	-------

### 1.5.8 Set Customer ID

Applicability: Smart Card, ID Card

Card ID is normally used as a unique identification of each Member, but some companies prefer to use their existing ID nomenclature. The existing Customer ID (maximum 16 digits) can be entered through Terminals. There is a transaction record stored in the Terminal for this assign Customer ID action.

As the Customer ID is typed manually. Duplication might occur for smart card. If it happens, warning message will be shown when the card with duplicated customer ID is presented to the Terminal. Card Replacement by Customer ID for those cards will be denied until the customer ID of those cards is corrected. Please use Set Customer ID function with care.

While in Staff Operation Mode (after Staff Login), press <b>Func</b> three times to enter Staff Admin mode.	TUE 07 Sep 15:45 Amount: \$
Present Staff Card to enter Staff Admin mode.	* Staff Admin! * Wait StaffCard..
Press <b>Func</b> until seeing the screen as follows. Press <b>A</b> .	Set Customer ID Press 'A'...
Enter the Customer ID and press <b>Func</b> .	Customer ID: 123
Present smart card or ID card.	123 Waiting Card...
If smart card is presented and the process is done, this message will be shown.	Member Card Updated OK!

### 1.5.9 Issue Key-in ID Card

Just like opening an account with unique ID, issue key-in card lets staff to create a new virtual card account with any arbitrary ID.

Steps:

While in Staff Operation Mode (after Staff Login), press <b>Func</b> three times to enter Staff Admin mode.	TUE 07 Sep 15:45 Amount: \$
---	--------------------------------

Present Staff Card to enter Staff Admin mode.	* Staff Admin! * Wait StaffCard..
Press <b>Func</b> until seeing the screen as follows. Press <b>A</b> .	Issue KeyIn Card Press 'A'...
Enter Initial Bonus Value. Then press <b>Func</b> .	Initial Bonus Amount:
Enter Initial Prepaid Value. Then press <b>Func</b> .	Initial Prepaid Amount: \$
Enter an ID for the newly Key-In Card. Then press <b>Func</b> .	Customer ID: 12345
It is done.	Done!

## 2 iBonus Server

### 2.1 Features

- Microsoft SQL Server 2005 Support
- Microsoft SQL Server Express Support
- Data connection is done through ADO

### 2.2 System Requirements

#### 2.2.1 Recommended Hardware Requirements

Depends on the scale and the capacity requirement, the recommended system requirement is as follows:

- CPU : Pentium 2GHz Core Duo
- RAM :1GB DDR2
- Harddisk : 80GB

#### 2.2.2 Recommended Platform Requirements

- Microsoft Windows® XP Professional or Microsoft Windows® Server 2003 or Microsoft Windows® Vista Business or
- Microsoft Windows® 7 Professional
- Microsoft .Net framework 2.0
- Microsoft SQL Server 2005 (optional)
- Microsoft SQL Server Express (optional)

- Internet Information Service (IIS) (for web reporting)

## 2.3 Installation

The following procedure will install iBonus Server and iBonus reporting:

- Insert the iBonus Server CD
- Run the setup file <CD-ROM Drive Path>\ibonusserver\setup.exe
- Click <Next> >
- Click the radio box <I Agree> if applicable
- Click <Next >>
- Choose the path and whether everyone or the person who install the program can use the iBonus Program
- Click <Next > >
- Choose Language.
- Keep pressing Click <Next > > until the setup is finished

## 2.4 Administration

iBonus Server Administrative Tools has the following use:

- Providing wizard to create Microsoft SQL 2005 database
- Setting Accepted Company Code
- Viewing transaction log
- Viewing event log
- Adjusting timing settings
- Setting Expiry Mode

### 2.4.1 Starting

The iBonus Server Administration Tools can be started by:

Click <start> → <iBonus Server 3> → <iBonusServerAdmin>

### 2.4.2 Setting up Database

To establish a database:

In iBonus Server Administrative Tools

Click <Settings> → <Server config> → Click the tab <Database> → Click <Change> → Click <Ok> in the dialog box.

1. Create the database table:
  - a. Select database type. iBonus Server supports MS SQL Server. MS SQL Server 2005 or Express must be installed in advance if you wish to use it.
  - b. For Microsoft SQL Server 2005 or Express, enter Server Name, Authentication type, database path, database name, admin login, admin password and connection count.
  - c. Click <Create DB> to create the database table for iBonus Server.
  - d. Click <Next >

2. Testing the database:
  - a. Click <Test settings>
  - b. If everything is fine <Next > >
3. Saving the settings
  - a. Click <Save settings>
  - b. Click <Yes> in the dialog box.
  - c. Click <Finish>

### 2.4.3 Adding Accepted Company Code

It is important that company code must be added to Accepted Company Code List. Otherwise, iBonus server will not react to any terminal with the matching company code.

In iBonus Server Administrative Tools

- Click <Settings> → <Server config> → Click the tab <Advanced>
- Add the company code in the Accepted Code List. Multiple Company Code can be separated by commas “,”.
- Click <Save>.

### 2.4.4 ID Card Settings

Step to change the settings

In iBonus Server Administrative Tools

- Click <Settings> → <Server config> → Click the tab <ID Card >
- Change the settings below and click <Save> to apply changes

Settings available:

#### Default ID Card Operation

If set to be “Enable”, terminal will be enabled for ID card operation during the first registration. If set to be “Disable” terminal will be disabled for ID card operation during the first registration.

The terminal status can later on be changed at iBonus Server.

#### Decimal Mode

2 Decimals: In this case, the terminal will handle value to the significance of \$0.01

Integer: In this case, the terminal will handle value to the significance of \$1

#### Maximum Prepaid Balance

Maximum prepaid balance that can be stored in ID member card.

In 2 decimal mode, the maximum value of it is 83,886.07.

In integer mode, the maximum value of it is 8,388,607.

#### ID Operation Root Folder

The path which stores the files for batch issue member card or batch shelving member card.

### 2.4.5 ID Terminal Setup

Steps:

In iBonus Server Administrative Tools

- Click <Settings> → <ID Terminal Setup >
- Changes the settings stated below and click <Save> to apply changes.

After the terminal has been registered to server using Register Terminal for ID Card Operation, you will see the entry on the Terminal List. You can set the status (enable/disable) for that terminal and ID card formatting quota for that terminal. You can also grant unlimited quota for the terminal.

Note: setting terminal status to disable only deny the ID card operation. Smart card operation cannot be stopped by simply disabling terminal in server.

### 2.4.6 Changing Language

To change the language used in iBonus Server Administrative Tools: Click <Settings> → <Language> → Click the language in the list. Restart the iBonus Server Administrative Tools.

### 2.4.7 Loading Question File

The questionnaire file exported from iBonus Display can be imported to iBonus Server. The field memberInfo can be interpreted by the questionnaire.

Click <Settings> → <Load Question File> → Select the questionnaire file → Click <Open>

### 2.4.8 Viewing the Access Log

The server administration program can see the access log received from iBonus Terminal. By default all information in the access log is shown at the table as in different columns. You can hide some of the information of the access log for convenience during viewing.

At the menu bar click <View> → <Transaction Column Settings>

To hide the information in the field, click on the field names on in the table “Selected fields”. Then click <Remove <- >.

To show the information in the field, click on the field names on in the table “Available fields”. Then click <Add -> >.

The order of the fields can be arranged by selecting the field on the “Selected fields” then click <Up> or <Down>.

Click <Save> to apply the update and then click <Close>.

### 2.4.9 Viewing the Event Log

To view the even log, click <View> → <Full event log>.

### 2.4.10 Setting Expiry Mode

By default, iBonus Terminal follows the server’s expiry mode settings. After setting the expiry mode setting at the server, it will take some time for the Terminal to synchronize the settings. To change the expiry mode settings:

Click <Settings> → <Server Config>

In the expiry mode settings select Expiry Mode and Expiry Month.

Note: Please find the section Mode of Expiry for the detail on the meaning of Expiry Mode and Expiry Month.

Note: iBonus Terminal can override the server expiry mode setting by setting not following the server settings.

Note: Once the changes is applied, the settings will be applied to all ID card operations.

### 2.4.11 Tuning the Timing

Some timing can be tuned in iBonus Server. These timing is for setting how long an inactivation of iBonus Terminal is regarded as inactive, how long a (replace, repair, renew) request is regarded as expired, how often should a blacklist be downloaded, how long should the server log a warning in even log when no access log is received from iBonus Terminal and how often should the server start its batch process when no data is received.

Click <Settings> → <Server Config>

Adjust the values below:

Basic Settings:

- Minimum Replace Time states the maximum time the server should wait after receiving the replace request. If this setting is set enabled, after that time, iBonus Server will calculate the final value of the replaced card regardless of whether all data is received from all iBonus Terminal.
- Limit Request Linger states how long a request is stayed in the Terminal before it is deleted.

Advanced Settings:

The following settings will be automatically calculated by iBonus Server, but you can still fine tune them.

- Background process period, which states how often the server should start its batch process when no data is received.
- Limit Visit states how long the server regarded the Terminal as inactive when not receiving any signal from a Terminal. All (renew, repair and replace) request will be deleted when the Terminal is regarded as inactive.
- Limit Transaction Log states how long the Server and Terminal should emit warning after not receiving event from a particular Terminal.
- Limit Blacklist states how long the Server should emit warning after a Terminal is not downloading blacklist from the Server.
- Health Check Interval states the period to check the online status of the terminal, generate blacklist and process ID card shelving and batch member card issuing.

**Note:**

- Expiry Mode and the above timing settings are downloaded every 6 hours. It implies that changing the expiry mode settings and timing setting at server. 6 hours should be expected to take effect.

**2.4.12 Batch Issue ID Card**

To issue a large amount of ID member card, instead of presenting the bunch of cards to the terminal one by one, you can put the card information in a .csv file and let the server read the file and register all the cards in one go.

To batch issue cards simply edit a .csv file with the following structure and put it at the *ID Operation Root Folder*. Please refer to the section ID Card Settings at page 63.

The file name of the file has to start with the word “issue” and the extension must be .csv. For example: issue001.csv

The file format has to be as follows (The first line is optional):

```
CardSN,PrepaidBal,BonusBal, CustomerID
1002,300,0,12345678
1003,300,0,12345676
1004,300,0,12345679
```

You may edit the file with Excel and save as .csv for convenience.

After putting the .csv file at the path the server will apply the changes periodically. The .csv file processing period is based on health check interval. Please refer to section Tuning the Timing at page 65.

**2.4.13 Batch Shelving ID Member Card**

The purpose of shelving member card is for setting an initial amount on the ID card while setting the card to a kind of status which is inactivated(shelved.) The cards can then be retailed at third party. When the card is sold to customer, the card has to be activated. If the card is stolen while its status is shelved, the card can't be used.

To add shelved card simply edit a \*.csv file with the following structure and put it at the *ID Operation Root Folder*.

The file name of the file has to start with the word “shelf” and the extension must be .csv. For example: shelf001.csv

The file format has to be as follows (The first line is optional):

```
CardSN,PrepaidBal,BonusBal, CustomerID
1002,300,0,12345678
1003,300,0,12345676
1004,300,0,12345679
```

### 2.4.14 Batch Activate ID Card

To activate a large amount of ID member card, instead of presenting the bunch of cards to the terminal one by one, you can put the card information in a .csv file and let the server read the file and activate all the cards in one go.

To batch activate cards, simply edit a \*.csv file with the following structure and put it at the *ID Operation Root Folder*. Please refer to the section ID Card Settings at page 63.

The file name of the file has to start with the word “activate” and the extension must be .csv. For example: activate001.csv

The file format has to be as follows (The first line is optional):

```
CardSN  
1002  
1003  
1004
```

You may edit the file with Excel and save as .csv for convenience.

After putting the .csv file at the path the server will apply the changes periodically. The .csv file processing period is based on health check interval. Please refer to section Tuning the Timing at page 65.

You may edit the file with Excel and save as .csv for convenience.

After putting the .csv file at the path the server will apply the changes periodically. The .csv file processing period is based on health check interval. Please refer to section Tuning the Timing at page 65.

## 2.5 Server

iBonus Server collects transactions from Terminals. Technically speaking, it is Terminals which push transactions to Server. iBonus Server verifies the eligibility of renew, repair and replace request and authorizes or denies the pending request. It also generate blacklist initiated by replace requests.

### 2.5.1 Starting

By default iBonus Server starts it self during start up. If you start the iBonus Server manually, the following instruction should be followed.

The iBonus Server Administration Tools can be started by:

Click <start> → <iBonus Server 3> → <iBonusServer>

An icon appears at the Systray.

Right click on the icon → click <Administrative Tools> → click <Start Server>

## 2.6 Reporting

iBonus Server provides two types of reporting programs:

- Reporting application
- Report for Microsoft Reporting Service

Reporting Functions are provided in iBonus Server CD.

### 2.6.1 Reporting Application

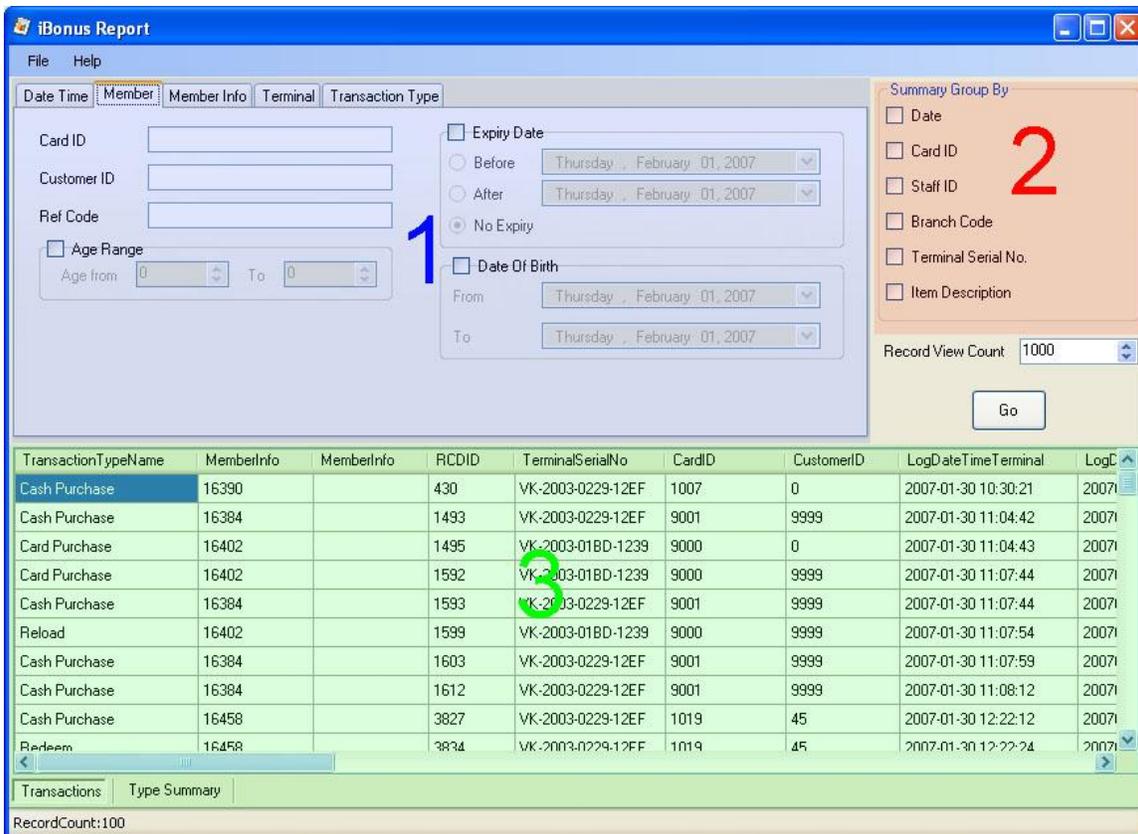
Reporting Application is a simple reporting program for those who do not have reporting service installed in the Server. It can also act as a monitor to check the status of all Terminals.

To execute reporting Application:

Click <start> → <iBonus Server 3> → <iBonusReport>

The reporting program is divided to 3 areas:

1. Constraints
2. Grouping criteria
3. Result



iBonusReport let you set the following constraints:

Date time, member info, member profile, terminal and transaction type

The results can be grouped by the following fields:

Date, Card ID, Staff ID, Branch Code, Terminal Serial No, Item Description

The following reports are available as result:

Transaction Log, Type Summary, Cash Summary and Bonus Point Summary

### **2.6.1.1 Monitoring Terminal Status**

To monitor terminal status

1. Click <Check> at menu bar
2. Click <Terminal status>

The terminal status report will be refreshed periodically.

### **2.6.1.2 Querying**

To execute a report generation:

1. Enter the criteria at the constraint area.
2. Select the grouping criteria.
3. Select the maximum number of transaction you want to show.
4. Click <Go>

Note:

- If no constraint is selected, all transaction will be counted
- If no grouping is selected, transaction report is generated; Otherwise, Cash Summary and Bonus Point Summary are generated.
- Maximum number of transaction does not affect the summary report

### **2.6.1.3 Exporting Report to Excel**

All the report can be exported to excel .CSV format.

To export the transaction report:

Click <File> on menu bar → Click <Export Transaction...> → Enter the path of the .csv file.

To export the summary report:

Click <File> on the menu bar -> Click <Export Summaries...> → Select one of the summary report at the sub menu. → Enter the path of the .csv file.

To export the terminal status report:

Click <File> on the menu bar -> Click <Terminal status...> → Select one of the summary report at the sub menu. → Enter the path of the .csv file.

## 2.6.2 Report for Microsoft Reporting Service

Sample reports for Reporting Service are provided. IIS is required for reporting server. Microsoft Reporting Service provides function which allows the result to be exported to excel, .tiff graphic, pdf and XML.

## 2.6.3 Sample Reports

The following reports are bundled:

AccessLog	That which queries the transaction log table
RenewRequests	That which queries the RenewRequests table
RepairRequests	That which queries the RepairRequests table
ReplaceRequests	That which queries the ReplaceRequests table
Terminals	That which queries the Terminal table
Staff	That which queries the Staff table
Member	That which queries the Member table
Grouping	That which summarizes the amount of different value transaction and group them by date, member card ID, staff ID, branch code and customer's age.
Redemption	That which summarizes the amount of different item redeemed (including manual redeem) at a particular time period. The time period can be branched to quarter, month, week and day.
Sales	That which summarizes the amount of all value type transactions at a particular time period. The time period can be branched to quarter, month, week and day.

For detail about the content of the database table, please see appendix.

## 2.6.4 Installation

Samples reports in reporting service are provided for basic queries. IIS is required for using Reporting Service.

Procedure for installing reporting service:

- Use web browser to browse to <http://localhost/Reports/>. Upload the reports files (.rdl) which are located in the <installation folder>/Reports/ of iBonus Server.  
If the SQL Server is located in another computer, replace the path localhost by the path of the other computer.

- Create Data Source.
  - a. In Data Source, click new data source.
  - b. Specify a name, e.g iBonus
  - c. Specify your connection type. e.g Microsoft SQL Server
  - d. Specify the connection string of the database. e.g Data Source=localhost; Initial Catalog=iBonus
  - e. Specify the credential if you want the user to view the report securely. e.g The credentials stored securely in the report server.
  - f. Then type the user name and password that has privileged to view the report.
  - g. Click Apply
- Upload report files
  - a. Click Home -> Upload File
  - b. Please browse the .rdl file.
  - c. Specify a name of the report.
  - d. Click OK
  - e. Repeat step a - d till all the .rdl files are uploaded.
- Link up the report to the specified data source
  - a. Click on the link of a report e.g AccessLog
  - b. If it shows "The report server cannot process the report. The data source connection information has been deleted.". Click Properties → Data Source.
  - c. Click Browse button to use shared data source.
  - d. Select the data source you have just created.
  - e. Click OK
  - f. Repeat step a - e until all the reports have been setup.

## Appendix

### 2.7 Hardware Specification of iBonus Terminal

Power	12VDC, 600mA
Cards Supported	Mifare Classic (1 Kbytes) Mifare Ultralight (512 bits) Magnetic
Non-volatile memory	32MB
Volatile memory	32MB
Display	16 x 2 LCD with Backlight
Receipt Printer Connectivity	Yes ESC/POS protocol supported 42 characters per line
Communication ports	Ethernet (10-Base T), RS232 57600 bps, Parallel Port
Real Time Clock	Last for approx. 1 day without power
Environment	Temperature: 0-45°C/ 32-115°F Humidity: Max 95%, non-condensing
Footprint	4.22 (W) x 7.36 (D) x 2.56 (H) (in) 106(W) x 190 (D) x 65 (H) (mm)
Weight	0.35 kg

### 2.8 Software Specification of iBonus Terminal

Maximum number of transaction log stored	5,000 (Won't accept any transaction when buffer is full)
Maximum number of Card renew record stored	3,000 (Won't accept renew request when buffer is full)
Maximum number of Card replace record stored	1,000 (Won't accept replace request when buffer is full)
Maximum number of Card repair record stored	1,000 (Won't accept repair request when buffer is full)
Default Blacklist Update Period	6 hours

### 2.9 Smart Cards Format

#### 2.9.1 Master Card

Name: wCompanyCode
Bytes: 2
Description: The code which represents the company who owns this block. The company code in the member card .and staff card created by the quota of this master card will be the same as this code.

Name: wIdentifier
Bytes: 2

<b>Description:</b> The code which indicates this block contains master card information.
--

<b>Name:</b> dwMasterID
<b>Bytes:</b> 4
<b>Description:</b> The card ID of the first member card, which will be formatted by the quota obtained from master card. The range with in dwMasterID and $dwMasterID + byCardX100*100$ is globally unit unique (unique across different company.)
<b>Limit:</b> 0-4,294,967,295

<b>Name:</b> dwNextMemberID
<b>Bytes:</b> 4
<b>Description:</b> The card ID of the next member card, which will be formatted by the quota obtained from master card. It will be increased whenever any quota is obtained from the master card. Actual quota left in the card is calculated by $(byCardX100 * 100 - (dwNextMemberID - dwMasterID))$
<b>Limit:</b> 0-4,294,967,295

<b>Name:</b> byCardX100
<b>Bytes:</b> 1
<b>Description:</b> The card formatting quota of this master card. The actual quota is one hundred times the value in this field. This field is not changed by the Terminal.
<b>Limit:</b> 0-255. I.e. A Master can initialize at most 25,500 cards.

<b>Name:</b> abyMaxCardValue
<b>Bytes:</b> 3
<b>Description:</b> It limits the maximum member card prepaid amount that can be operated or reloaded in the terminal reading this master card. The most significant bit of this field tells the Terminal whether or not to regard the actual prepaid amount is 1/100 as much as that stored in the field. If the bit is set to 0, the value in the field of prepaid amount is regarded as 100 as much as the actual value, so that it can store the value in the precision of two decimal places. If the bit is set to 1, the actual value of prepaid amount is regarded as equal to the integral representation of the field. In some countries whose currency does not have decimal place, system integrator can consider not to use decimal places in the card in order to have a larger maximum prepaid value.
<b>Limit:</b> When MSb is set to 0: 0-83886.07

When MSb is set to 1: 0-8388607
---------------------------------

Name: abyDESKey
-----------------

Bytes: 8
----------

Description:
--------------

A 64 bit encryption key for encrypting the data stored in member card using DES3 encryption algorithm.
--

Name: abyKeyA
---------------

Bytes: 6
----------

Description:
--------------

Key A for accessing the Member cards using Mifare Classic card
--

Name: abyKeyB
---------------

Bytes: 8
----------

Description:
--------------

Key B for accessing the Member cards using Mifare Classic card
--

## 2.9.2 Member Card

Block for storing the basic information which is the same among Ultralight Mifare card and classic card:

Name: wCompanyCode
--------------------

Bytes: 2
----------

Description:
--------------

The code which represents the company who owns this block. The company code in the member card .and staff card created by the quota of this master card will be the same as this code.
--

Name: wExpiryDay
------------------

Bytes: 2
----------

Description:
--------------

The date when the card expire. Its format is Year (7bit) Month (4 bit) Day (5bit)
---

This field has three formats to operate in the four modes of operation of expiry day.
---

1. No Expiry Day:
-------------------

Format: The whole field set to zero.
--------------------------------------

2. Relative Month Fixed Month
-------------------------------

Format: The Day field is set to zero
--------------------------------------

3. Expiry date extended from last visit.
--

Format: Year, month and day is set to the exact date of expiry.
---

Name: dwMemberID
------------------

<b>Bytes:</b> 4
<b>Description:</b> The unique member ID of the card. This value is assigned during card initialization. The member ID is globally unique among all cards issued in all different companies.
<b>Limit:</b> 0-4,294,967,295

<b>Name:</b> dwAccSpending
<b>Bytes:</b> 4
<b>Description:</b> The accumulated spending. The most significant bit of this field tells the Terminal whether or not to regard the actual prepaid amount is 1/100 as much as that stored in the field. If the bit is set to 0, the value in the field of prepaid amount is regarded as 100 as much as the actual value, so that it can store the value in the precision of two decimal places. If the bit is set to 1, the actual value of prepaid amount is regarded as equal to the integral representation of the field. In some countries whose currency does not have decimal place, system integrator can consider not to use decimal places in the card in order to have a larger maximum prepaid value.
<b>Limit:</b> When MSb is set to 0: 0-21,474,836.47 When MSb is set to 1: 0-2,147,483,647

<b>Name:</b> wMemberInfo
<b>Bytes:</b> 2
<b>Description:</b>  Purpose of flag MSB B[15-12] of wMemberInfo:  B[15] for storing if the memberInfo is already transmitted to iBonus Terminal B[15] is set when, MemberInfo data is newly saved or modified and not yet read by iBonus Terminal. When the memberInfo is read by iBonus Terminal B[15] is unset.  B[14] is for storing whether the user's information is valid It determines whether the language preference and the user's information are valid.  B[13-12] are for storing the language preference on iBonus display unit. When B[13]=0 and B[12]=0 iBonus default language is preferred When B[13]=1 and B[12]=0 iBonus alternate language 1 is preferred When B[13]=0 and B[12]=1 iBonus alternate language 2 is preferred When B[13]=1 and B[12]=1 iBonus alternate language 3 is preferred  The space left [11-0] in the member's card can let you add.

3 questions with 9-16 choices  
or 4 questions with 5-8 choices  
or 6 questions with 3-4 choices  
or 12 questions with 2 choices

B[0] is the LSb of wMemberInfo

- The answers for the questions are stored from the LSB of wMemberInfo.
- For each question, at most 16 choices, which occupy 4 bits in wMemberInfo, are allowed.
- For each question, at least 2 choices, which occupy 1 bit in wMemberInfo, are allowed.
- If there are n choices in a question, ceiling ( $\log_2(n)$ ) bit are occupied.
- If the answer for a question with choice (1.. n) is x, x-1 is stored in the corresponding bitwise position.
- 0s are padded if the bit is not occupied by any questions.

Example:

The question setting in an iBonus is

Question 1: 3 choices (say choice 1,2,3)  
Question 2: 16 choices (say choice 1,2,3,...16)  
Question 3: 2 choices (say choice 1,2)  
Question 4: 8 choices (say choice 1,2,3,...8)

The answer for question 1 occupies 2 bits, that is B[0-1]  
The answer for question 2 occupies 4 bits, that is B[2-5]  
The answer for question 3 occupies 1 bits, that is B[6]  
The answer for question 4 occupies 3 bits, that is B[7-9]  
B[10-11] are not used in this case, and are padded with 0s.

If the answer of the question of the questions is as follows:

Question 1: choice 2  
Question 2: choice 11  
Question 3: choice 1  
Question 4: choice 8

The following will be stored. (commas are used to separate the answer for individual question)

01,2345,6,789,01  
01,0101,0,111,00

<b>Name:</b> abyItemBonus
<b>Bytes:</b> 3
<b>Description:</b> The bonus point of the redemption item chosen in iBonus Display.
<b>Limit:</b> 0-8388607

<b>Name:</b> abyDOB
<b>Bytes:</b> 3
<b>Description:</b> Date of birth of the member. Byte 0: day Byte 1: month Byte 2: year counting from 1900

<b>Name:</b> abyBalBonus
<b>Bytes:</b> 3
<b>Description:</b> The bonus points left in this card.
<b>Limit:</b> 0-16,777,215

<b>Name:</b> abyBalPrepaid
<b>Bytes:</b> 3
<b>Description:</b> The monetary value stored in this card. The most significant bit of this field tells the Terminal whether or not to regard the actual prepaid amount is 100 <sup>th</sup> as much as that stored in the field. If the bit is set to 0, the value in the field of prepaid amount is regarded as 100 as much as the actual value, so that it can store the value in the precision of two decimal places. If the bit is set to 1, the actual value of prepaid amount is regarded as equal to the integral representation of the field. In some countries whose currency does not have decimal place, system integrator can consider not to use decimal places in the card in order to have a larger maximum prepaid value.
<b>Limit:</b> When MSb is set to 0: 0-83886.07 When MSb is set to 1: 0-8388607

<b>Name:</b> abyItemDes
<b>Bytes:</b> 11

<b>Description:</b> The name of the redemption item/ product. abyItemDes[0] is a special character used for storing the quantity and identifying whether it is a redemption item or product. Bit 7(MSb) abyItemDes[0] indicates that it is a product when it is set. Bit 6 of abyItemDes[0] indicates that it is a redemption item when it is set. Bit 6 and 7 of abyItemDes[0] is mutually exclusive. Bit 0-4 of abyItemDes[0] stores the quantity. abyItemDes[1..11] stores the item description.
<b>Limit: 10 characters for description, maximum quantity: 31</b>

<b>Name: abyMemberName</b>
<b>Bytes: 10</b>
<b>Description:</b> Member's name. It can be stored as 10 ASCII characters or 16 digits. It is normally used for storing characters. When entering member's name in the Terminal, it can store up to 16 digits. The format becomes: abyMemberName[0]=0x0 abyMemberName[1]=0x1 abyMemberName[2-9] is 64 bit integer.
<b>Limit: 10 Characters or 16 digits stored in 64 bit integer.</b>

Extended block for storing the information of the redemption item or product chosen in iBonus Display which facilitates multiple redemption.

<b>Name: wCompanyCode</b>
<b>Bytes: 2</b>
<b>Description:</b> The code which represents the company who owns this block. The company code in the member card .and staff card created by the quota of this master card will be the same as this code.

<b>Name: wIdentifier</b>
<b>Bytes: 2</b>
<b>Description:</b> The code which indicates this block contains Member card extended information.

<b>Name: abyItemBonus (This field appears 3 times in this block)</b>
<b>Bytes: 3</b>
<b>Description:</b> The bonus point of the redemption item chosen in iBonus Display.
<b>Limit: 0-8388607</b>

Name: abyItemDes (This field appears 3 times in this block)
Bytes: 11
Description: The name of the redemption item/ product. abyItemDes[0] is a special character used for storing the quantity and identifying whether it is a redemption item or product. Bit 7(MSb) abyItemDes[0] indicates that it is a product when it is set. Bit 6 of abyItemDes[0] indicates that it is a redemption item when it is set. Bit 6 and 7 of abyItemDes[0] is mutually exclusive. Bit 0-4 of abyItemDes[0] stores the quantity. abyItemDes[1..7] stores the item description.
Limit: 7 characters for description, maximum quantity: 31

### 2.9.3 Staff Card

Name: wCompanyCode
Bytes: 2
Description: The code which represents the company who owns this block.

Name: wIdentifier
Bytes: 2
Description: The code for telling that this block is storing the staff card data.

Name: dwStaffID
Bytes: 4
Description: The unique staff ID. This value is assigned during card initialization. The member ID is globally unique among all cards issued in all different companies.

Name: abyBranchCode
Bytes: 5
Description: The code which storing the code of the branch, in which the iBonus Terminal can be operated by this staff card.
Limit: 1-9999

Name: abyMaxTransaction
Bytes: 3
Description: The maximum number of transaction where this staff can handle. The most

significant bit of this field tells the Terminal whether or not to regard the actual prepaid amount is 100<sup>th</sup> as much as that stored in the field. If the bit is set to 0, the value in the field of prepaid amount is regarded as 100 as much as the actual value, so that it can store the value in the precision of two decimal places. If the bit is set to 1, the actual value of prepaid amount is regarded as equal to the integral representation of the field. In some countries whose currency does not have decimal place, system integrator can consider not to use decimal places in the card in order to have a larger the maximum prepaid value.

Limit:

When MSb is set to 0: 0-83886.07

When MSb is set to 1: 0-8388607

## 2.10 SQL Statements for Creating Tables

```
CREATE TABLE [dbo].[AccessLog](
[RcdID] [int] IDENTITY(1,1) NOT NULL,
[TerminalSerialNo] [char](20) NULL,
[CardID] [char](20) NULL,
[CustomerID] [char](16) NULL,
[LogDateTimeTerminal] [datetime] NULL,
[LogDateTerminal] [int] NULL,
[LogTimeTerminal] [int] NULL,
[LogDateTimeServer] [datetime] NULL,
[DateOfBirth] [datetime] NULL,
[TransactionType] [smallint] NOT NULL,
[ExpiryDate] [int] NULL,
[Description] [char](20) NULL,
[Quantity] [smallint] NULL,
[Amount] [decimal](17, 2) NULL,
[BalPrepaid] [decimal](17, 2) NULL,
[BonusAmount] [int] NULL,
[AccSpending] [decimal](17, 2) NULL,
[MemberInfo] [smallint] NULL,
[StaffID] [char](20) NULL,
[TerminalCode] [smallint] NULL,
[BranchCode] [smallint] NULL,
[CompanyCode] [smallint] NULL,
[TransactionID] [char](20) NULL,
[CardSN] [char](16) NULL,
[BalBonus] [int] NULL,
[BlacklistVersion] [datetime] NULL,
[TransactionCounter] [int] NULL,
[RefCode] [int] NULL,
[ProposedExpiryDate] [int] NULL,
[Age][int] NULL,
[StaffSN] [char](20) NULL
```

) ON [PRIMARY];

AccessLog	The transaction log which store all access log sent from Terminals
RcdID	An auto increment field.
TerminalSerialNo	The serial number of the Terminal where this log is from
CardID	The CardID of the card involved in this transaction 0-4294967295
CustomerID	The CustomerID of the card involved in this transaction. 0-9999999999999999
LogDateTimeTerminal	The time when the transaction is done on the Terminal based on Terminal local time.
LogDateTerminal	The integer representation of the date value of LogDateTimeTerminal. It is created for the convenience of query. Format: yyymmdd
LogTimeTerminal	The integer representation of the time value of LogDateTimeTerminal. It is created for the convenience of query. Format: hhmmss
LogDateTimeServer	The time when the server receive this transaction
DateOfBirth	The date of birth of the member of the card involved in this transaction.
TransactionType	The code which identifies the transaction type.
ExpiryDate	The expiry date of the card involved in this transaction. If the expiry date is in last visit mode, the format is yyymmdd. If the expiry date isn't set in the card it will be zero. If the expiry date is fixed month mode the format is yyymm99.
Description	The item code of the gift of product selected from iBonus Display
Quantity	The quantity of the redemption transaction 1-31
Amount	The amount of money changed in this transaction 0-8388607.00
BalPrepaid	The amount of money of the card after this transaction.
BonusAmount	The amount of bonus point changed in this transaction. 0-16777215
AccSpending	The amount of accumulated spending in the card in this transaction. 0-2147483647.00
MemberInfo	The flag which represent the user's answer in the multiple choice question of iBonus Display
StaffID	The staffID of the staff who is responsible for this transaction.

TerminalCode	The Terminal Code of the Terminal
BranchCode	The Branch Code of the Terminal
CompanyCode	The Company Code of the Terminal
TransactionID	The transaction ID sent from POS (cashier). It is used for relaying the iBonus transaction with POS transaction.
CardSN	The serial number of the card involved in this transaction.
BalBonus	The Bonus point in the card after this transaction.
BlacklistVersion	The version of blacklist saved in iBonus Terminal when this transaction takes place.
TransactionCounter	The number which serializes the transaction of each member card.
RefCode	The reference code used to identify the renew, replace and repair transactions.
ProposedExpiryDate	The expiry date calculated by the Terminal during renew.
Age	The age of the customer/member derived from his or her birthday and LogDateTimeTerminal. It is set as 0 if birthday is not defined.
StaffSN	The card SN of the staff card involved during the transaction.

```

CREATE TABLE [dbo].[Member](
[CardSN] [char](16) NOT NULL,
[CardID] [char](20) NULL,
[CustomerID] [char](16) NULL,
[MemberInfo] [smallint] NULL,
[DateOfBirth] [datetime] NULL,
[ExpiryDate] [int] NULL,
[BalBonus] [int] NULL,
[AccSpending] [decimal](17, 2) NULL,
[BalPrepaid] [decimal](17, 2) NULL,
[LastVisit] [datetime] NULL,
[Blacklisted] [bit] NULL,
[Replaced] [bit] NULL,
[CustomerIDDuplicated] [bit] NULL,
[TransactionCounter] [int] NULL,
[ProposedExpiryDate] [int] NULL,
CONSTRAINT [PK_Member] PRIMARY KEY CLUSTERED
([CardSN] ASC)WITH (IGNORE_DUP_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY];

```

Member	The table which stores the detail of all member cards and brand new cards.
--------	--

CardID	The CardID of the card. 0-4294967295
CustomerID	The CustomerID of the card. 0-9999999999999999
DateOfBirth	The date of birth of the member of the card involved in this transaction.
ExpiryDate	The expiry date of the card. If the expiry date is in last visit mode, the format is yyyyymmdd. If the expiry date isn't set in the card it will be zero. If the expiry date is fixed month mode the format is yyyyymm99.
BalPrepaid	The amount of money of the card.
AccSpending	The amount of accumulated spending in the. 0-2147483647.00
MemberInfo	The flag which represent the user's answer in the multiple choice question of iBonus Display
CompanyCode	The Company Code of the Terminal
TransactionID	The number which serialize the transaction of the member card.
CardSN	The serial number of the card.
BalBonus	The Bonus point in the card.
LastVisit	The time when this card last did transaction.
Blacklisted	The flag stating if this card is blacklisted
Replaced	The flag stating if this card is replaced
ProposedExpiryDate	The new expiry date requested during renew.

```
CREATE TABLE [dbo].[Staff](
[CardID] [char](20) NULL,
[CardSN] [char](16) NOT NULL,
[StaffName] [char](16) NULL,
[StaffInfo] [char](16) NULL,
[Blacklisted] [bit] NULL,
CONSTRAINT [PK_Staff] PRIMARY KEY CLUSTERED
([CardSN] ASC )WITH (IGNORE_DUP_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY];
```

Staff	The table which stores the detail of all staff cards.
CardID	The CardID of the card. 0-4294967295
CardSN	The serial number of the card.
StaffName	Not Used
StaffInfo	Not Used
Blacklisted	The flag stating if this card is blacklisted

```
CREATE TABLE [dbo].[Terminals](
[SerialNo] [char](20) NOT NULL,
[StatusCode] [smallint] NULL,
```

```

[Warning] [smallint] NULL,
[TimeLastTransaction] [datetime] NULL,
[TimeLastVisit] [datetime] NULL,
[UsingBlacklistVer] [datetime] NULL,
[IPAddress] [char](15) NULL,
[BranchCode] [smallint] NULL,
[TerminalCode] [smallint] NULL,
[Description] [char](40) NULL,
CONSTRAINT [PK_Terminals] PRIMARY KEY CLUSTERED
([SerialNo] ASC)WITH (IGNORE_DUP_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY];

```

Terminals	The table which stores the status, timing and info about every terminal.
SerialNo	The serial number of the Terminal
StatusCode	The status of the Terminal. active = 1 inactive = 2
Warning	The warning which states if there is anything abnormal about the terminal Can be the OR of the followings: Ok = 0 Exceed last visit = 1 Exceed transaction log =2 Exceed linger request =4 Duplicated branch code and terminal Code = 8 Blacklist not update = 16
TimeLastTransaction	The time when the Terminal sends back transaction.
TimeLastVisit	The time when the Terminal visit server.
TerminalCode	The Terminal Code of the Terminal
BranchCode	The Branch Code of the Terminal
CompanyCode	The Company Code of the Terminal
IPAddress	The IP address that the server recognize the Terminal as.
UsingBlacklistVersion	The blacklist version which is in the terminal.
Description	The text which describes the terminal.

```

CREATE TABLE [dbo].[RenewRequests](
[TerminalSerialNo] [char](20) NOT NULL,
[RefCode] [int] NOT NULL,
[CardSN] [char](16) NOT NULL,
[Status] [smallint] NULL,
[TimeChgState] [datetime] NOT NULL,
[ProposedExpiryDate] [int] NULL,
[RecordExpiryDate] [datetime] NULL,

```

```

CONSTRAINT [PK_RenewRequests] PRIMARY KEY CLUSTERED
(
[TerminalSerialNo] ASC,
[RefCode] ASC
)WITH (IGNORE_DUP_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY];

```

RenewRequests	The table which stores the detail of all renew request.
TerminalSerialNo	The serial number of the request originating terminal
RefCode	The ref code the which refer to the request
Status	The approval status of the request
TimeChgState	The time when the status is last changed
CardSN	The serial number of the card
ProposedExpiryDate	The new expiry date generated in the renew request operation.
RecordExpiryDate	The expiry date of this record.

```

CREATE TABLE [dbo].[ReplaceRequests](
[TerminalSerialNo] [char](20) NOT NULL,
[RefCode] [int] NOT NULL,
[CardSN] [char](16) NULL,
[Status] [smallint] NULL,
[TimeChgState] [datetime] NOT NULL,
[RequiredBlacklistVersion] [datetime] NULL,
[ExpiryDate] [int] NULL,
[CardID] [char](20) NULL,
[AccSpending] [decimal](17, 2) NULL,
[MemberInfo] [smallint] NULL,
[DateOfBirth] [datetime] NULL,
[BalBonus] [int] NULL,
[BalPrepaid] [decimal](17, 2) NULL,
[CustomerID] [char](16) NULL,
[TransactionCounter] [int] NULL,
[RecordExpiryDate] [datetime] NULL,
CONSTRAINT [PK_ReplaceRequests] PRIMARY KEY CLUSTERED
([TerminalSerialNo] ASC,
[RefCode] ASC
)WITH (IGNORE_DUP_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY];

```

ReplaceRequests	The table which stores the detail of all replace request.
TerminalSerialNo	The serial number of the request originating terminal
RefCode	The ref code the which refer to the request
CardID	The CardID of the card.

	0-4294967295
Status	The approval status of the request
TimeChgState	The time when the status is last changed
RequiredBlacklistVersion	The blacklist version which the terminal is required to have before this request can be approved.
CustomerID	The CustomerID of the card. 0-9999999999999999
DateOfBirth	The date of birth of the member of the card involved in this transaction.
ExpiryDate	The expiry date of the card. If the expiry date is in last visit mode, the format is yyyyymmdd. If the expiry date isn't set in the card it will be zero. If the expiry date is fixed month mode the format is yyyyymm99.
BalPrepaid	The amount of money of the card.
AccSpending	The amount of accumulated spending in the. 0-2147483647.00
MemberInfo	The flag which represent the user's answer in the multiple choice question of iBonus Display
CompanyCode	The Company Code of the Terminal
TransactionID	The transaction ID sent from POS (cashier). It is used for relaying the iBonus transaction with POS transaction.
CardSN	The serial number of the card.
TransactionCounter	The counter which serialize the member card transactions
BalBonus	The Bonus point in the card.
RecordExpiryDate	The expiry date of this record.

```

CREATE TABLE [dbo].[RepairRequests](
  [TerminalSerialNo] [char](20) NOT NULL,
  [RefCode] [int] NOT NULL,
  [CardSN] [char](16) NULL,
  [Status] [smallint] NULL,
  [TimeChgState] [datetime] NULL,
  [ExpiryDate] [int] NULL,
  [CardID] [char](20) NULL,
  [AccSpending] [decimal](17, 2) NULL,
  [MemberInfo] [smallint] NULL,
  [DateOfBirth] [datetime] NULL,
  [BalBonus] [int] NULL,
  [BalPrepaid] [decimal](17, 2) NULL,
  [CustomerID] [char](16) NULL,
  [TransactionCounter] [int] NULL,
  [RecordExpiryDate] [datetime] NULL,
  CONSTRAINT [PK_RepairRequests] PRIMARY KEY CLUSTERED
  ([TerminalSerialNo] ASC,

```

```
[RefCode] ASC
)WITH (IGNORE_DUP_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY];
```

RepairRequests	The table which stores the detail of all repair request.
TerminalSerialNo	The serial number of the request originating terminal
RefCode	The ref code the which refer to the request
CardID	The CardID of the card. 0-4294967295
Status	The approval status of the request
TimeChgState	The time when the status is last changed
CustomerID	The CustomerID of the card. 0-9999999999999999
DateOfBirth	The date of birth of the member of the card involved in this transaction.
ExpiryDate	The expiry date of the card. If the expiry date is in last visit mode, the format is yyyyymmdd. If the expiry date isn't set in the card it will be zero. If the expiry date is fixed month mode the format is yyyyymm99.
BalPrepaid	The amount of money of the card.
AccSpending	The amount of accumulated spending in the. 0-2147483647.00
MemberInfo	The flag which represent the user's answer in the multiple choice question of iBonus Display
CompanyCode	The Company Code of the Terminal
CardSN	The serial number of the card.
TransactionCounter	The counter which serialize the member card transactions
BalBonus	The Bonus point in the card.
RecordExpiryDate	The expiry date of this record.

```
CREATE TABLE [dbo].[IDMember](
    [CardSN] [char](20) NOT NULL,
    [CustomerID] [char](16) NULL,
    [ExpiryDate] [int] NULL,
    [BalBonus] [int] NULL,
    [AccSpending] [decimal](17, 2) NULL,
    [BalPrepaid] [decimal](17, 2) NULL,
    [LastVisit] [datetime] NULL,
    [ReplacedTo] [char](20) NULL,
    [ReplacedToCardType] [smallint] NULL,
    [TransactionCounter] [int] NULL,
    [IDCardStatus] [smallint] NULL,
    CONSTRAINT [PK_IDMember] PRIMARY KEY CLUSTERED
(
    [CardSN] ASC
```

```
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF,
IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON,
ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]
```

IDMember	The table which stores the detail of all ID member cards.
CardSN	The Card serial number written of the card. 0-18,446,744,073,709,551,615
CustomerID	The CustomerID of the card. 0-9999999999999999
ExpiryDate	The expiry date of the card. If the expiry date is in last visit mode, the format is yyyyymmdd. If the expiry date isn't set in the card it will be zero. If the expiry date is fixed month mode the format is yyyyymm99.
BalBonus	The Bonus point in the card.
AccSpending	The amount of accumulated spending in the. 0-2147483647.00
BalPrepaid	The amount of money of the card.
LastVisit	The time when this card last did transaction.
Blacklisted	The flag stating if this card is blacklisted
ReplacedTo	The serial number of the card to which the card is replaced.
ReplacedToCardType	The card type of the card to which the card is replaced.
TransactionCounter	The number which serialize the transaction sequence. This number increment during each transaction.
IDCardStatus	The status of this ID card: 1: normal 2: suspended 4: replaced 8: shelved

```
CREATE TABLE [dbo].[IDStaff](
    [CardSN] [char](20) NOT NULL,
    [PIN] [char](40) NULL,
    [BranchCode] [smallint] NULL,
    [MaximumTransaction] [decimal](17, 2) NULL,
    [IDCardStatus] [smallint] NULL,
    CONSTRAINT [PK_IDStaff] PRIMARY KEY CLUSTERED
(
    [CardSN] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF,
IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON,
ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]
```

IDStaff	The table which stores the detail of all ID staff cards.
---------	--

CardSN	The serial number of the card. 0-18,446,744,073,709,551,615
PIN	The PIN of the staff card
BranchCode	The branch code of the staff card
MaximumTransaction	The maximum amount that the staff can handle in a single transaction 0-8388607.00
IDCardStatus	The Status of the staff card: 1: Normal 2: Suspended 4: Replaced 8: Shelved

```
CREATE TABLE [dbo].[IDTerminals](
    [SerialNo] [char](20) NOT NULL,
    [BranchCode] [smallint] NULL,
    [TerminalCode] [smallint] NULL,
    [Description] [char](40) NULL,
    [IDCardFormattingQuota] [int] NULL,
    [StatusCode] [smallint] NULL,
    CONSTRAINT [PK_IDTerminals] PRIMARY KEY CLUSTERED
(
    [SerialNo] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF,
IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS = ON,
ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]
```

Terminals	The table which stores the terminal handling ID card status.
SerialNo	The serial number of the Terminal
BranchCode	The Branch Code of the Terminal
TerminalCode	The Terminal Code of the Terminal
Description	The description of the terminal
IDCardFormattingQuota	The quota left for formatting ID Card
StatusCode	The Status of the terminal 1: Active 2: Inactive

## 2.11 Transaction Types

Type name	Value
ISSUE_MEMBER_CARD	1000
PURCHASE_CASH	1001
PURCHASE_CARD	1002
REDEEM	1003
RELOAD	1004
UNDO_PURCHASE_CASH	1005

UNDO_PURCHASE_CARD	1006
UNDO_RELOAD	1007
UNDO_MANUAL_REDEEM	1009
CARRY_FORWARD	1010
SET_CUSTOMER_ID	1011
POSITIVE_BONUS_ADJUSTMENT	1012
NEGATIVE_BONUS_ADJUSTMENT	1013
ISSUE_STAFF_CARD	2000
BLACKLIST_STAFF_CARD	2001
STAFF_LOGIN	2002
STAFF_LOGOUT	2003
STAFF_FORCED_LOGOUT	2004
REQUEST_REPLACE_CARD_BY_CARD_ID	3000
REQUEST_REPLACE_CARD_BY_CUSTOMER_ID	3001
DO_REPLACE	3002
REQUEST_REPLACE_AUTHORIZATION	3003
REPLACE_REQUEST_EXPIRED	3004
REMOVE_REPLACE_REQUEST	3005
REQUEST_REPAIR	3200
DO_REPAIR	3201
DO_REPAIR_BY_REPLACE	3202
REQUEST_REPAIR_AUTHORIZATION	3203
REPAIR_REQUEST_EXPIRED	3204
REMOVE_REPAIR_REQUEST	3205
REQUEST_RENEW_CARD	3100
DO_RENEW	3101
REQUEST_RENEW_AUTHORIZATION	3102
RENEW_REQUEST_EXPIRED	3103
REMOVE_RENEW_REQUEST	3104
REQUEST_MESSAGE_LIST	4000
FINISH_TRANSACTION	4001
UNREGISTER_TERMINAL	5000
READ_SETTINGS	6000
READ_TIME	6001
ID_ISSUE_MEMBER_CARD	21000
ID_PURCHASE_CASH	21001
ID_PURCHASE_CARD	21002
ID_REDEEM	21003
ID_RELOAD	21004
ID_UNDO_PURCHASE_CASH	21005
ID_UNDO_PURCHASE_CARD	21006
ID_UNDO_RELOAD	21007
ID_UNDO_REDEEM	21009
ID_CARRY_FORWARD	21010
ID_ACTIVATE_MEMBER_CARD	21011
ID_SUSPEND_MEMBER_CARD	21020
ID_RESUME_MEMBER_CARD	21021

ID_CHECK_MEMBER_CARD_STATUS	21030
ID_SET_CUSTOMER_ID	21022
ID_REGISTER_RESUME_STAFF_CARD	22000
ID_SUSPEND_STAFF_CARD	22001
ID_STAFF_LOGIN	22002
ID_STAFF_LOGOUT	22003
ID_STAFF_FORCED_LOGOUT	22004
ID_SET_STAFF_PIN	22005
ID_REPLACE_TO_ID_CARD	23000
ID_REPLACE_TO_SMART_CARD	23001
ID_ONLINE_RENEW_CARD	24105
ID_REGISTER_TERMINAL	25100
ID_READ_TERMINAL_STATUS	25101
ID_DEREGISTER_TERMINAL	25102

## 2.12 Request Status

Request Status Name	Number stored in database	Meaning
Pending	1	This status indicates that the request is waiting for data synchronization from all terminals
Authorized	2	The status indicates that the request is authorized and may be already downloaded by the corresponding terminal.
Customer ID Duplicated	3	The status indicates that the request is invalid due to customer ID duplication.
blacklisted	4	The status indicates that the request is invalid because the card is blacklisted
Card Not Found/Card Has no expiry date defined	5	The status indicates that the request is invalid due to the card information is not found.
Authorization right occupied	6	The same card is doing the same type of request in another Terminal and the request is already authorized.
Card Replaced	7	Card is already replaced
Authorization right preempted	8	When a new request of the same type on the same card is added to the table Requests, any corresponding pending record of the same card in the table Requests will be changed to this status.
Invalid renew date	10	The proposed expiry date is

		invalid
--	--	---------

### **2.13 Certified Hardware List**

Magtek Serial Port Magnetic Stripe Reader  
Beijing Yokeli Technology GIT 100 Magnetic Stripe Reader  
Axicon SJE455R Bar Code Reader

### **2.14 House Cleaning Issues**

House cleaning can be done periodically by programming. Only the table AccessLog should be house cleaned. It is recommended to stop the server when house cleaning is being performed.

### **2.15 Default Settings**

#### **2.15.1 iBonus Terminal**

Default IP: 192.168.0.100  
Default user name: admin  
Default password: 123