<u>Cadenacio</u> **Device Manual**

Ver 1.0

ioinsec
Biometrics in Security

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Content

FCC Information to User

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

Caution

Modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Compliance Information : This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

Explanation for terms

☐ ˌ**Master/Administrator**

- It refers to the master who can enter into menu mode of terminal. He has such authorities to register/correct/delete users and also to change operation environment by modifying installations.

User ID of master is '0'. When user set terminal at first time, he have to use '1111' as a password. Master has to change this setting value or recognition method for fingerprint.

☐ **1 to 1 Verification**

- It means the method of verifying the fingerprint after a user ID or card has been entered.
- As it compares the only fingerprints registered at the user ID or card, it is called 1 to 1 Verification.

☐ **1 to N Identification**

- It refers to the method of identifying the user by using the fingerprints only.
- As it is kind of method of identifying the same fingerprint as the one registered without a user ID or card, it is called 1 to N Identification.

☐ ˌ**Security Level**

- It is the grade used for the verification of fingerprint. Tune security level from 'Very Low (1)' to 'Very High (5)' level. '3. Normal' is set in default. The higher security level is the lower FAR (fault acceptance rate). Reversibly the lower security level is the higher FAR. There is an inverse proportion between FAR and FRR (fault rejection rate).

☐ ˌ**Authentication Method**

- It means various forms of verification combined with FP(fingerprint) verification, PW(password) verification, RF(card) verification
Example) FP|PW: it verifies the person through password, when such verification means as fingerprint and password fail.

﹒Function Key

- For using Time & Attendance mode, you can set. It refers to such keys as [F0], [F1], [F2], [F3], [ENTER], and can change the verification into each verification mode.

I/O MAN (Controller)

- I/O Man is installed internal of office. And I/O Man communicates with encrypted data with 485 communication, control lock device and support various I/O ports.

﹒Access Sensor

- It was built-in sensor of terminal. When someone approaches within 1m to terminal, it makes the LCD turn the light on and the camera automatically work.

﹒LAN Card

- It is built in module in the terminal. It absolutely needs to communication with TCP/IP. If you want to use another communication like as RS232, 485, Wiegand not TCP/IP, you have to remove LAN card and exchange necessary communication module.

﹒Flash Card

- Flash card mounts 32Mbyte flash memory as a built-in module in the terminal. The flash memory saves firmware and all data. When the firmware is broken and need to update, you just replace it with new flash card.

﹒Key Phone Card (Option)

- It mounts as a module in the terminal. This board is installed in the terminal and connects switchboard. And then, it is possible to connect telephone through pressing extension digit in the terminal. And you can call with internal staff. When calling between visitor and staff, the staff can open the door with pressing password with using dial-up button.

1. Product Instruction

BKS-4800 device of Bioinsec company is fingerprint access control system which manages for access controller, time & attendance, managing membership and student management to check identification. This product can be used to identify each person with their fingerprint and save image at the point of person's recognition shot. As a result, when using RF system and keypad, it solves many problems which are for copied card, issuing same card and same pin number. Fingerprint has a feature like as permanence and unique. Because it is cost-effective device, it widely uses in the world. The optic sensor of BKS-4800 has developed by Bioinsec's own technology. And then Bioinsec is proud to be strong durability and stability. Over 100 hundreds of larger enterprises, academies and governments which have been supplied with BKS-4800 have a reputation of it.

BKS-4800 is directly mounted CMOS camera on the main board which function doesn't support in other company. It supports reduce the cost and gives high performance. And it can be saved at captured user's image for access granted / failed and check image of visitor in remote. In addition, it adds AC97 voice codec for high quality sound file and it can be possible for downloading voice file (wav) to terminal and user can make their wanted language voice file.

BKS-4800 is basically connected I/O Man which is supporting power supplied and easy installation. It supports powerful solution through various I/O ports and it provide 128 x 64 size of LCD, 12 kinds of key, 5 kinds of function key for user friendly environment. When the user try to access terminal, the access sensor is waking up, the light of LCD turns on, greeting message is heard and web-camera is working at the point. Communication is TCP/IP basis. It is possible to support RS-232/485 Wiegand and dial up communication with optional board. And you just can replace LAN Card with your wanted communication board.

The speed of CPU has updated from 200Mhz to 400Mhz. As a result, high speed processing and recognition speed. We have made flash memory, LAN Card to be a module. If there is some problem with those parts, user just replaces each part for recovery of terminal. In case of standalone mode and disconnected situation, user can save recognition image through inserting 1GByte Micro SD Memory Card (T Flash) in the terminal. These various factions will help your high security system for access controller. And it can be widely used for enterprise, lab, and academy etc.

1-1 Product Specification

CPU	32bit Micro processor, 400MHz
Memory	NAND Flash 128Mbyte, 64Mbyte RAM 1Gbyte Micro SD Memory Card (T Flash) Option
LCD	126X64 Graphic LCD
Sensor	Optic, 500 DPI
WebCam	Built-in 1.3Mpixel CMOS Camera Focal Length : 3.7mm Iris : Fixed Angle Of View : 92˚(D)
Access Sensor	Light is on: when a man approaches.
Size	(H)160mm X (L)156mm X (D)34mm
Fingerprint data size	512 Byte
User Registration	1:1 User : 10,000 Persons (1user with 1FP) 1:N User: 4,000 Persons (1user with 1FP) RF Card : 100,000 Persons Log data : 100,000 data Image Saving : 1G SD Memory Card (Option)
IN/OUT port	Interface with Controller (I/O MAN) Lock 2Port , Exit button, Fire Alarm, Door Sensor, Lock Sensor, Output 2Port, Spare I/O 5Port
Communication	TCP/IP on board, (RS-485, RS-232, Wiegand optional card)
Language / Voice	Korean/English/Italian etc.. (supporting multi language select) User-configuration for making voice guide through Wav file
Power consumption	350mA
Options	RF-Card, Key Phone, Sub-reader

1-2 Product Feature

- **High-performance CPU use**
  - It supports fast recognition to use 32 Bit 400 MHz ARM CPU.
- **Built-in mass storage memory**
  - It basically built in 32Mbyte NAND flash memory.
  - There is socket which supports mounting Micro SD Memory Card for saving image. If you mount 1G or 2G T-Memory Card, there isn't any problem for saving log and image saving.
- **Mounting for various external RF reader**
  - It is possible to mount EM, MIFARE, etc.
  - It can configure In/Out reader with other company's RF reader through 2 kinds of Wiegand Input Port.
- **Web Camera Function**
  - Saving image for access succeed / Fail image through built in camera in OnBoard
  - Remote control and visitor view by videophone (Option)
- **Interlocking speed gate**
  - It can be set for door open time by 1/10 sec unit.
  - It is possible to set door lock open time at least 0.5 sec unit to interlock speed gate.
- **Interlocking parking system**
  - It supports for One terminal with 2 reader for IN/OUT.
  - I/O Man is design to control each relay for each reader for interlocking parking system.
- **Access sensor with greeting message**
  - When someone try to access terminal within 1 M, the LCD turn the light on , working web-camera and listening greeting message due to access sensor.
- **Built in Key phone (Option Board)**
  - Connect PBX in the internal company. And call with external number with using BKS 4800 and external number through phone. It is possible to open door with pressing password in the phone for customer to be able to come in.
- **AC97 voice file play (playing wav file)**
  - It supports high-quality sound and downloading voice file or sound source which is made by user.
- **Supporting Multi language**
  - Language is selectable through menu of terminal. Voice guide can be changed after

recording.

- **Installation I/O Man for Control access door & Extension of I/O**
    - I/O Man and BKS-4800 is communicated with encrypted data through exchanging key for high security.
    - I/O Man can't communicate with new terminal without pressing set up button for doing encrypted communication both of all.
    - It supports various I/O ports including fire alarm.
    - It supports 2 kinds of relay.
- **Reliance on using fingerprint**
    - It solves the security problems which can be happed in case of using card system or keypad system like as copied card, losing etc.
- **Reliable fingerprint algorithm**
    - FAR and FRR is minimized by development of Bioinsec's own algorism.
- **Applying control for access door and management Time & Attendance**
- **TCP/IP built in the terminal is able to manage many terminals.**
- **Supporting Flexible function key for managing time & attendance**
    - 4 kinds of programmable function key and designated time & attendance code up to 9 kinds are to be flexibly use for managing Time & Attendance. You can adopt various functions with one terminal.
- **Management with low cost**
    - Regarding ID card, it needs to be re-issue for new user and missing it and it needs cost. But if you use fingerprint terminal, there doesn't need any extra additional fee.
- **EM or MIFARE card can be used for built in RF reader in terminal from each reader's sort.**
- **Standalone mode or Network connection**
    - Bioinsec's fingerprint access controller system can be used for standalone or TCP/IP, RS-232, RS-485 and MODEM with server. And it is possible to make your own program with using SDK supplied with product package. BKS-4800 have their own RTC and management for log (Up to 10,000) and it can be used for time& attendance without I/O Man (Lock controller)
- **User time zone setting and reporting**
    - It is possible to download timezone, schedule from server to terminal by weekly or monthly.
- **High-Speed user download**
    - It takes just 10 seconds to download 10,000 users from server to terminal.
- **Automatically transmission log**
    - When the terminal and server is connected, the log is automatically transmitted to

server and then deleted in terminal.

2. The matters to be checked

2-1 Precaution / Emergency

- The matters that demands special attention for safety

Don't turn the power on when there is the impurity in plug.
Don't operate with wet hand nor let water inside the machine.
Don't install electro flow or a leak of electricity.
Don't install in place under direct sunlight, water, severe change of temperature and explosiveness.
Please be careful to install or move the terminal by customer.
Don't install the terminal in damp or dusty place because it can be happened electronic short and failure.
Set up terminal internal place. When you must terminal outside, please make supplement box to protect terminal at out side environment.
Refer wiring installation manual for set up terminal.
Enroll master ID and his fingerprint after installation terminal.
Don't put the alcohol, benzene, water like as liquid and pin, needle like as metal in the fingerprint optic sensor.
Be careful not to go into drink, water, drug like as those liquid in the terminal
Don't drop terminal and give strong shock.
Don't spray water on it to clean nor wipe it off with benzene, thinner or alcohol.
Don't carelessly break down or fix terminal.

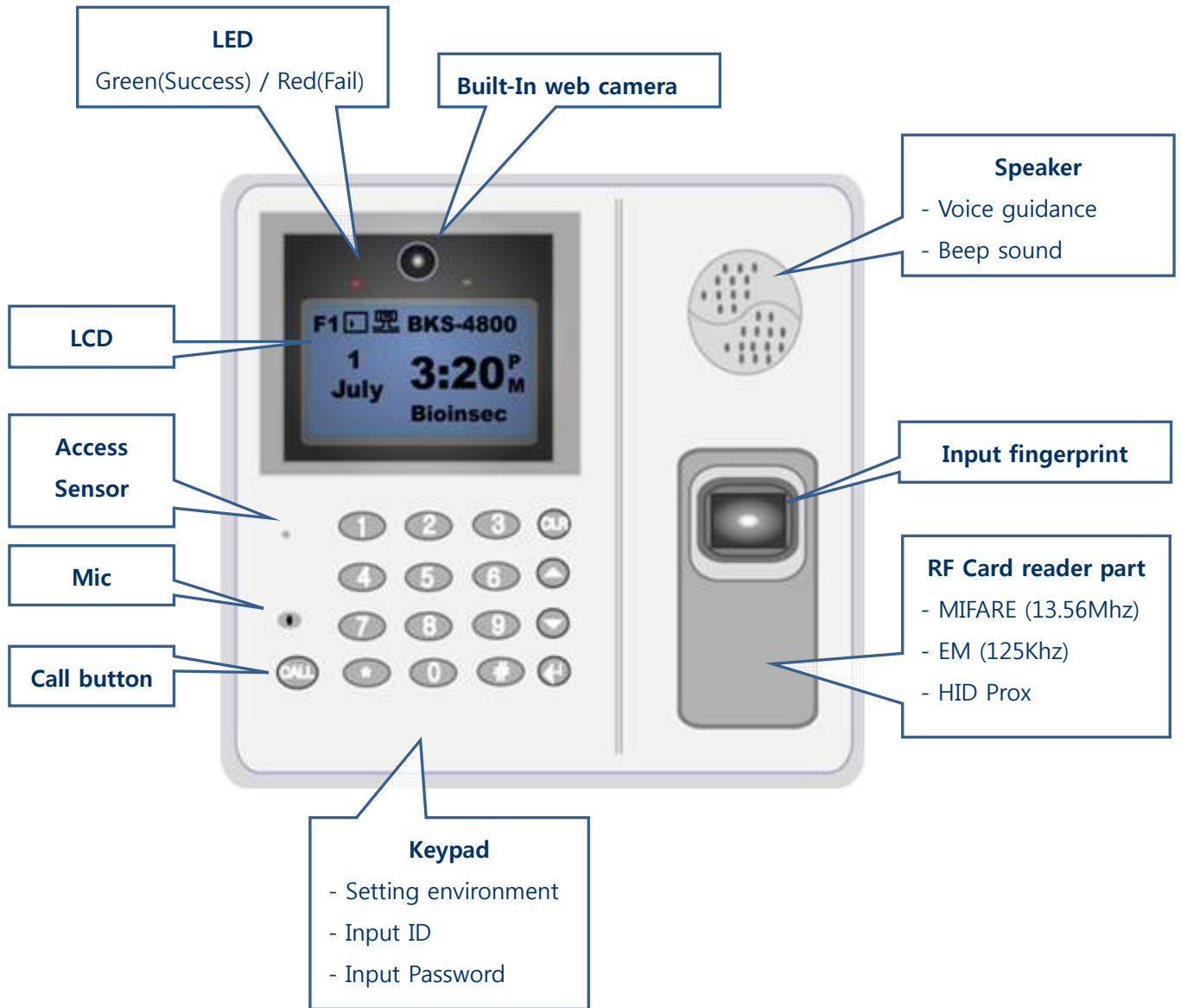> ※ *If there are any accidents not to carefully use in the cautions, there is not responsibility*

- **The matter should be done at first time**

  - Change system password for your security.
  - Default setting password at manufacturing site : 1111
  - Power should be supplied after all cablings are completed.
  - When you can't verify fingerprint well
  - Try again, after removing some dirties and water on fingerprint
  - Please lightly place finger on the sensor.
  - Don't move fingerprint when the fingerprint is sensing.

- **In case of fingerprint hard to be processed**

  - When device is in disorder without special problem, Just push Reset switch, then it 's back to setting status before latest trial.
  - You can call anytime to customer support center for your trouble.

2-2 Terminal Configuration

LED
Green(Success) / Red(Fail)

Built-In web camera

Speaker
- Voice guidance
- Beep sound

LCD

F1 ☐ ☷ BKS-4800
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Access Sensor

Input fingerprint

Mic

RF Card reader part
- MIFARE (13.56Mhz)
- EM (125Khz)
- HID Prox

Call button

Keypad
- Setting environment
- Input ID
- Input Password

2-3 Icon Guidance

	Network(TCP/IP) communication connected status with server
	TCP/IP communication disconnected status with server
	Serial communication connected status with server
	Serial communication disconnected status with server
	MODEM communication connected status
	MODEM communication connected status with server
	Try to connect MODEM connection
	MODEM communication connected status with server
	A mark for communication line between terminal and I/O Man
	Locking status
	Unlocking status
	Forced lock status
	Forced open status
	Locking status by scheduled

	Unlocking status by scheduled
	Lock down status
	Lock open status
	Attend (Sign for entering internal)
	Leave (Sign for doing out outside)
	Going out
	Going In
	Access

2-4 Screen Information & Voice Guidance

File Name	Operation	Voice Guidance
100.wav	Access Granted	Succeed
101.wav	Access Failed	Sorry, Authentication failed
102.wav	There is not user registration information.	Sorry you are not register please confirm and re-try it
103.wav	Screen for entering user card	Please enter your card
104.wav	Screen for placing user fingerprint	Place your finger on the sensor.
105.wav	Screen for entering user's PIN	Please enter your PIN code.
106.wav	Screen for contacting card or fingerprint	Please your enter your card or fingerprint
107.wav	Screen for entering user's card or PIN	Please enter your card or pin code
108.wav	Screen for user's fingerprint and PIN	Please enter your fingerprint or pin code
109.wav	Screen for entering card, fingerprint and PIN.	Please enter your card, fingerprint or pin code
110.wav	Screen for retrying	Try it again.
111.wav	Screen for administration menu	Please enter your master
112.wav	Screen for registration user	Enrolled
113.wav	When user registration is failed	Registration failed
114.wav	When the date deletion is succeed.	Deleted
116.wav		
115.wav	Other operation sound effect	Updated it
120.wav	Success sound effect	Pee rick"
121.wav	Fail sound effect	"Pee beek"
122.wav	Sound effect for input card	"Peek"
123.wav	Sound effect for input fingerprint	"Ding dong"
124.wav	Button sound effect	"Peek"
125.wav	Alarm sound effect	"Siren"
126.wav	Greeting	"Thank you for visiting

※ **It is possible to make sampling data of 24Khz when voice file is made by 16bit / 11Khz. After making wanted voice files and make same file name and download to terminal.**

2-5 The Proper Method For Registration And Input Of

Fingerprint

- The proper method of fingerprint input.
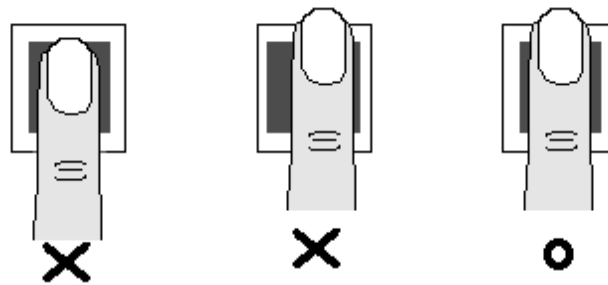
- The proper method of fingerprint position.
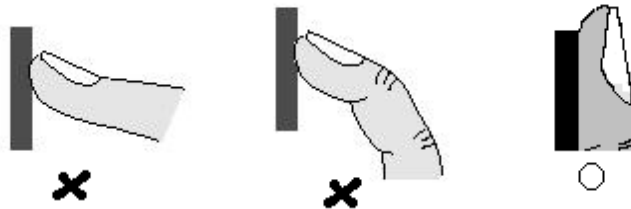
3. Terminal Setting

3-1. Menu Setting

< Button Information to use terminal >

CLR	It is **'clear key'** for moving to the upper menu stage without saving and cancel.
⬆️ ⬇️	It is **'arrow key'** which can manage curser scroll down or up.
↵	It is **'enter key'** for confirming the selection mode and getting into the lower menu stage and saved.
✱	1) It is **'asterisk key'** in grouping mode to mark all figures in the other place of ID number, 2) browse all user list for using wild card. 3) mark & delete check (√) and ".." When input IP address at network mode.
#	It is **'sharp key'** for deleting and like as back space key.

- **Master Login**

  Administration menu allows new user registration,
  edition, deletion and system setup. Push "0" and
  "enter key" button and input '1111' as the initial set
  value. And go to administration menu.

  ※ If you loose Admin's password, turn "ON" Admin's
  passing switch in the terminal and go to change into
  Admin's mode. Then you can change your password.

  ```
  F 🔲 🖳  BKS480

  Enter Password:

        ****

              BioInSec
  ```
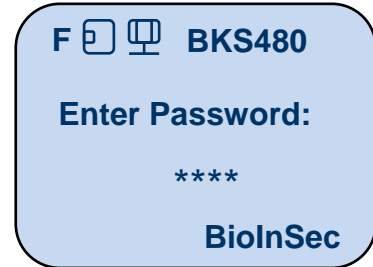
- **Selecting Menu**

  First time, when entering into menu, there are 3 kinds
  of menu in the LCD. But, it is possible to see one more
  menu   with managing arrow key for 3 times. It is
  possible to control menu by arrow key. After selection
  menu and press 'enter key', there are sub menus. It is
  possible to select each menu by 'enter key'.

  ```
        Administration

  1. User
  2. Service
  3. Door Setup
  ```
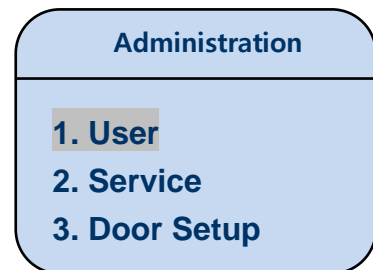
- **Check Box**

  When there is menu for selecting multi items and
  control up & down side with using arrow button. For
  selecting and cancel of item, please use '* key'. Once
  pressing of '* button', it is selected. Twice pressing of '*
  key', it is canceled. Selected item is checked like as 'V'.
  After selecting item, if you press 'enter key', it goes
  higher menu. If user presses 'clear key', the setting
  value isn't saved at this time.

  ```
        ID : 1234

  1.✓ FP
  2.   Card
  3.   PIN
  ```
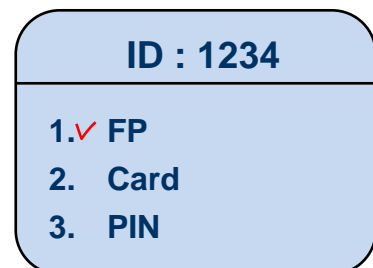
- **List Box**

There is list box in the user registration menu for the user registration. With using 'arrow button', go to menu of 3 FP1 and press 'enter key'. It takes 3 times to enroll fingerprint and LCD screen will be shown success message. And Asterisk ('*') appears in the right of menu by saving like as right side image. If you want to improve the authentication rate or register another fing er for convenience, push "2.FP2" and keep the same process as "1.FP" registration. Card is same as that method.

ID : 1234

1. Save & Exit
2. Access Mode
3. FP1*
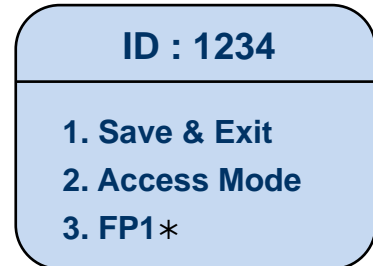
- **Wild Card**

If user wants each user's information by one by one, just input each ID for deleting user information.
But user wants to delete all user, press '*' button and 'enter key'. As like above wise, all user information are deleted.

User delete

Enter user ID:
|
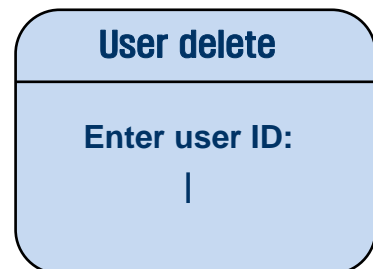
- **Scroll Button**

For managing menu with scroll button, it needs to be used by 'arrow button', The digits is going up, and down with using Scroll button.

Button Volume

0   0   31
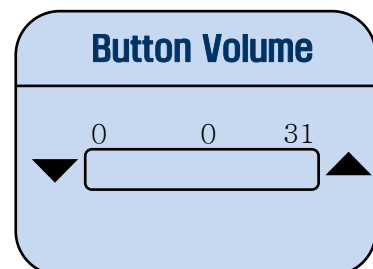
3-2. The Organization Of Menu

```
1 User ─┬─ New User ─┬─ Save & Exit
        │            │  Access Mode ─┬─ FP
        ├─ Edit User │  FP1          │  Card
        │            │  FP2          │  PIN
        └─ Delete    │  Card         │  Card+FP
                     │  PIN          │  Card+PIN
                     │  Security Level └─ Card+FP+PIN
                     │
                     └─ Security Level ─┬─ Terminal Set
                                        │  Very Low
                                        │  Low
                                        │  Normal
                                        │  High
                                        └─ Very High
```

```
                                      Very Low
                                      Low
                                      Normal
                                      High
              Security Level          Very High    Up/Down Key
                                                   No-F1-...-F4
2 Service     Free Scan                            F1-...-F4-No
                                      Key
              Time & Attend
                                      Display       Disable
              Event                   Items         Text
                                      Timer         Icon


                                      Delete
                                      Output
                                      Mask Event    Network
                                                    26 Wiegand
                                                    34 Wiegand

                                                    Lock Event
                                                    Access
                                                    Other Event
```

3   Door
- Configuration
  - 1-Door
  - 1-Door (In/Out)
  - 2-Door
- Door
  - Reader(In)
    - Auth. Mode
      - Authorize
      - Grant Active
      - Deny All
      - Card Grant All
    - Card Reader
    - FP Reader
      - Local
      - Wiegand1
      - Wiegand2
    - Unreg. Alarm
    - Expired Alarm
  - Reader(Out
  - Pulse Time
  - Input/Output
    - Door Contact
      - Disable
      - Input1
      - Input2
    - RequestToExi
    - Relay2
  - Time Delay
  - Alarm
    - OpenTooLongTime
    - OpenTooLong
      - Enable
      - Output
      - High Time
      - Low Time
    - ForcedOpen

4 System
- Administrator
  - Admin PIN
  - Admin FP
- Terminal ID
- Reader
  - Exposure
    - Very Low
    - Low
    - Normal
    - High
    - Very
- Date & Time
  - Set Date
  - Set Time
- Monitor
  - BackLight Time
  - LCD Contrast
  - LCD Brightness
- Sound
  - User Volume
  - Admin
  - Button
- Camera
  - Run/Stop Mode
    - Automatic
    - Manual
- Door Phone
  - Operation Mode
    - Disable
    - Inter Phone
    - Standard
    - Speed Dial
    - Single Number
  - Volume
  - Open Number
  - Speed Dial No
  - Tone
    - Ringback
    - Busy
    - Fast Busy
  - Silence Time
  - Tone Check

5 Network
- MAC Address
- Network Mode
- Dynamic Address
- Local IP Address
- Subnet Mask
- Gateway
- Server Host
- Server Port

6 Language
- English
- Italian
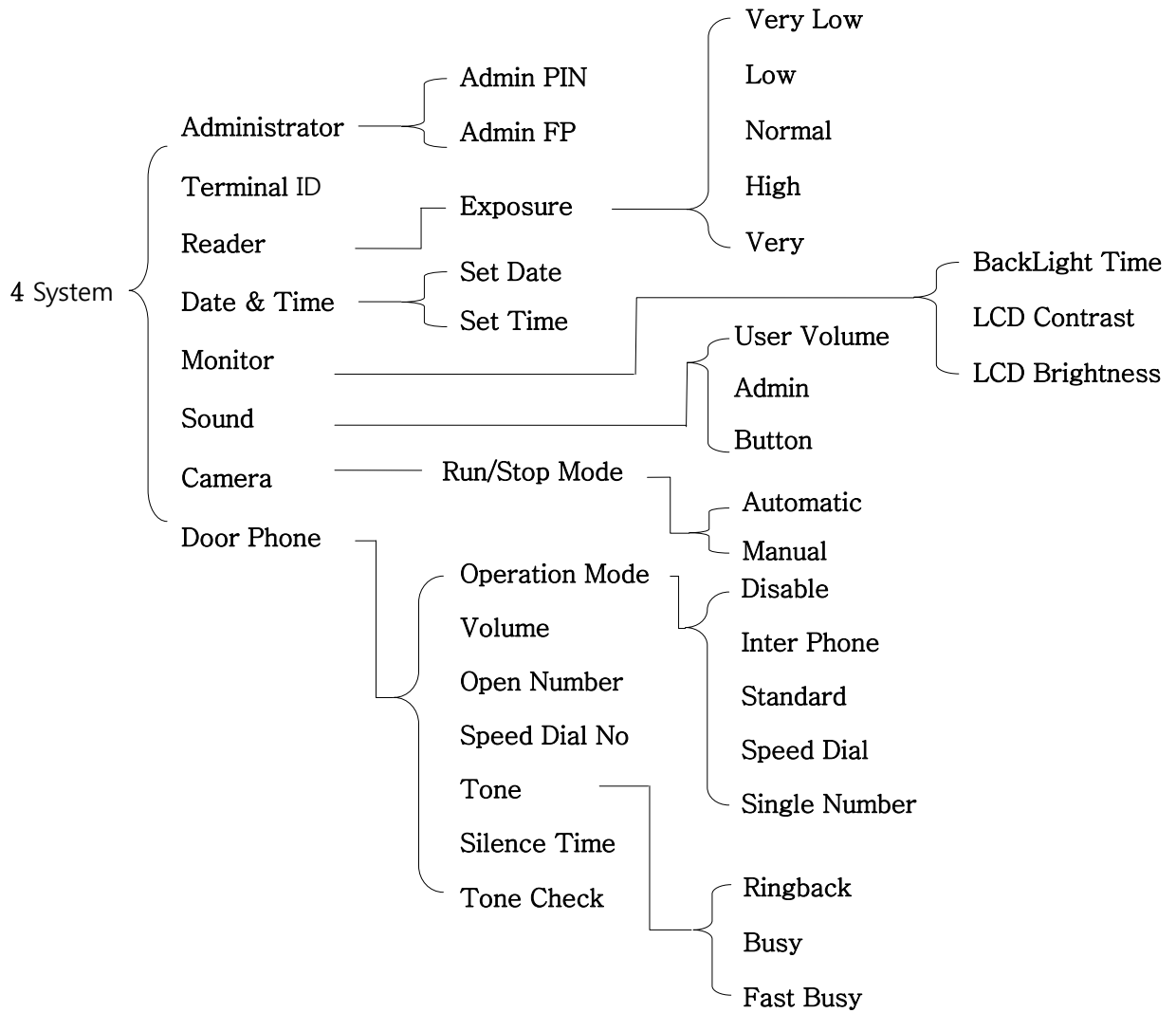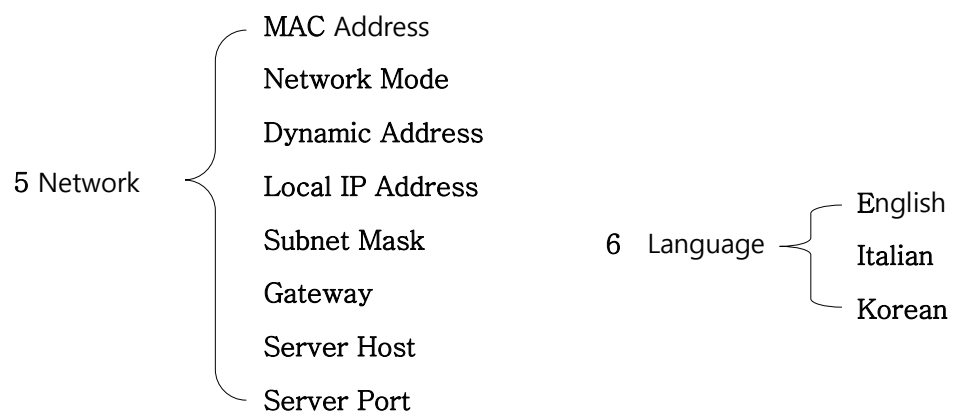- Korean

3-3. Detail Menu Explanation

1. User

This menu is for user resistor, edit, delete and access method.

● **New User**

[Input User ID] is for registration user ID.

If there is already registered user ID, there is message like as [Overlapped ID].

When new user is created, there are items of menu.

① Save & Exit

This menu is for saving user information. If user doesn't select this menu, the user information is canceled. After finishing date, message of [data is saved] is shown.

② Access Mode

This menu is for setting of user access method.

1 : FP

2 : Card

3 : PIN

4 : Card+FP

5 : Card+PIN

6 : Card+FP+PIN

It is possible to select multi selection. From 1 and 3, user can get access granted with just 1 method. From 4 to 6, it needs to get access granted by its turn of combination.

③ FP1

User can save user's 1st kind of fingerprint. The sensor read fingerprint for 3 times.

④ FP2

User can save his/her $2^{nd\ t}$ kind of fingerprint. If you want to improve the authentification rate, you can re-enroll same fingerprint in FP2. The sensor read fingerprint for 3 times.

⑤ Card

Users can register his/her card in the terminal. Contract card to RF module under the fingerprint sensor and you can hear ' Bee' sound and contact again for final registration of card.

⑥ PIN

Users can register his/her PIN code in the terminal.

User should enter PIN code from 4 and 8 digits for twice. When 1st PIN code needs to be same as last thing, the PIN code is saved. If the date is not same, user can see message like as [Incorrect !]. When user sees this message, please input PIN code again.

⑦ Security Level

User can set the security level by personal.

1 : Terminal Set (Its level is up to terminal's setting)

2 : Very Low

3 : Low

4 : Normal

5 : High

6 : Very high

● **Edit User**

After pressing user ID which needs to be edited, user can see same sub menu like as new user registration. Select item which will be revised and input new data. If you want to change authentication method on target ID, scroll down to the target ID by 'arrow button' and touch 'enter key' and it is ready to change. If you keep push '*' button for seconds on edit user, it shows all ID list in BKS-4800.

● **Delete User**

For checking user ID to be deleted, please message appears at [1:Yes 2:No]. If you select [1:Yes], the user ID is deleted. If you select [2:No], the deleted is canceled.

Delete user is finished. Voice message announces as [Deleted]. If you want to delete all user data, press '*' button and 'enter key'. It will be shown to select [1:Yes 2:No] as user deletion. After finishing deleting user, Voice message announces as [Deleted]

2. Service

This menu is for management of function of BKS-4800

● **Security Level**

This sets the security level of terminal

If user sets security level as [terminal setting], his/her security level effects on below setting.

  1 : Very low

  2 : Low

  3 : Normal

  4 : High

  5 : Very high

There are 5 level of setting security level for fingerprint identification.

If the security level is higher, it has possibility of high FAR (fail accept rate) but has possibility of low FRR (false reject rate).

If the security level is lower, there is possibility to be high of FAR (false accept rate).

● Free Scan

● Time & Attend

   ① Key

     For being shown Time & Attendance function on LCD window. It's set the function key between arrow key and side key.

      1 : Arrow Key

      2 : No-F1-…-F4

      3 : F1-…-F4-No

   ② Display

     T&A status is shown at LCD.

      1 : Disable (When you don't want to use T&A function, just check)

      2 : Text　　(Display message as IN, OUT, ABSENCE, etc)

      3 : Icon　　(Display icon as same step as text)

   ③ Items

      1 : Enable (Select each item for enable or not)

      2 : Text　　(Select text for each function key)

      3 : Icon　　(Select icon for each function key)

   ④ Timer

   ⑤ The timer is for setting time on LCD. (0=always, 1~255 sec)

● Event

BKS-4800 store many event log records included the lock event (door open/close),

Access Event and Other Event. If you don't want to store "Lock Event" data, disable it. When BKS-4800 use for standalone mode and no need the Log record, sometimes push "Delete Event" stored Event or disables all Events. It helps the fast operation speed to prevent from full memory data.

    ①   Delete Event

        Delete event to be set

    ②   Output Type

        This is for selecting data output type.

        1 : Network   (Log is transmitted to connected server)

        2 : 26 Wiegand   (Log is transmitted to ACU)

        3 : 34 Wiegand   (Log is transmitted to ACU)

    ③   Mask Event

        If you don't want to store the events for each menu, please click it in the check box.

        1 : Lock Event (If its menu is enable, lock event doesn't' transmit to server)

        2 : Access Event (If its menu is enable, access event doesn't transmit to server)

        3 : Other Event (If its menu is enable, other event doesn't' transmit to server.)

3. Door Setup

- Configuration
    - ① 1-Door
    - ② 1-Door (In/Out)
    - ③ 2-Door
- Door
    - ① Reader(In)
        - 1 : Auth. Mode
            - Authorize
            - Grant Active
            - Deny All
            - Card Grant All
        - 2 : Card Reader
            - Local
            - Wiegand1
            - Wiegand2
        - 3 : FP Reader
        - 4 : Unreg. Alarm
        - 5 : Expired Alarm
    - ② Pulse Time
    - ③ Input/Output
        - 1 : Door Contact
            - Disable
            - Input1
            - Input2
        - 2 : RequestToExit
        - 3 : Relay2
    - ④ Time Delay
    - ⑤ Alarm
        - 1 : OpenTooLongTime
        - 2 : OpenTooLong
            - Enable
            - Output
            - High Time
            - Low Time
        - 3 : ForcedOpen

4. System

It is a manual for changing terminal system setting.

- Administrator
    ① Admin PIN (Password)

    It needs to change admin password to log in terminal from 4 and 8 digits. Its default admin password is 1111. And it needs to change Admin password for security. If user set new admin password, it needs to input same password for twice to check its password. If the data is incorrect, it is shown a message like [incorrect data!]. And you need to try it again.

    ② Admin FP (Fingerprint)

    It is possible to log in terminal by registered administrator's fingerprint which is possible to enroll and revise. At default setting, it doesn't have any fingerprint as an admin fingerprint. If user wants to log in terminal by admin fingerprint, it is possible to use that function. It takes 3 times scanning time for making accurate fingerprint template data.

- Terminal ID

  Whenever you use many terminals, it is possible to designate ID for identifying each terminal. (1~999)

- Reader
    ① Exposure

    It can control the sensor exposure time to get more high quality image.
    If fingerprint is dry, it would be better to set high level. If the fingerprint is wet, sensor's exposure is set to low. User check fingerprint status, it will be helpful to be high verification rate. You can check the fingerprint image from Bio-Manager as well. First, check the image remained on terminal and you select the most clear image level.

    1 : Very Low

    2 : Low

    3 : Normal

    4 : High

    5 : Very High

- Date & Time
    ① Set Date

This is the menu used to set the date.

(YY/MM/DD – Year/Month/Date)

Once, the date is fixed, the date keeps going if the power isn't supplied.

It is possible to set the date at program.

② Set Time

This is the menu used to set the date and time (HH:MM:SS).

Once, the time is fixed, the date keeps going if the power isn't supplied.

It is possible to set the date at program.

● Monitor

① BackLight Time

This is the menu to choose the time for LDC back light. (0=always / 1 ~ 255 sec)

When the digit is set to '0', it means the light is on all the time.

After setting this time, there isn't any additional input, the back light turn the light off.

② LCD Contrast

This can adjust darkness. (from 0 to 63). The setting value is higher, the screen is darker

③ LCD Brightness

This can adjust brightness of LCD screen from 0 to 7. The setting value is higher, the screen is brighter. The selected grade is higher; the brightness of screen is brighter.

● Sound

① User Volume

② Admin Volume

③ Button Volume

This is the menu to adjust the sound volume when users press button from 0 to 31.

● Camera

Select active mode of camera which is built in.

① Run / Stop Mode

1 : Automatic

- This is to be connected with LCD's backlight and when user accesses, camera is working. Once LCD's backlight is off then, camera is stopped.

2 : Manual

- If you make camera working always, you need to change into manual mode. Manual mode is different from Auto mode, so Manual mode can be stopped or after electricity is blowing out and then it keeps working always. (Caution :

At manual mode, user should work at Manual mode serve menu.)

● Door Phone

It is possible to connect with internal exchange phone and it is possible to make a phone with Internal conversation.

Key-phone module should be built in the terminal for working.

① Operation Mode

1 : Disable

2 : Inter Phone

3 : Standard

- This is general internal phone mode so if call button is pressed after that calling sound is being heard. If visitor pressed internal phone number, receiver phone is being dialed by using terminal Keypad. If receiver gets the phone call, then it is able to have a conversation.

4 : Speed Dial

- This is short number mode, press "Call button" and press stored short number then it is possible to have a conversation.

5 : Single Number

- This is Single Number Mode, press "Call Button" and connect exchange person (Connecting number is Speed dial number is "0")

② Volume

It is possible to change volume for User, Admin etc.

③ Open Number

During phone call, by using dial button, you can set password number for opening door

④ Speed Dial No

At operation mode, if user use speed dial number mode, it is to enroll for being applied to speed dial no.

⑤ Tone

There is no standard of tone so different kind of sounds come out per exchange phone. In this case, if basic setting is not matched with sound, you can set regarding serve sound.

(On /Off time setting is available from 1~90 → 0.1sec at distance)

1 : Ringback

2 : Busy

3 : Fast Busy

⑥ Silence Time

Without sound conversation, when key phone is turned on, as waiting time, after this time, automatically, please hang up the phone.(0~255) 0=always

⑦ Tone Check

5. Network

This menu is with network setting for managing terminal. There are 3 kinds of network setting type.

※ *Menu for TCP/IP Mode*

① MAC Address

It is for checking MAC address of terminal.

② Network Mode

This menu is for using TCP/IP [LAN] as communication mode.

　1 : Serial

　2 : Dial-up

　3 : TCP/IP

③ Terminal IP (Local IP)

It is for setting terminal's IP mask of terminal.

Its IP is for terminal and needs to do ping to communicate with server.

[.] is managed by **' *' button**.

④ Subnet Mask

It is for setting subnet mask of terminal.

Regarding gateway, you can check it network environment of server. It absolutely needs to be same as server.

[.] is managed by **' *' button**

⑤ Gateway

It is for setting gateway of terminal.

Regarding gateway, you can check it network environment of server. It absolutely needs to be same as server.

[.] is managed by **' *' button**

⑥ Server IP

It is for server IP which is for managing terminal. Regarding server IP, you can check it network environment of server.

[.] is managed by **' *' button.**

⑦ Server Port

It is for server port of managing terminal. (1~65536)

Default value is 8008

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※ *Menu for Serial Mode and Dial Up Mode*

① MAC Address

This mode is for checking MAC address of terminal.

② Network Mode

This mode is for setting the network of terminal.

③ Serial Speed

This mode is for setting the serial speed of terminal.

1 : 9600

2 : 19200

3 : 38400

4 : 57600

5 : 115200

6. Language

It is to choose language for LCD Screen.

① English

② Italian

③ Korean