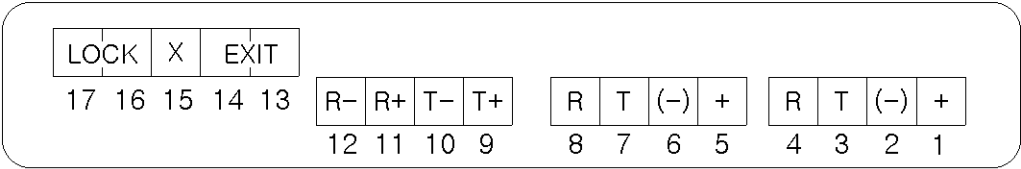


3.7 Input, Output Specification

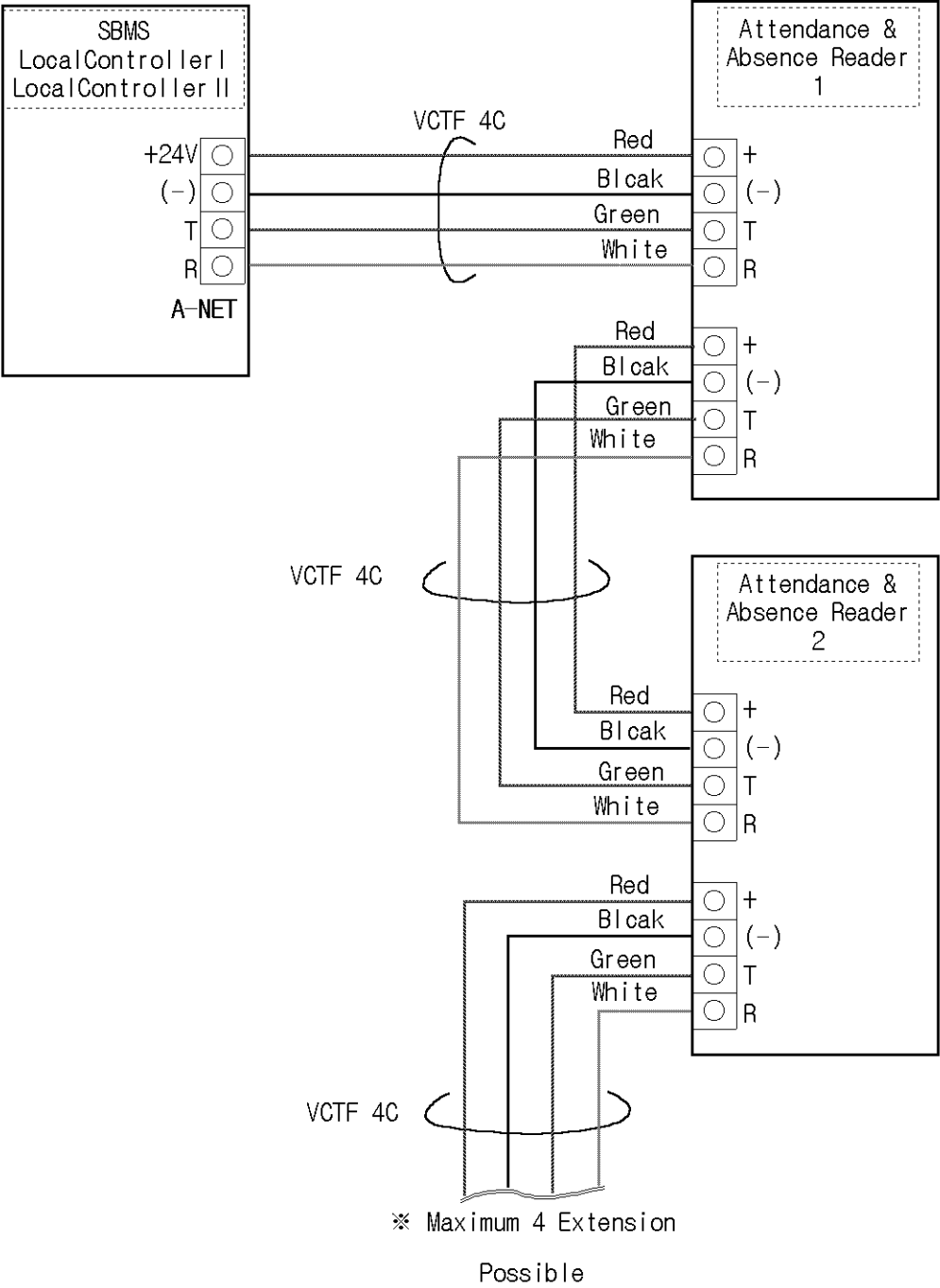
3.7.1 External Input, Output Terminal



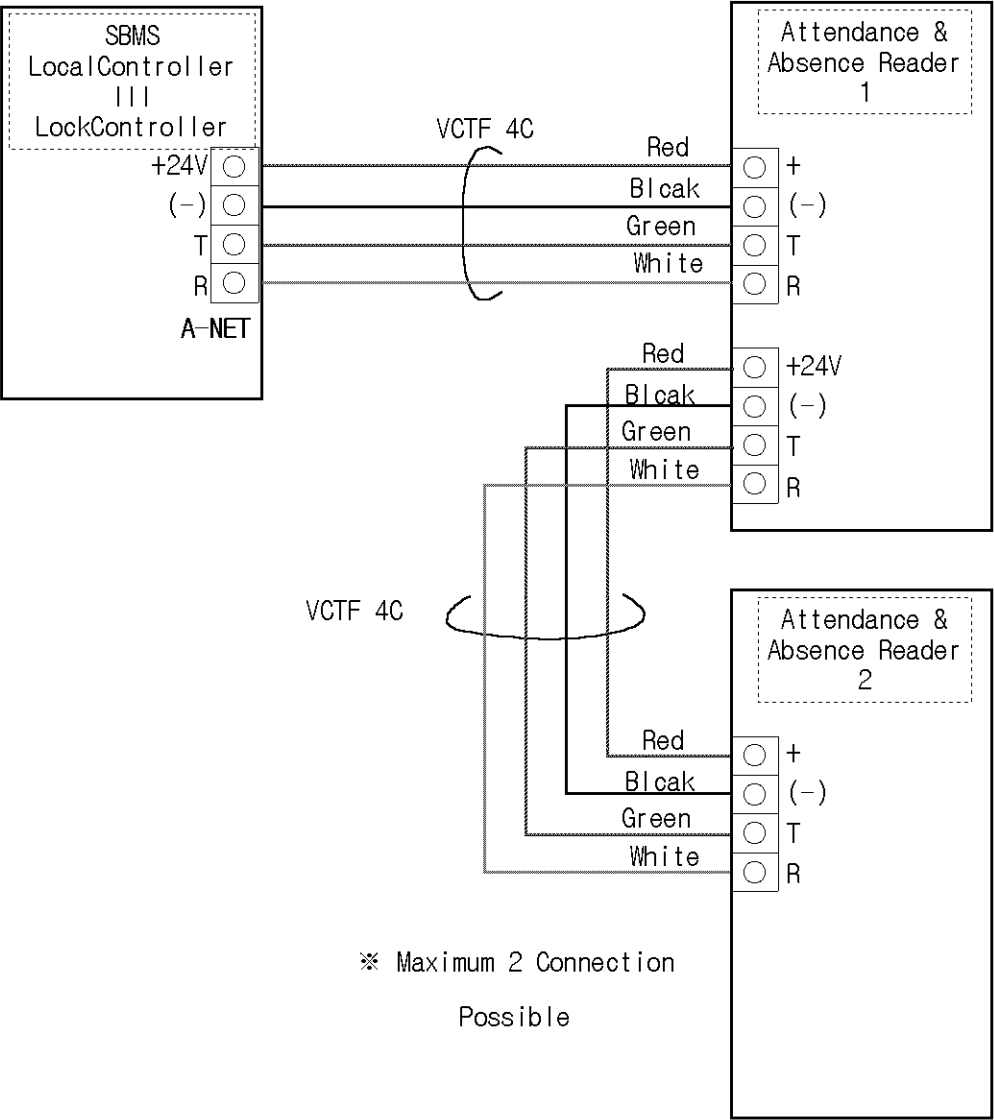
No	Name	Input/Output	Specification
1	+	Input	Power
2	(-)	Input	
3	T	Input	RS-422 Receive (Rx)
4	R	Output	RS-422 Send (Tx)
5	+	Input	Power
6	(-)	Input	
7	T	Input	RS-422 Receive (Rx)
8	R	Output	RS-422 Send (Tx)
9	T+	Input/Output	RJ-45 Output
10	T-		
11	R+		
12	R-		
13	EXIT	Input	LAN : EXIT Button
14		Input	SBMS : Not used
15	Not used		
16	LOCK	No voltage Output	For only single type, used for Electric magnetic lock. ※ By using Electric magnetic lock type selection switch, select NO(Normal Open) or NC(Normal Close)
17		No voltage Output	

3.8 Total Interface Connection Diagram

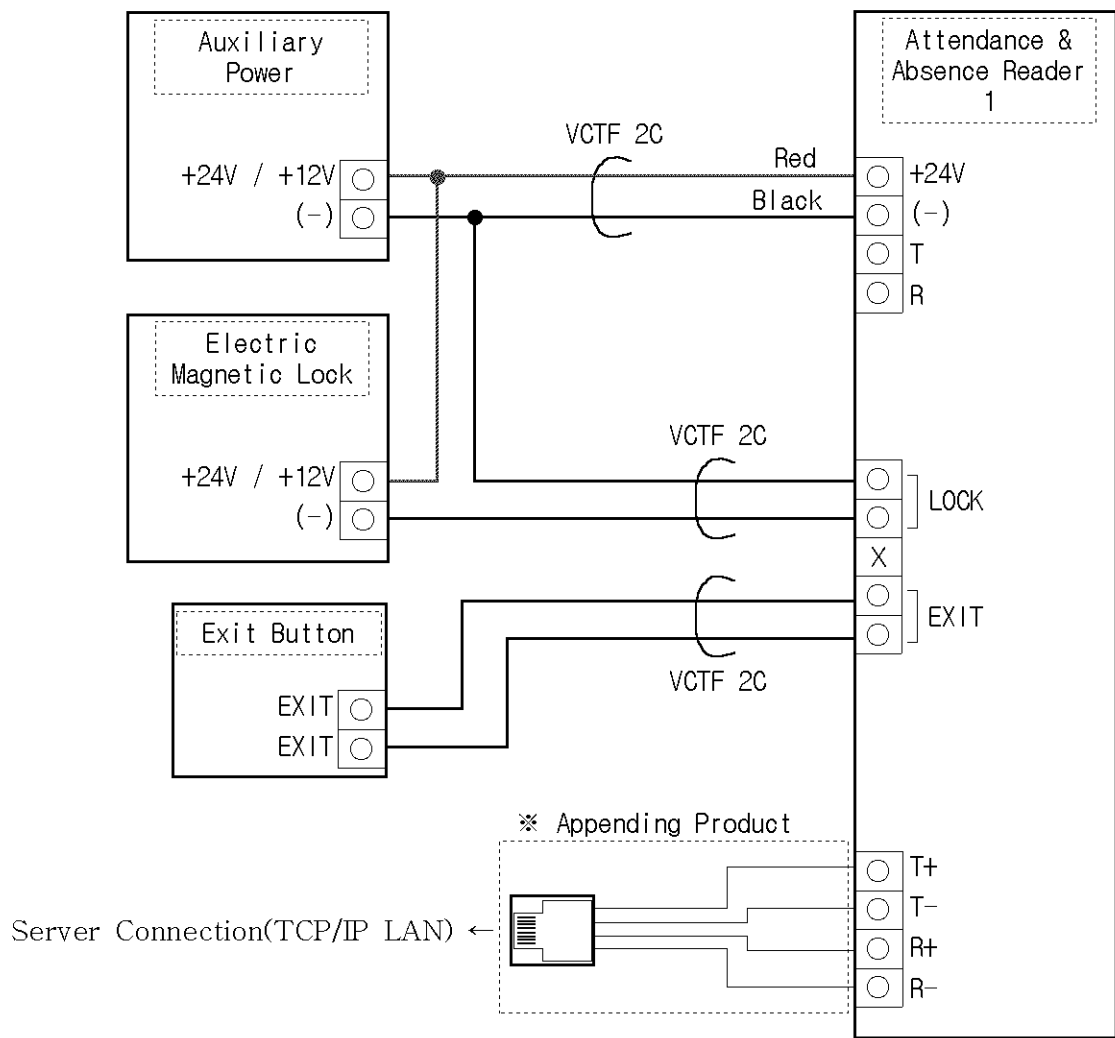
3.8.1 SBMS Local Controller I & SBMS Local Controller II Connection



3.8.2 SBMS Local controller III & Lock controller Connection



3.8. Attendance & Absence Operating Program Connection



4. Function

4.1 Function List

No	Name	No	Name
1	Register Function	7	Guide voice Function
2	Authentication Function	8	Buzzer Function
3	Access Function	9	LCD/LED Display Function
4	Inquiry Function	10	EXIT Button Connection Function
5	Crime prevention/Access modification Function	11	Register DB Copy Function
6	Detect Abnormalities Function		

4.2 Register Function

- 4.2.1 Master Register·Modification & Deletion
- : A function that register, modify, and delete a manager(Master) who can set and change each function particulars.(set available for 2 Person)
- 4.2.2 User Register & Deletion
- : A function that register and delete accessible user.
- User register & deletion is done by manager authority.
- 4.2.3 Setup Communication Type
- : Setup upper machine which connect with this machine, and setup RS-422, TCP/IP related information.
- 4.2.4 Time Setup Function
- : Setup current time, attendance&absence time.
- (Attendance&Absence time does not used when using SBMS)
- 4.2.5 Security Level Setup Function
- : A function that setup level which determine success when authenticate fingerprint.
- ※ If security level is low, easy to authenticate but wrong recognition rate is high. If security level is high, wrong recognition rate is low but hard to authenticate.
- 4.2.6 Access Door Setup Function (Door open time, Force open, Force close
- : Not used when using SBMS)
- : Setup access door open time, setup or cancel to keep door opened, or to lock door for limited time.
- 4.2.7 All Information Deletion
- : All registered information is deleted for machine initialize.

4.3 Authentication Function

4.3.1 Attendance&Absence Operating Program(TCP/IP) Connection

(1) "Smart Card + Fingerprint" Authentication

- ① It searches user info in terminal and authenticates by reading fingerprint or password stored in terminal.
- ② If user info or fingerprint/password is not stored in terminal, it authenticates by reading fingerprint/password in card.
Access permission is determined by upper machine.
- ③ If fingerprint or password does not exist in card, it requests user info to upper machine and authenticates by receiving fingerprint or password from upper machine.

(2) "Smart Card" Authentication

- ① It authenticates by searching user info from terminal.
 - ② If terminal does not have user info, it requests user info to upper machine and access permission is determined by upper machine.
- ※ According to access setup, it can only authenticate user registered in terminal

4.3.2 SBMS Authentication

- ① It searches user info in terminal and authenticates by reading fingerprint or password stored in terminal.
- ② If user info or fingerprint/password is not stored in terminal, it authenticates by reading fingerprint/password in card.
Access permission is determined by upper machine.
- ③ It transmits authenticated user info to upper machine.

4.4 Access Function

: Registered user or manager can open an access door by authenticating registered card and fingerprint.

4.4.1 RF Card + Fingerprint Access("Smart Card + Fingerprint" Authentication)

: RF Card first, and input fingerprint. Double Authentication

4.4.2 User ID(Resident Number) + Fingerprint Access("Smart Card +Fingerprint")

: User ID input first, input finger print. Double Authentication(User ID is resident number)

4.4.3 RF Card + Password Access ("Smart Card + Fingerprint" Authentication)

: RF Card input first, input password. Double Authentication.

4.4.4 RF Card Access ("Smart Card" Authentication)

: Can access by reading registered card.

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- 4.5 Inquiry Function (Not used when SBMS using)
- 4.5.1 Attendance&Absence Time Inquiry
 - : Can inquiry normal attendance time, normal leaving time, saturday attendance time, and saturday leaving time setup in terminal.
 - 4.5.2 Door open time Inquiry
 - : Can inquiry door open time setup in terminal.
 - 4.5.3 Force Open, Force Close Time Inquiry
 - : Can inquiry force open, force close time setup in terminal.
 - 4.5.4 Authentication type Inquiry
 - : Can inquiry authentication type setup in terminal.
- 4.6 Crime prevention/Access modification Function
 - : Can change crime prevention mode(set/cancel/patrol) at card reading and input finger print when using SBMS connection. Can modify access.
- 4.7 Detect Abnormalities Function
 - : When open machine's cover by force or occur error like buffer overflow, transmit error signal to upper machine(SBMS or Operating System).
- 4.8 Guide voice Function
 - : Output voice message.
- 4.9 Buzzer Function
 - : Output buzzer for confirmation when using keypad and button.
- 4.10 LCD/LED Display Function
 - : By output LCD/LED, easily recognize current status.
- 4.11 EXIT Button Connection Function
 - : Can connect exit button used by inner person.
- 4.12 Registered DB(Data Base) Copy Function
 - : Can copy existing machine's DB to new machine's DB by connecting each other with cable
 - ※Can download or upload relevant data to machine when using attedance&absence operation program.

5.Modification

- Modification is classified **Register Modification** and **Use Modification**, and modification particulars are changed according to upper machine setup.
- Dividing operations into sections is done by voice message and buzzer sound when modify. If a key is not inputted for 10 sec. when modify, current mode is auto canceled and terminated.
- Refer 5.3 for menu modification sequence.

5.1 Register Modification

①Entering Setup Mode

: If click "Return" button while pushing "Enter" button, it requests master authentication and if master authentication is successful, it enters setup mode.

② Register Master

: Select "Master Register/Delelte" at setup mode, enter "Register" section, and complete register by reading master card.
But, if authentication type is card+fingerprint, master must use fingerprint for authentication method..

※ Master can be registered for 2 person, and machine remains master register standby status when initial delivery.

③ Master Delete

: Select "Master Register/Delelte" at setup mode, enter "Delete" section, and delete by reading master card or inputting resident number.

④ Setup Authentication Type

: Select "Authentication Type Setup" at Setup mode, select "Smart Card & Fingerprint" mode or "Smart Card" mode.

※ User who have difficulties for inputting fingerprint at smart card & fingerprint mode can use password instead of fingerprint.

- ⑤ Register User Card/Fingerprint
- : Select "User Register/Delete" at Setup mode, and register as follows according to authentication type setup in terminal.
- ※ Examples by authentication type
- Smart Card + Fingerprint : For normal issued cards, register by reading card.
 - For cards which are not registered fingerprint or password, or temporary cards, register by inputting fingerprint or password after reading card.
 - For not having card, register by inputting fingerprint after input ID by using keypad.
 - Smart Card : Register by reading card.
- ※ User who cannot input fingerprint when inputting fingerprint register by inputting password. But, for register by inputting keypad only you must input fingerprint.
- ⑥ User Delete
- Select "User Register/Delete"→"Delete" at setup mode, and delete by reading user card or inputting resident number.
- ※ For all user deletion, Select "Setup Mode"→"User Register/Delete"→"All Delete". But, master is not deleted.
- ⑦ Date/Time Setup
- Select "Card Reader Management"→"Date/Time Change", and register date/time by selecting "Direct Input" or "Download"
- ※ If select upper machine download, setup date/time automatically by downloading date/time information from upper machine.
- But, only direct input available for SBMS connection.
- ⑧ Setup Card Reader Number
- Select "Card Reader Management"→"Setup Card Reader"→"Card Reader Number", and setup by inputting card reader number.
- ※ 01~99 for TCP/IP(Attendace&Absence System), 01~04 for SBMS.
- ⑨ Setup Network
- Select "Card Reader Management"→"Setup Card Reader"→"Setup Network", and setup by selecting "SBMS Connection" for SBMS Connection or "TCP/IP Connection" for operating system connection.
- "IP Address", "GateWay", "SubNetmask", "Port" is inputted for "TCP/IP" setup.

- ⑩ Setup Attendance&Absence Time(Not used when SBMS Connection)
Select "Card Reader Management"→"Setup Card Reader"→"Setup Function"→
"Setup Attendance&Absence Time"→"Automatical Time Conversion" at Setup
mode, and setup by inputting "normal attendance time", "normal leaving time",
"saturday attendance time", and "saturday leaving time" and Attendance,
Leaving mode is automatically changed when using.
If select "Not using conversion", change attendance, leaving mode by using
button.
- ⑪ Setup Force Open(Not used when SBMS Connection)
Select "Card Reader Management"→"Setup Card Reader"→"Setup Function"→
"Setup Force Open" at setup mode, and setup by selecting "Setup" or
"Cancel". If select "Setup", can setup force open time and a door is opened
for relevant time.
- ⑫ Setup Force Close(Not used when SBMS Connection)
Select "Card Reader Management"→"Setup Card Reader"→"Setup Function"→
"Setup Force Close" at setup mode, and setup by selecting "Setup" or
"Cancel". If select "Setup", can setup force close time and access is denied
except for masters.
- ※Force Open/Force Close Time have priority over Attendance&Absence
Time. Force Close time has priority over Force Open Time.
- ⑬ Setup Card Reader Buzzer & Voice
Select "Card Reader Management"→"Setup Card Reader"→"Setup Function"→
"Setup Buzzer & Voice" at setup mode, and setup by selecting "ON" or "OFF".
- ON : Can hear buzzer sound when input key or operation.
 - OFF : Can not hear buzzer sound when input key or operation.
- ⑭ Setup door open time (Not used when using SBMS connection)
Select "Card Reader Management"→"Setup Card Reader"→"Setup Function"→
"Setup door open time" at setup mode, and setup by selecting open time. If
door open time is setup, door is opened for limited setup time when
access.
- ⑮ Setup Security Level
Select "Card Reader Management"→"Setup Card Reader"→"Setup Function"→
"Setup Security Level" at setup mode, and setup by selecting wanted security
level. (Security Level:1~7)
- ⑯ Setup access permission (Not used when using SBMS connection)
Select "Card Reader Management"→"Setup Card Reader"→"Setup Access
Permission" at Setup mode, and setup by selecting "Total access" or "Local
access".
- Total access : Determine access by searching user from terminal and
server.
 - Local access : Determine access by searching user from terminal only

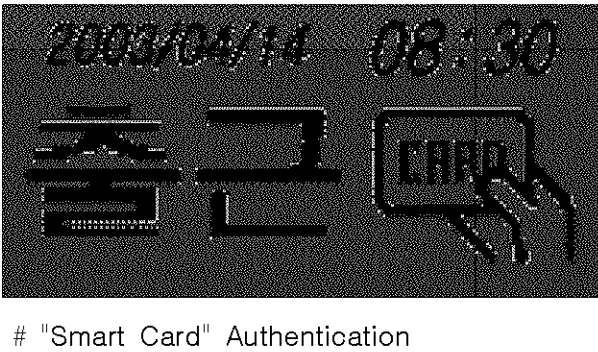
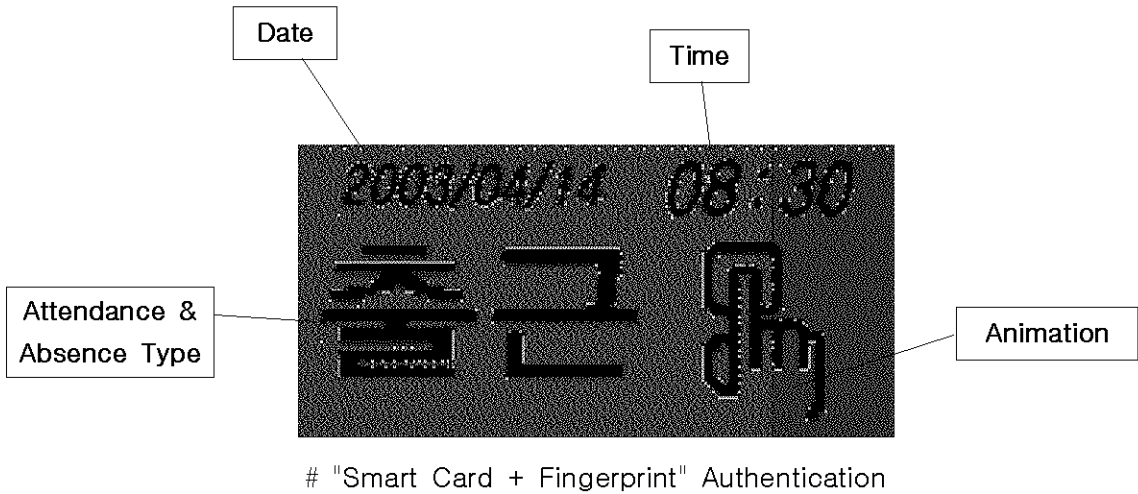
- ⑰ Initialize Event (Not used when using SBMS connection)
Initialize by selecting "Initialize"→"Initialize Event" at Setup mode.
- ⑱ Initialize Setup (Not used when using SBMS connection)
Initialize by selecting "Initialize"→"Initialize Setup" at Setup mode.
- ⑲ Rebooting (Not used when using SBMS connection)
Initialize by selecting "Initialize"→"Rebooting" at Setup mode.
- ⑳ DB Copy
Copy terminal's DB to another terminal using cable.

5.2 Use Modification

- ① Use access fingerprint & card
Push Attendance, Leaving, Airing, or Return button and access by modifying card+fingerprint, card+password, ID+fingerprint or card only according to authentication type when not using attendance&absence conversion.
According to authentication type, access by modifying card+fingerprint, card+password, ID+fingerprint or card only without button modification. (But, Modify button when return.)
- ② Use Inquiry Function(Not used when SBMS Connection)
: Enter Inquiry mode by pushing "Enter"+"Aring" Button.
- ③ Inquiry Attendance&Absence Time(Not used when SBMS Connection)
Can inquiry "Normal Attendance Time", "Normal Leaving Time", "Saturday Attendance Time", "Saturday Leaving Time", "Automatic Conversion" by selecting "Attendance&Absence Time" at inquiry mode.
- ④ Inquiry Door open time(Not used when SBMS Connection)
Can inquiry door open time by selecting "Door Open Time" at inquiry mode.
- ⑤ Inquiry Force Open/Close Time(Not used when SBMS Connection)
Can inquiry force open/close time and setup status by selecting "Force Open/Force Close" at inquiry mode.
- ⑥ Inquiry Authentication Type(Not used when SBMS Connection)
Can inquiry authentication type by selecting "Authentication Type" at inquiry mode.
- ⑦ Modify Set/Cancel (Not used when SBMS Connection)
Can set and cancel by inputting fingerprint or password after reading card with pushing Enter button. (For crime prevention card only, modify card with pushing Enter button.)

5.3 Main Menu Structure & Modification Specification

5.3.1 LCD Display Specification



< Attendance & Absence Program(TCP/IP) Connection >



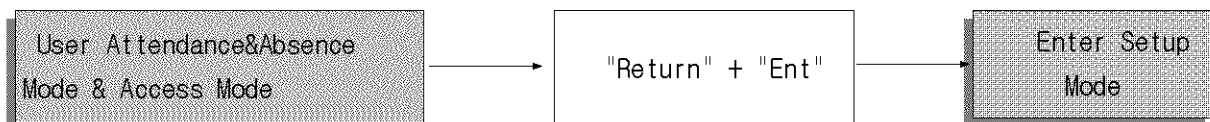
5.3.2 Main Menu Structure

* Button (TCP/IP & SBMS)

- Esc
: Key Pad Input : Clear(Back Space) Function
: Push 1 time at menu (to Previous menu), Push for 2 sec.(to Access mode)
- Enter
: Data input confirmation except for menu selection and SET/CANCEL when using SBMS connection

1. Enter Setup mode

"Return" + "Enter" at Attendance&Absence mode & Access mode for entering setup menu.

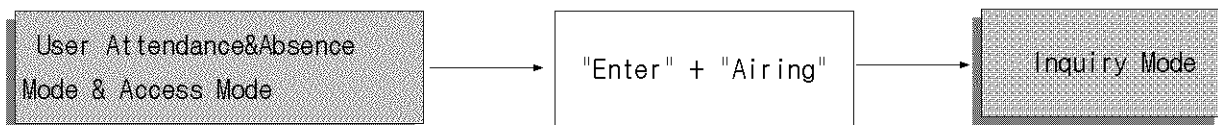


- Attendance & Absence Reader setup at delivery(TCP/IP connection)
- Setup menu & Sub-menu is differ when entering setup mode according to Attendance & Absence Reader(TCP-IP) / Access Reader(SBMS) Connection

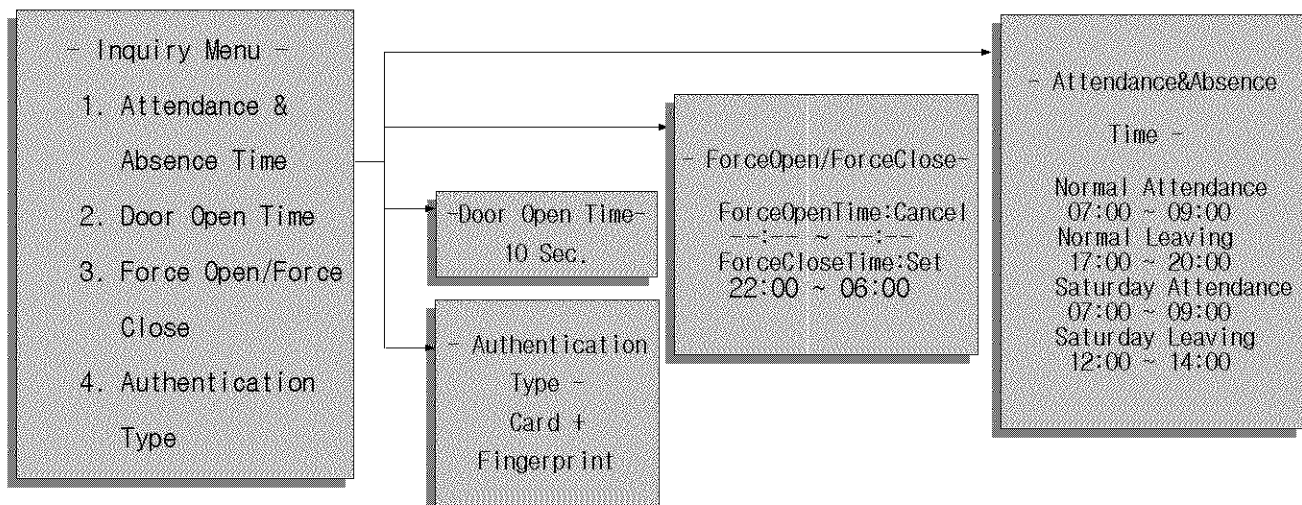
2. Entering Inquiry Mode

TCP/IP

"Enter" + "Airing" at Attendance&Absence mode & Access mode for entering Inquiry menu.



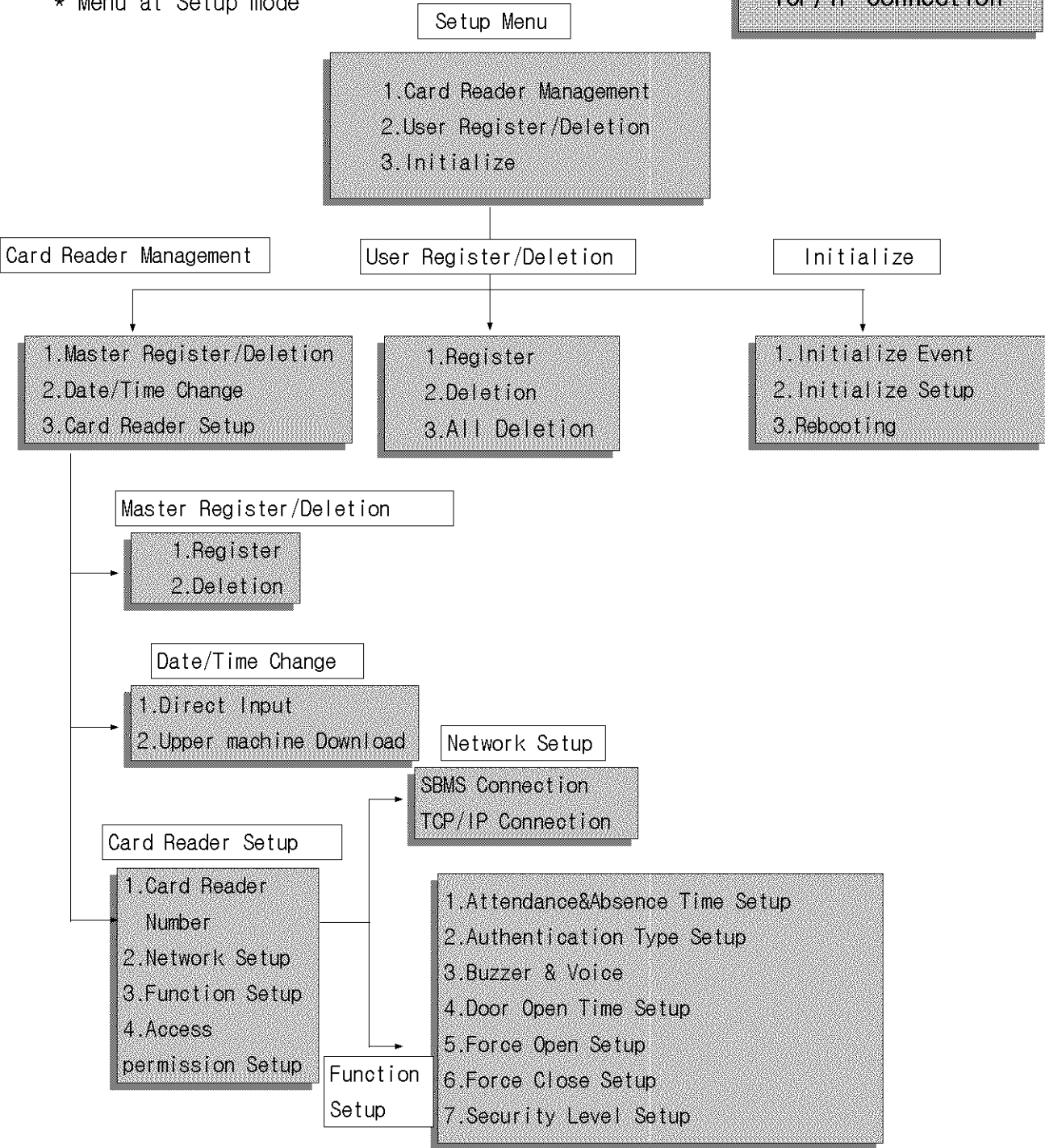
- Contents at Inquiry Mode.



- Attendance&Absence System Menu For Smart Card -

* Menu at Setup mode

- TCP/IP Connection -



* Menu at Setup Mode

