



# Data Management Server 2 (MIM-D00A)



- **Built-in web server for PC-independent management and remote access control**
- **Multiple upper-layer control access (S-NET 3, S-NET Mini, Web-client)**
- **Weekly/Daily schedule control**
- **Power distribution function**
- **Current time management even during power failure (for 24 hours)**
- **Emergency stop function with simple contact interface**
- **Individual/Group control of up to 256 indoor units and ERV, AHU**
- **User editable control logic**
- **Accessible level management.**
- **Dynamic security management**
- **Operation & error history management**
- **Data storage in non-volatile memory & SD memory**

Size		240 * 255 * 64.8 mm (Width * Length * Depth)
Power supply	Source	DC Adaptor
	Input	100~240VAC (±10%), 50/60Hz
	Output	12V 3A
Operating humidity range		0%RH ~ 90%RH
Storage temperature range		-20 °C ~ 70 °C
Communication connection		Lower layer : RS485 (to centralized controllers) Upper layer : Ethernet 100Base-T (S-NET3, S-NET mini, Web Browser)
Max. communication length		Lower layer : Maximum 1000m (RS485) Upper layer : 100m (for one segment without repeaters)
Max. number of interface		Lower layer : 16 centralized controllers, 80 interface modules Upper layer : Unlimited

## 1. Easy Control & Monitoring

- Individual/Group control of up to 256 indoor units including ERV,AHU
- Operation mode, temperature setting, airflow direction and fan speed.
- Restriction on use of wireless/wired remote controllers.
- ODU/IDU cycle monitoring

## 2. Web Server Function

- Remote control with the public IP address
- No management software required – PC-independent management

## 3. Schedule Control Function

- Up to 256 schedule settings
- Weekly and daily schedule setting
- Wireless/wired remote controller restriction setting



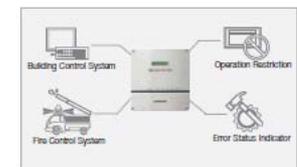
## 4. Power Distribution System

- Power distribution to 256 indoor units.
- Remote data query in -1day units
- File save in Microsoft Excel format.
- Power distribution data storage for one year in 1-day units.



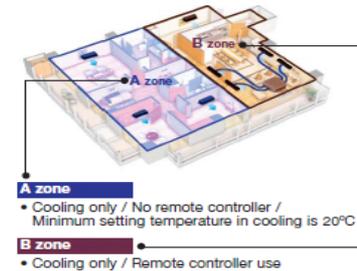
## 5. External Contact Interface

- Full indoor unit control with simple contact input (Emergency/Lock)
- State output (Operation/Error) for synchronous control



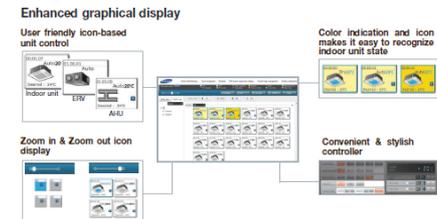
## 6. Smart Central Management

- Control & monitoring zone edition
- Wireless/wired remote control restriction
- Temperature limit setting
- Operation mode restriction



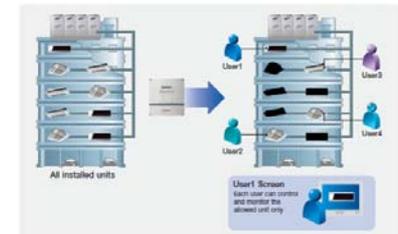
## 7. Enhanced graphical display

- User friendly icon-based unit control
- Zoom in & Zoom out icon display
- Color indication and icon makes it easy to recognize indoor unit state
- Convenient & stylish controller



## 8. Accessible level / Dynamic user security Management

- Specify the scope of control and monitoring unit on a per-user
- 3 accessible level -Admin/Manager/User

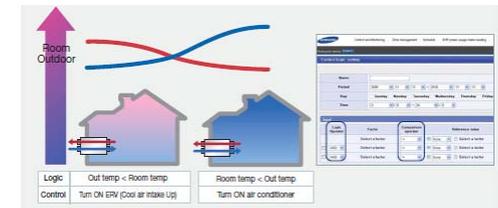


## 9. User editable control logic

- User can edit control logic with arithmetic/conditional operators and parameters
- Efficient energy saving realization for various operation conditions
- EHP/ERV/AHU parameters + AND/OR + Arithmetic equation Function

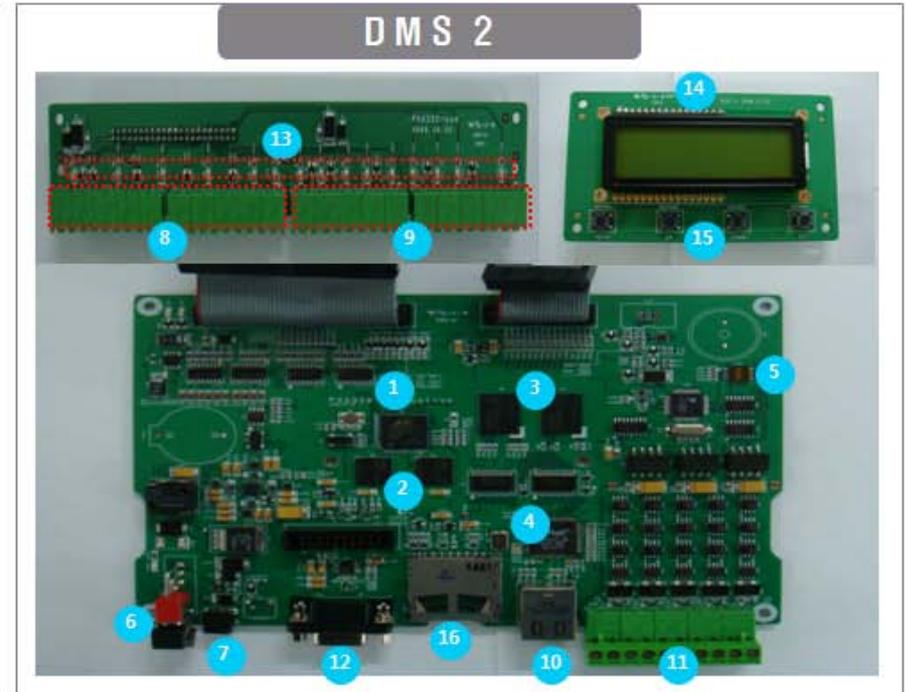
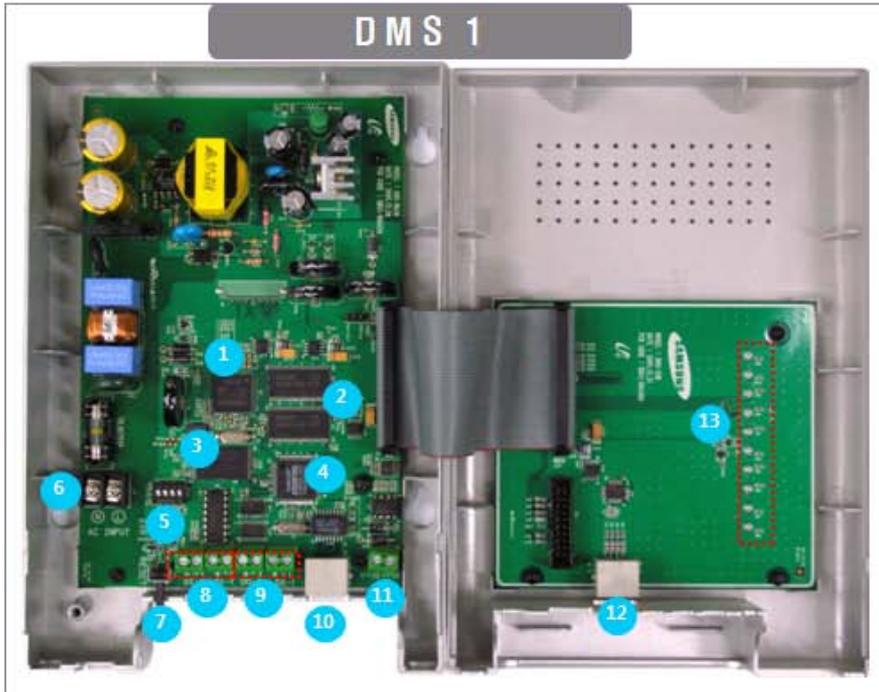
## 10. Powerful data backup/Useful history management

- Important data is safely stored in SD memory card
- Record the operation history and error history



	DMS1	DMS2
Exterior view		
Size (mm)	130(L) x 135(H) x 60(D)	240(L) x 255(H) x 64.8(D)
No. of units	256 units (EHP + ERV + AHU)	256 units (EHP + ERV + AHU)
Lower interface	On/Off controllers only	Both on/off controllers and interface modules
prerequisite	Java Runtime Environment	Silverlight
Main function	<ul style="list-style-type: none"> <li>- Control/Monitoring</li> <li>- Schedule setting</li> <li>- Power distribution</li> </ul>	<ul style="list-style-type: none"> <li>- Control/Monitoring</li> <li>- Power distribution</li> <li>- Logic programming</li> <li>- Schedule setting</li> <li>- Zone control</li> <li>- Security level</li> </ul>
Input/Output	<ul style="list-style-type: none"> <li>- RS485 Port : 1ch</li> <li>- DI, DO Port : 2ch / 2ch</li> <li>- Ethernet port : 1ch</li> </ul>	<ul style="list-style-type: none"> <li>- RS485 Port : 5ch</li> <li>- DI, DO Port : 10ch / 10ch</li> <li>- Ethernet port : 1ch</li> </ul>
Others		<ul style="list-style-type: none"> <li>- Fast access speed (approx. 4 times faster)</li> <li>- Data &amp; configuration backup to SD memory</li> <li>- Dynamic zoom in/out</li> <li>- Indoor/Outdoor unit cycle data display</li> <li>- Dynamic IP support (IP display on LCD)</li> </ul>

# Comparison of DMS1 & DMS2

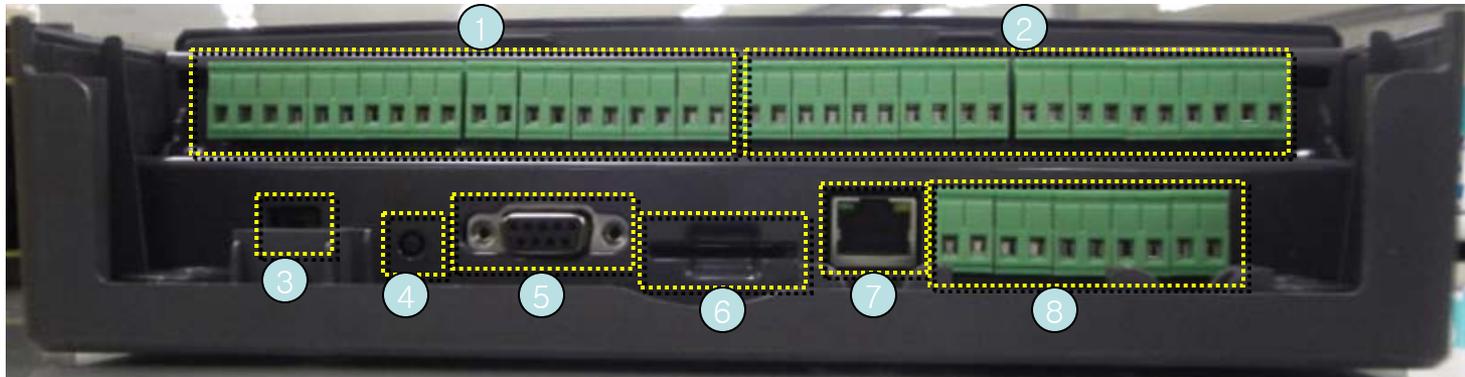


- 1 Main CPU
- 2 SDRAM
- 3 NAND Flash
- 4 Ethernet Chip
- 5 Option Switch
- 6 Power Connector

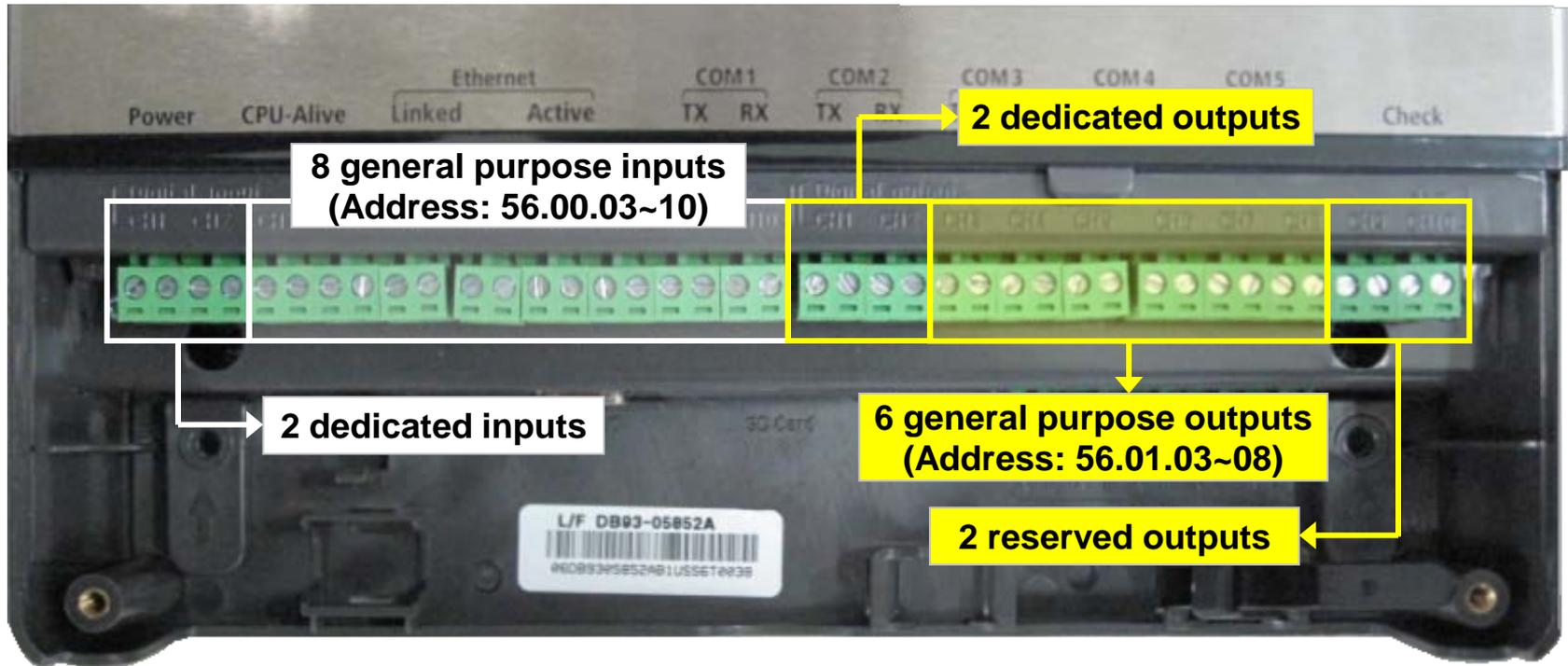
- 7 Reset Button
- 8 Digital Input
- 9 Digital Output
- 10 Ethernet Connector
- 11 485 communication Connector
- 12 Serial Port

- 13 LED Display
- 14 LCD Display
- 15 LCD Control Button
- 16 SD Card Port

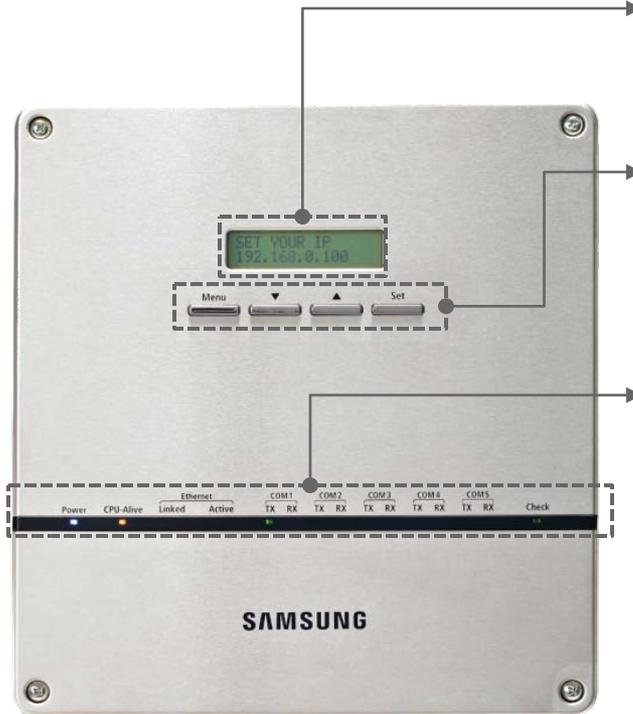




No	Name	Description
1	Digital Input	All indoor unit operation and wired/wireless remote controller use are controlled according to the option switch setting.
2	Digital Output	DC signal voltage is output in case of error in more than one indoor unit and outdoor unit. Output voltage : 12VDC, 500mA
3	Power	Power supply to DMS. 12VDC/3.0A (adapter)
4	Reset button	Press the reset button to restart DMS.
5	Debugging terminal	Used for system debugging of DMS operation, configuration and data management.
6	SD card slot	SD card slot for data storage and updating software
7	LAN port	LAN connection with upper-layer devices.
8	RS485 port	RS485 connection with centralized controllers (polarized)



- Interface with external control system
- 2 dedicated voltage-free inputs (Emergency control and others)
- 8 voltage-free contact inputs for general purposes (Open/short contact input)
- 2 dedicated voltage-free outputs (Operation/Error)
- 6 12-voltage outputs for external interlocking systems
- 2 reserved outputs for later use
- Inputs and outputs have each fixed address
  - Digital input address: 56.00.03~56.00.10
  - Digital output address: 56.01.03~56.01.08



## LCD Display

- Usually display the IP address and current time
- Display the menu name when the button is input

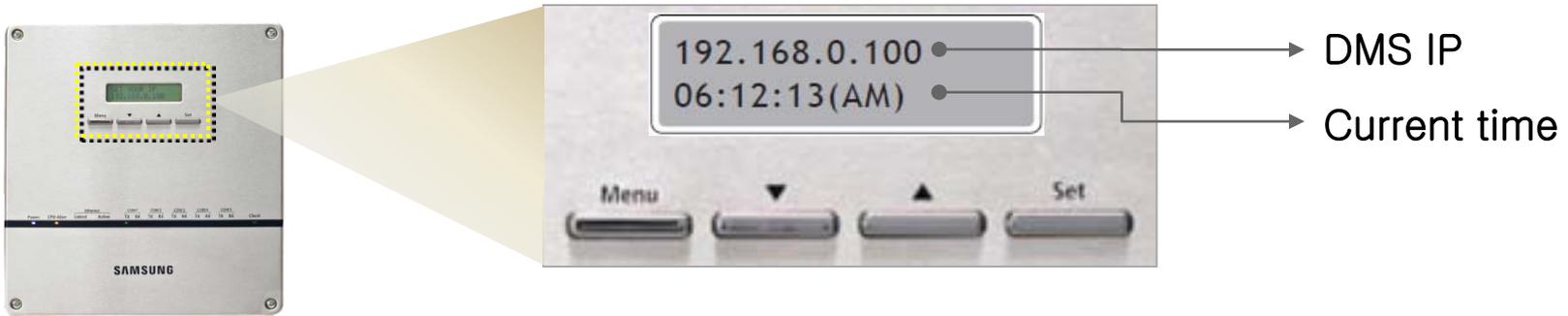
## LCD menu input button

- 4 button: Menu, ▼(down), ▲(up), Set
- Menu entering/ moving/ setting



## LED Display

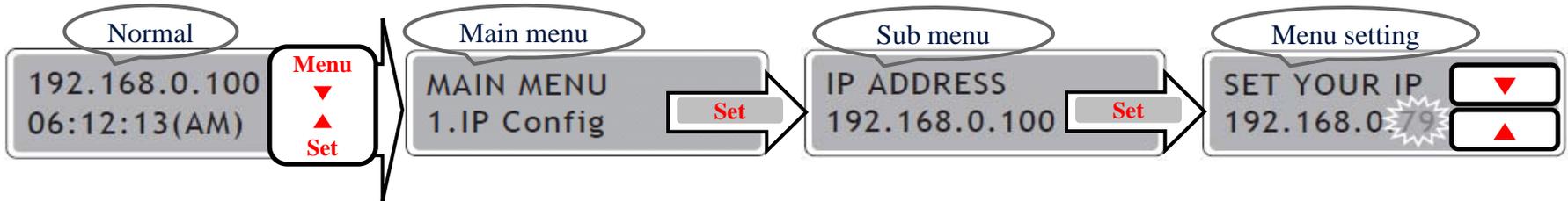
Name	Color	Description
Power	Blue	Power LED is ON when power input is applied normally.
CPU Alive	Orange	CPU Alive starts to flicker every second in normal state.
Ethernet Linked	Green	Linked LED is ON in normal LAN connection
Ethernet Active	Orange	It flickers whenever LAN communication is activated between DMS and upper-layer devices
COM1~COM5 TX	Green	It flickers when data request is sent from the DMS to lower-layer devices through RS485 communication
COM1~COM5 RX	Green	It flickers when DMS receives data from the lower-layer devices through RS485 communication.
Check	Green	It lights on when there is an error on more than one indoor/outdoor unit or in communication..



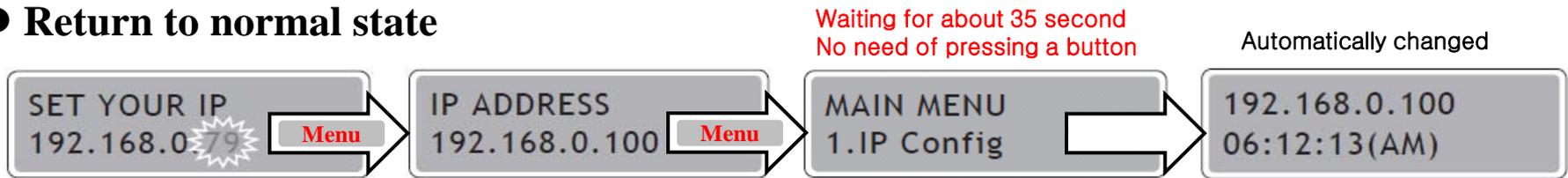
Button	Description
LCD display	<ul style="list-style-type: none"> <li>▪ Normal state: IP / Current time is displayed</li> <li>▪ Menu setting status</li> </ul>
Menu 	<ul style="list-style-type: none"> <li>▪ Selection the main menu</li> <li>▪ Cancel the menu setting</li> </ul>
 	<ul style="list-style-type: none"> <li>▪ Searching the menu</li> <li>▪ changing the menu setting</li> </ul>
 	<ul style="list-style-type: none"> <li>▪ Searching the menu</li> <li>▪ changing the menu setting</li> </ul>
Set 	<ul style="list-style-type: none"> <li>▪ Entering the sub menu</li> <li>▪ Saving the menu setting</li> </ul>

	Main Menu	Sub menu	View	Setting	Description
1	<b>IP Config</b>	IP ADDRESS	O	O	IP Setting
		NETMASK ADDRESS	O	O	Subnet mask setting
		GATEWAY ADDRESS	O	O	Gateway setting
		DNS SERVER	O	O	DNS server address setting
		DHCP CONFIG	O	O	DHCP enable/disable setting
2	<b>In/Outdoor</b>	Indoor	O	X	Indoor units quantity connected with DMS
		Outdoor	O	X	Outdoor units quantity connected with DMS
3	<b>DMS Version</b>	DMS version	O	X	DMS version
4	<b>DMS Time</b>	CURRENT DATE	O	O	DMS current date setting
		CURRENT TIME	O	O	DMS current time setting
5	<b>Data Backup</b>	data backup	X	O	Data backup with SD card
		data restore	X	O	Data restoration with SD card
6	<b>Peak Level</b>	Peak Level	O	X	Only for Korea market
		Cur Demand	O	X	
		Tar Demand	O	X	
7	<b>Error Status</b>	ERROR INFO	O	X	Error occurrence information
8	<b>Password Reset</b>	-	X	O	Reset password to factory default
9	<b>Button Lock</b>	-	O	O	Lock whole buttons
10	<b>Safety Halt</b>	-	X	O	Safety halt function

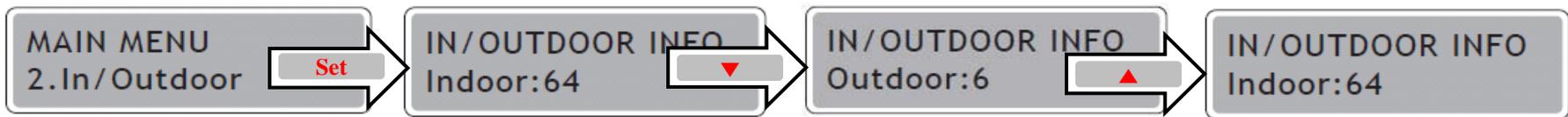
## ● Sub Menu Setting



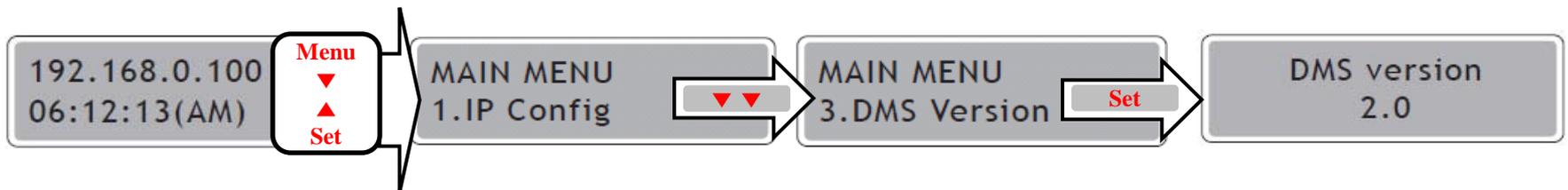
## ● Return to normal state



## ● Moving in the sub menu



## ● Moving the sub menu

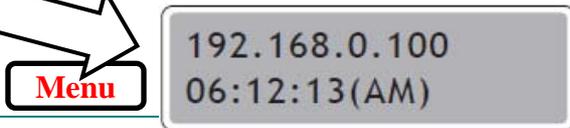
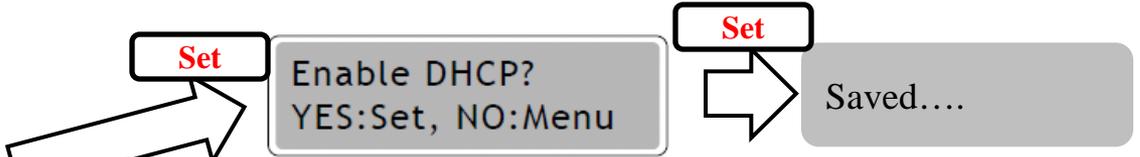
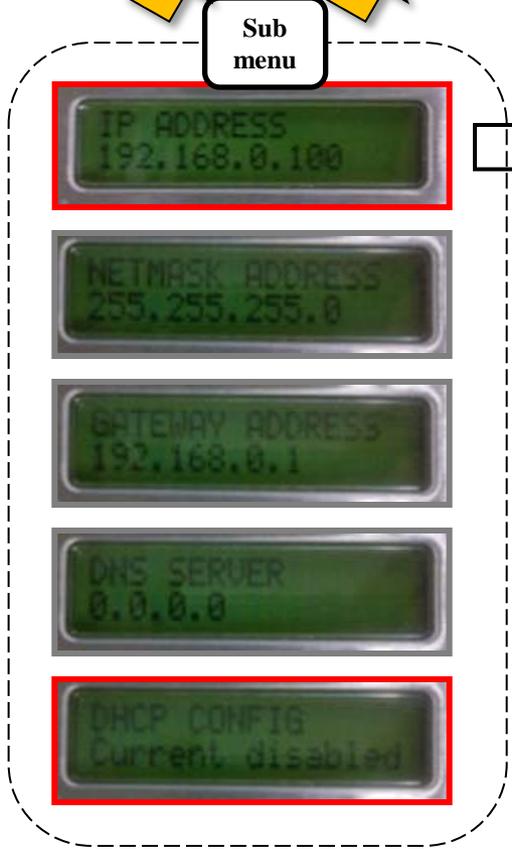


# IP setting in LCD display

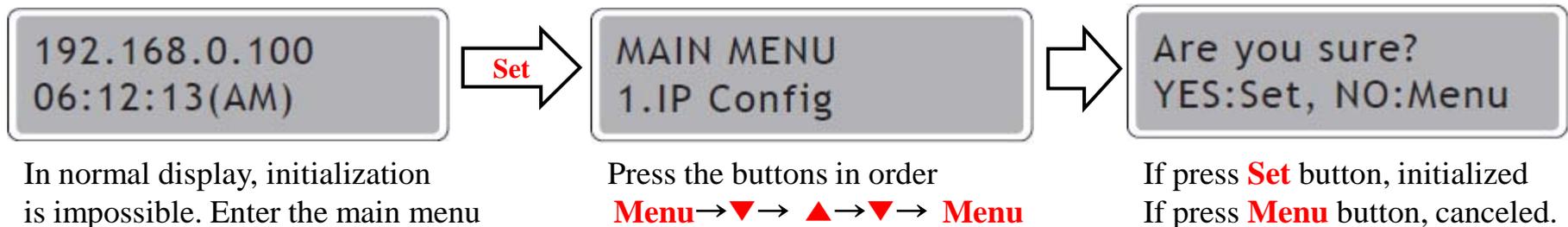


▪ If you enable DHCP, you have to check IP in LCD display because IP is automatically assigned .

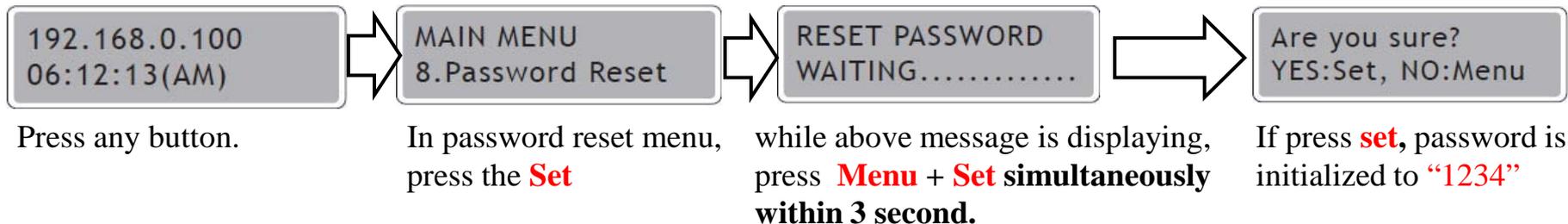
▪ If you enable DHCP and DMS2 is connected with SNET3, you have to check DMS IP in SNET3 tracking menu.



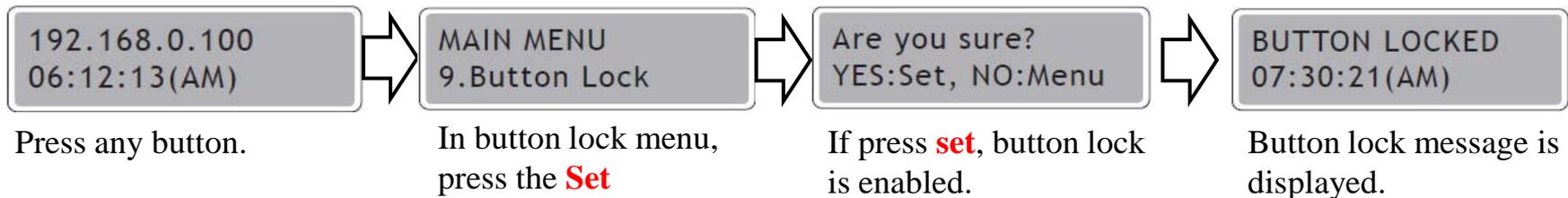
## Initialize system configuration (Caution: all data is erased)



## Initialize the password



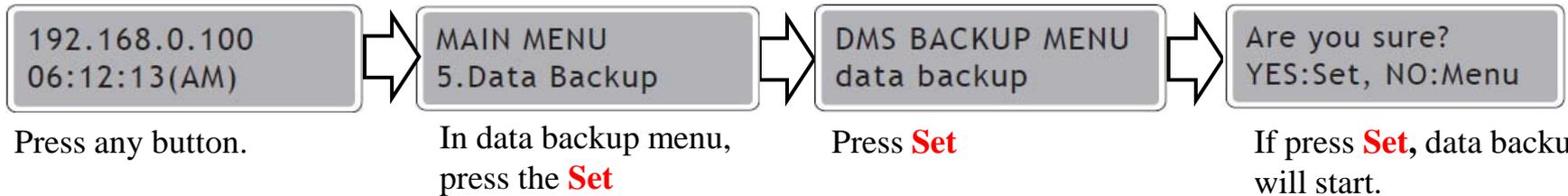
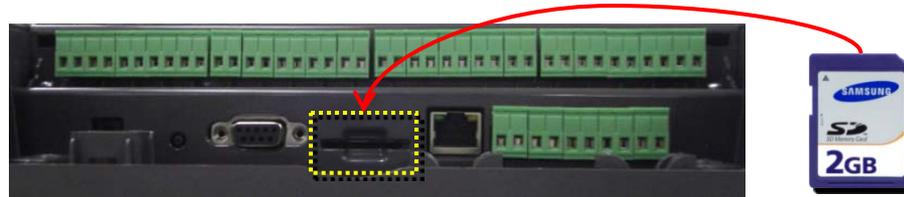
## Button lock



\* To unlock the buttons, press **Menu + Set** simultaneously for 5 second.

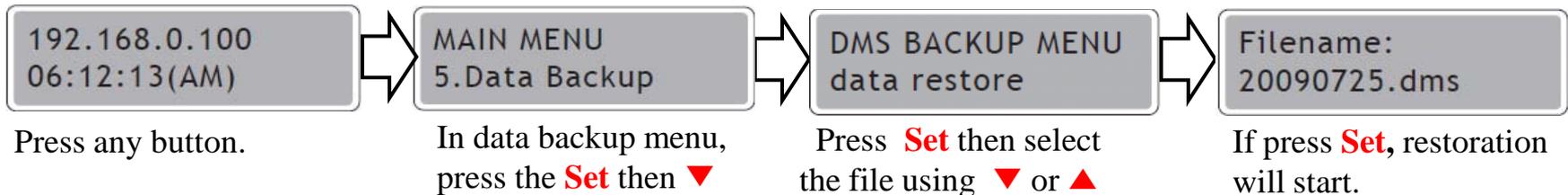
## Data backup with SD card

Firstly, insert the SD card in DMS2



## Restore the data with SD card

Firstly, insert the SD card which has backup data in DMS2





# Installation

## ■ Procedure

### 1. Wiring



- Interface module wiring
- Centralized controller wiring

### 2. Access to DMS2



- IP setting
- LAN cable connection
- Starting a web browser

### 3. Tracking



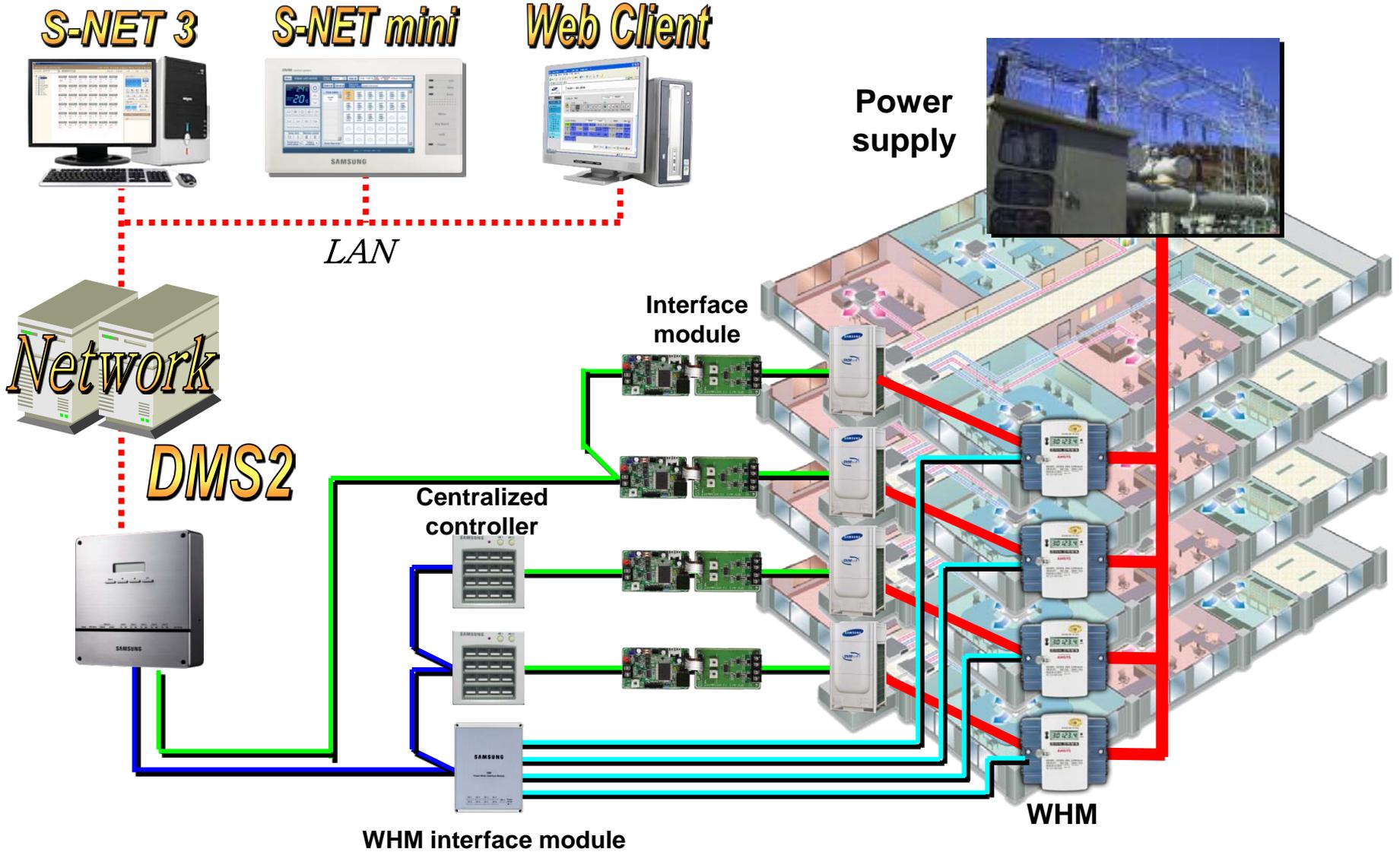
- Initialization
- Disconnection
- Tracking result

### 4. System environment setting



- Time, Language , Name
- Network information
- E-mail, contact control

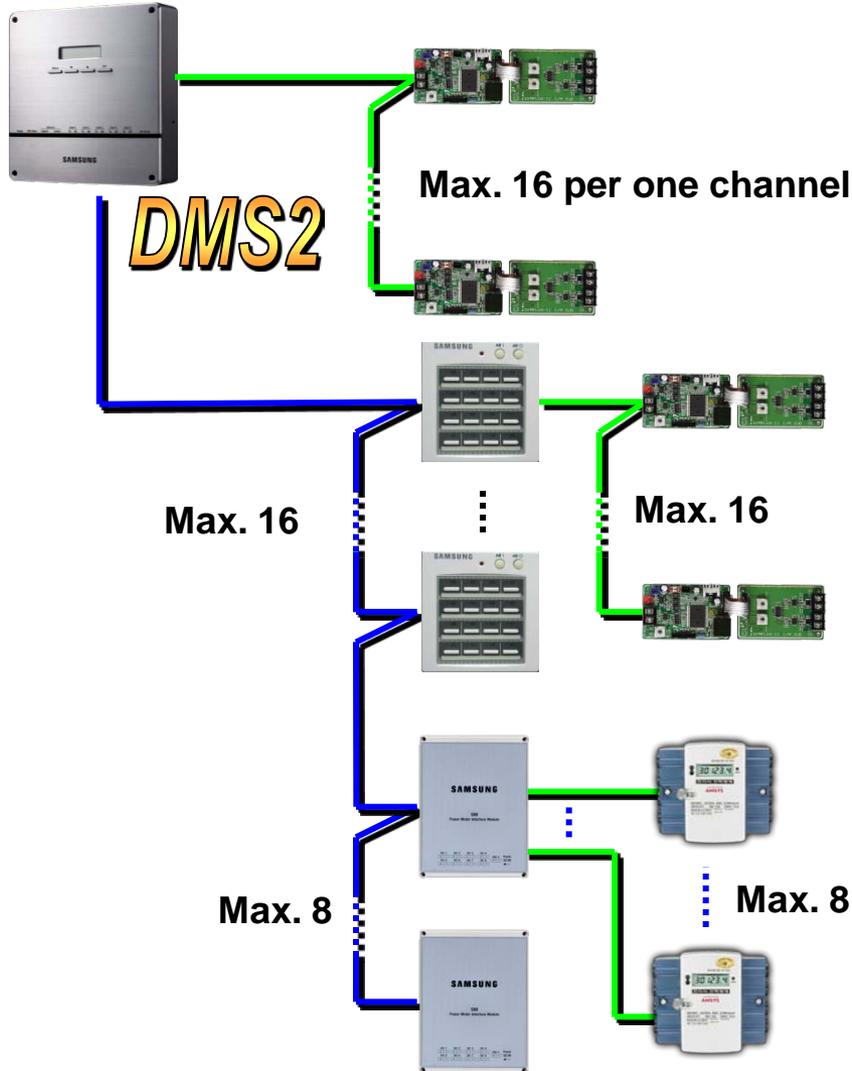
## Connection diagram



## Interface

No	Device	Model	Remark
1	Upper-layer device	MST-P3P(S-NET3) MST-S3W(S-NET mini) Web-Client	HUB or network environment is required to support multiple upper-layer devices.
2	Centralized controller	MCM-A202, MCM-A202A MCM-A202B	
3	Interface Module	MIM-B04A, MIM-B13A, MIM-B13B	
4	WHM interface module (SiM)	MIM-B12	Max. 8 watt-hour meters are supported for 1 SiM.
5	WHM interface module (New)	MIM-B16	Development schedule: July, 2010 (Pulse type power meter)
6	Power meter	Specified Korean watt-hour meter	Local watt-hour meter can be used after launching MIM-B16
7	DI/DO	No power dry contact	DI: Max.8, DO: Max.6
8	Outdoor unit	DVM Plus III, DVM Plus III HR DVM Plus II, DVM Plus II HR DVM HR, DVM Mini DVM, FJM, CAC,ERV	

**Number of interface**



- Centralized controller : Max. 16
- Interface module : Max. 80  
(16 per one channel X 5 channel)
- Indoor unit : Max. 256
- WHM interface module : Max. 8
- WHM : Max. 8 per one WHM I/M

## 485 communication connectors



### System Settings > Tracking

• Connect “Centralized controller “ or “Interface module”

DVM Tracking		Disconnect all devices	
SIM 1 EA	Central controller 1 EA	Interface module 3 EA	Indoor unit 18 EA
Communication mode by channel			
Channel 0	<input type="radio"/> Interface module <input checked="" type="radio"/> Central controller		
Channel 1	<input checked="" type="radio"/> Interface module <input type="radio"/> Central controller		
Channel 2	<input type="radio"/> Interface module <input checked="" type="radio"/> Central controller		
Channel 3	<input type="radio"/> Interface module <input checked="" type="radio"/> Central controller		
Channel 4	<input type="radio"/> Interface module <input checked="" type="radio"/> Central controller		

### 1. Interface module :

→ Max 16EA to 1 communication channel  
= Max 80 EA to 1 DMS

### 2. Centralized controller :

→ Max 16 EA to 1 DMS

## Caution

Do not connect interface module and centralized controller to same communication channel

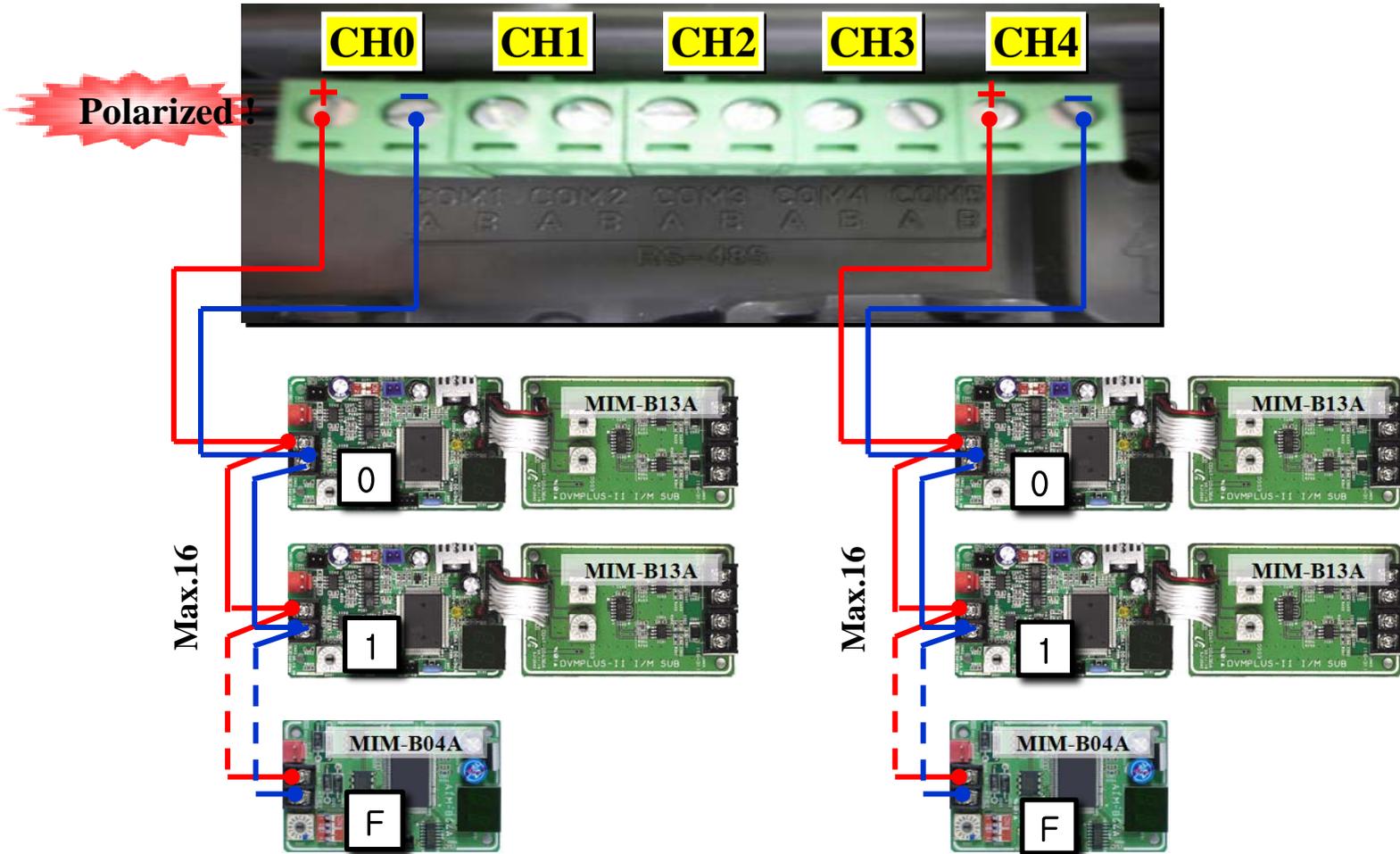
## ■ Address structure

No	Device	Address	Remark
1	Interface module	(CH0: 00~15 ) ~ (CH4: 00~15)	Max.80
2	Centralized controller	(CH0:00~15) ~ (CH4:00~15)	Max.16
3	Virtual Centralized controller	CH0:11, CH1:12, CH2:13 CH3:14, CH4: 15	Internal fixed address. Max. 5
4	WHM interface module	(8 SiM: 16~23).(8 WHM:1~8) Ex) 16.1 / 16.2 / 23.8	Internal fixed address. Max. 64.
5	Virtual WHM interface module	(Virtual: 24~31).(Virtual:1~16) Ex) 24.1 / 25.2 / 31.16	Internal fixed address Max.128
6	Digital Input	56.00.03~56.00.10	Internal fixed address Max.8
7	Digital Output	56.01.03~56.01.08	Internal fixed address Max.6

### Caution !!

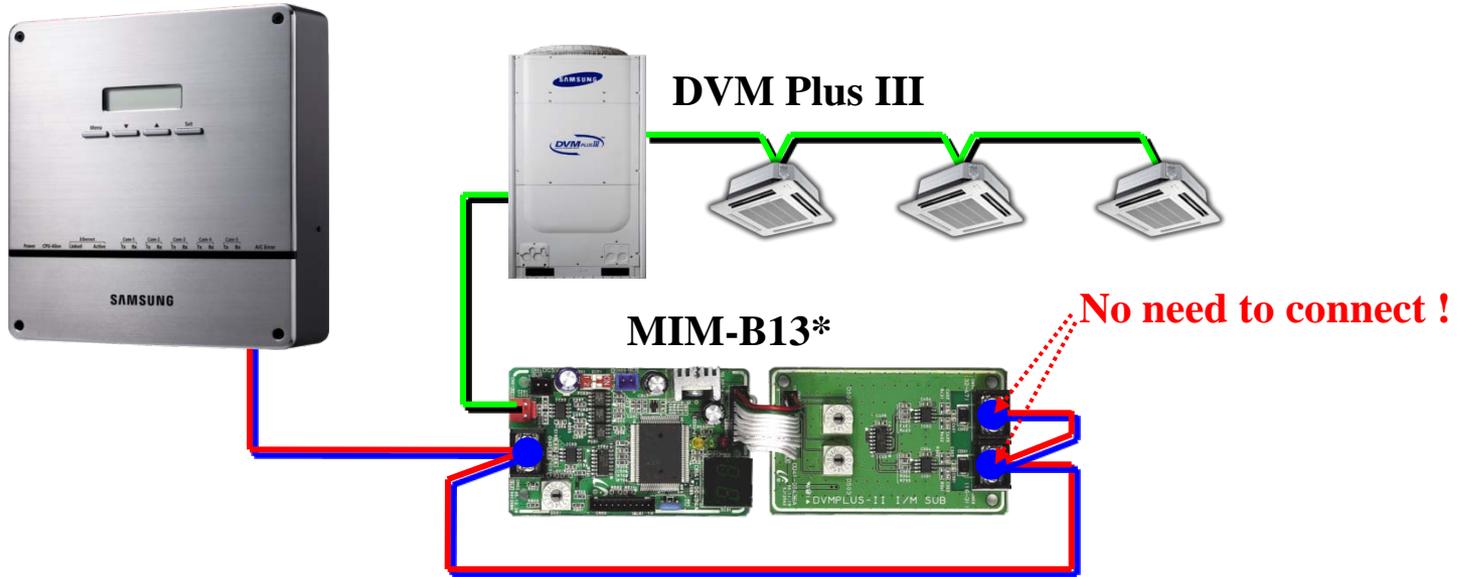
**If you install together interface module and centralized controller, maximum number of centralized controller is limit within 11 because virtual centralized controller address is assigned from 11 to 15.**

Interface module connection

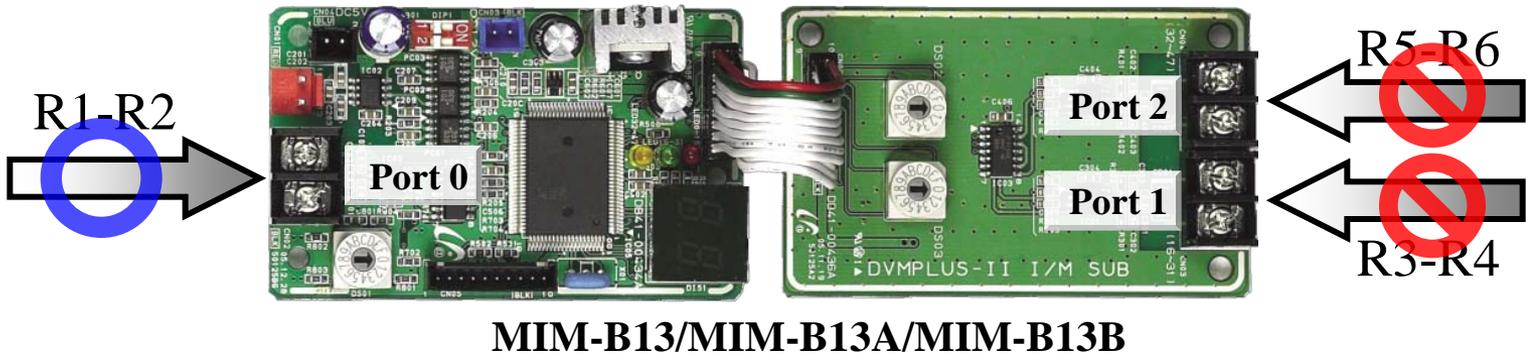


(Per one channel = Max.16) X (5 channel) = Max. 80

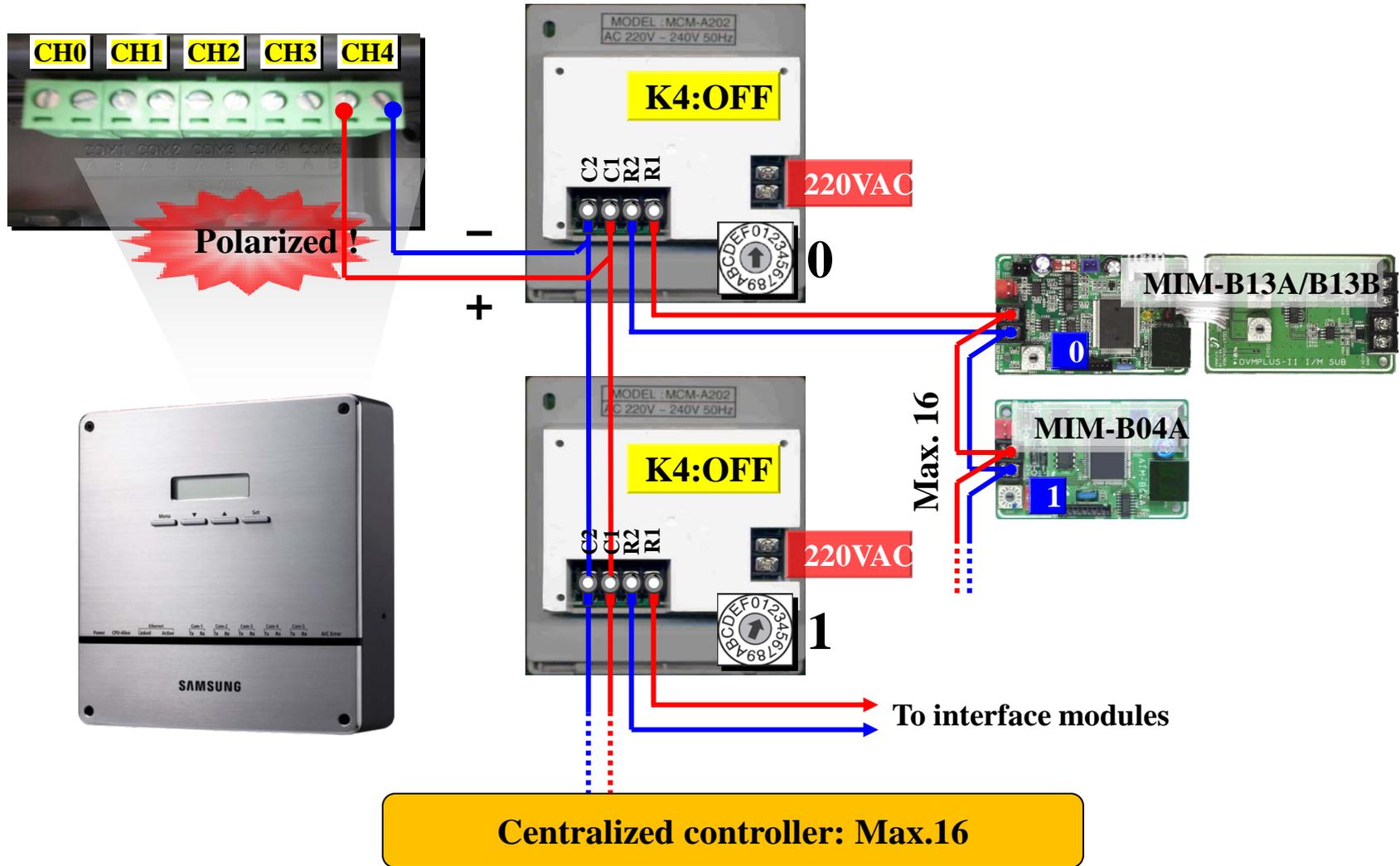
Interface module connection



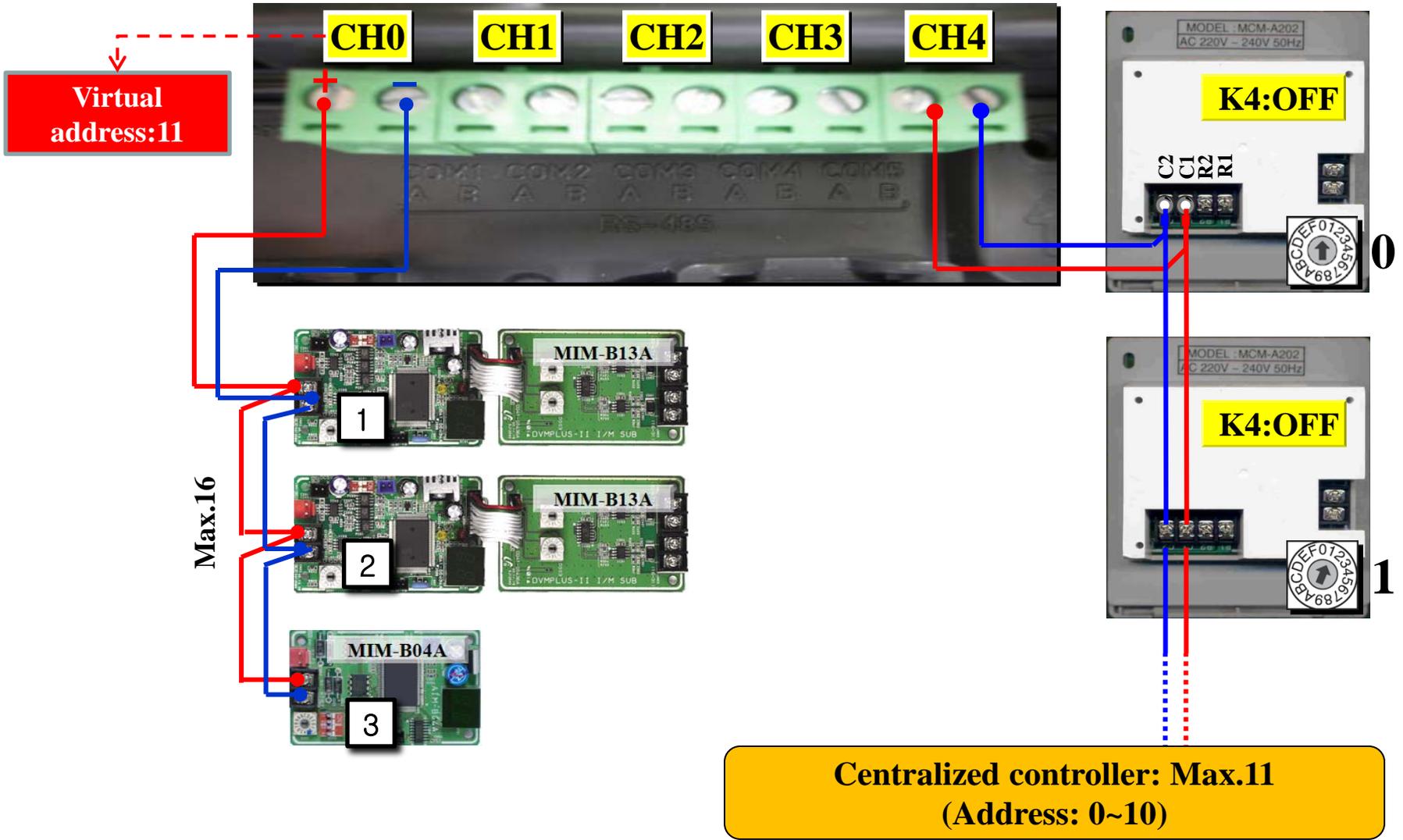
- Port connection with DMS2 – **Only Port 0 allowed !**

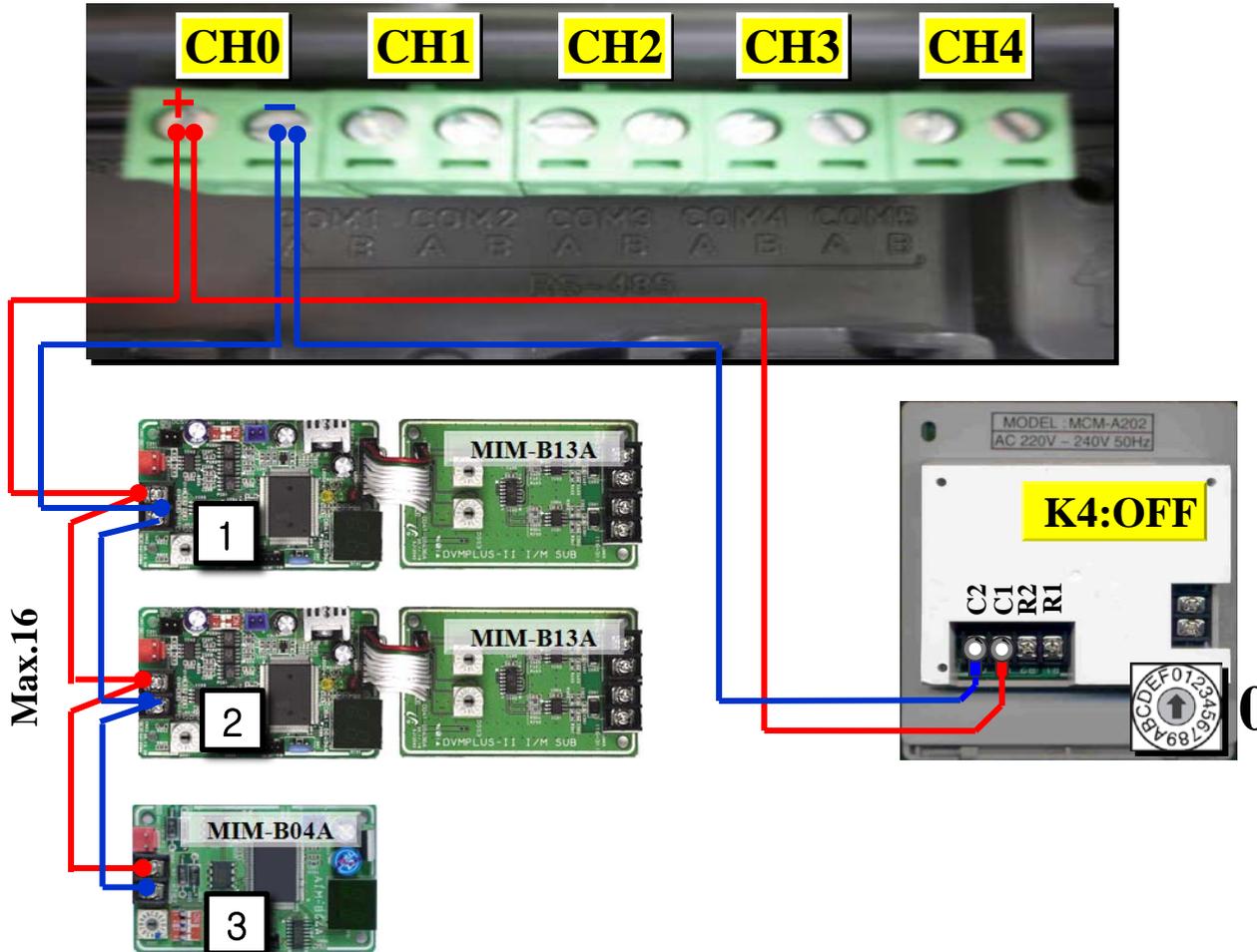


## Centralized controller connection

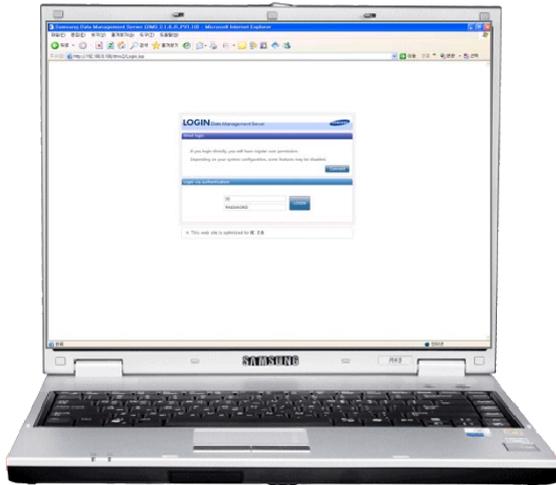


### Interface module & Centralized controller Connection





**Do not connect together interface module & centralized controller at same channel !!**



**Ethernet**



## Prerequisite

1. LAN cable
2. Internet Explorer
  - Internet Explorer 6.0 or later
3. Silverlight  
(Automatically DMS2 install this software)

	Local usage	Internet Usage
Access	Only access to connected PC	Access the internet in other site
LAN cable	Cross LAN cable	Direct LAN cable
IP setting	Private IP	Public IP
E-mail service	Non available	Available

## ❖ Public IP & Private IP

### - Public IP :

A public IP address is designated for use in a public domain, such as the Internet

### - Private IP

A private IP address is designated for use only in a private domain, such as a local area network (LAN)

## ❖ Static IP & Dynamic IP

### -Static IP:

When a computer is configured to use the same IP address each time it powers up, this is known as a Static IP address

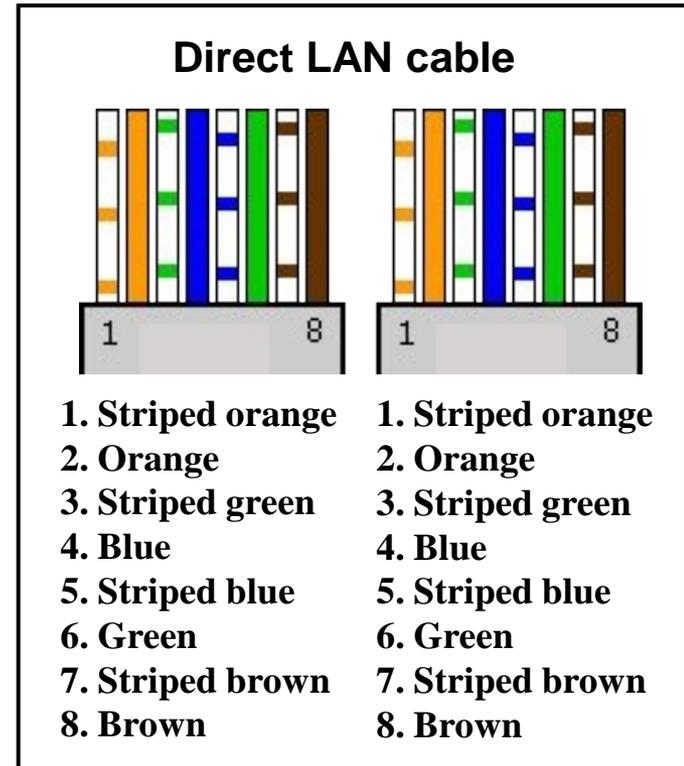
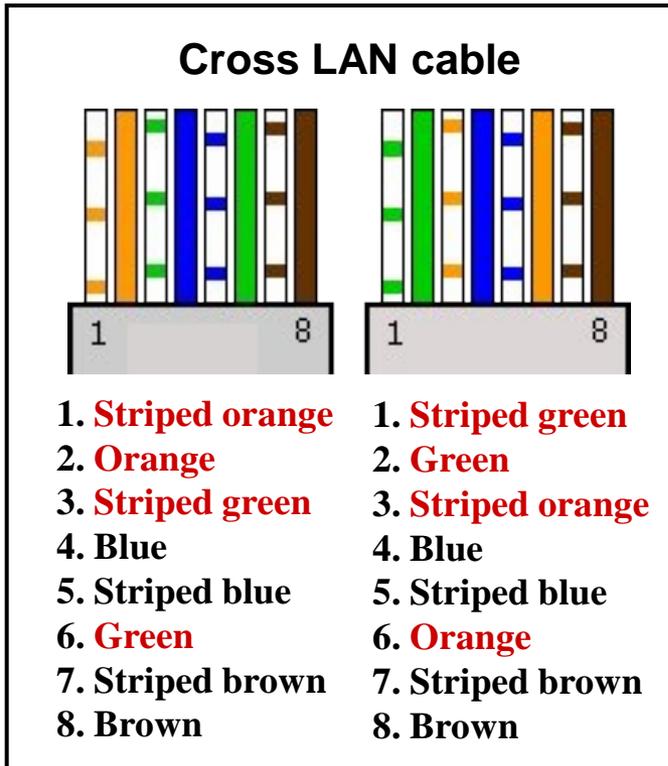
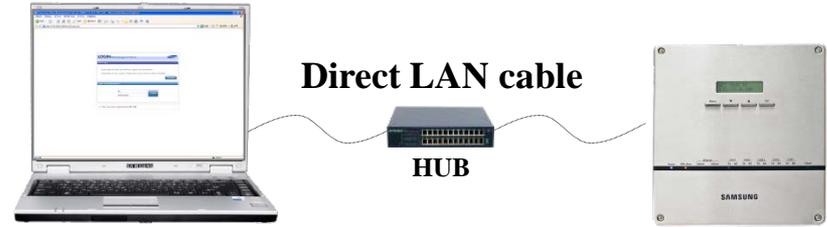
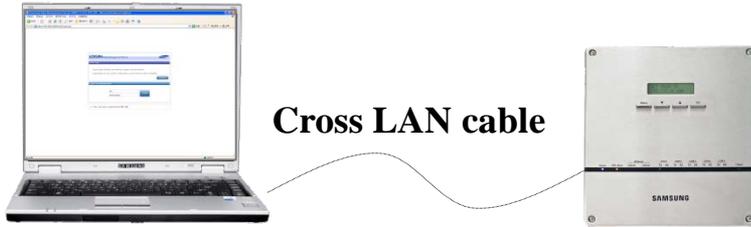
Static IP addresses are manually assigned to a computer by an administrator

### - Dynamic IP:

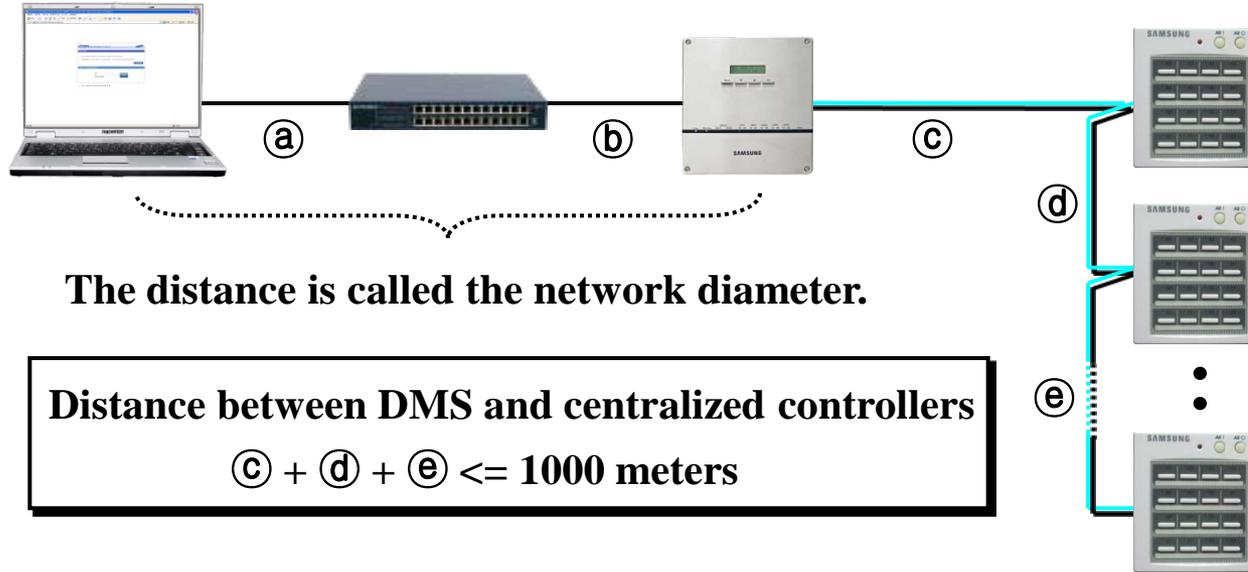
In situations when the computer's IP address is assigned automatically each time it powers up, it is known as a Dynamic IP address.

cf) DHCP (Dynamic Host Configuration Protocol)

## LAN cable



## Wiring length



The distance is called the network diameter.

Distance between DMS and centralized controllers

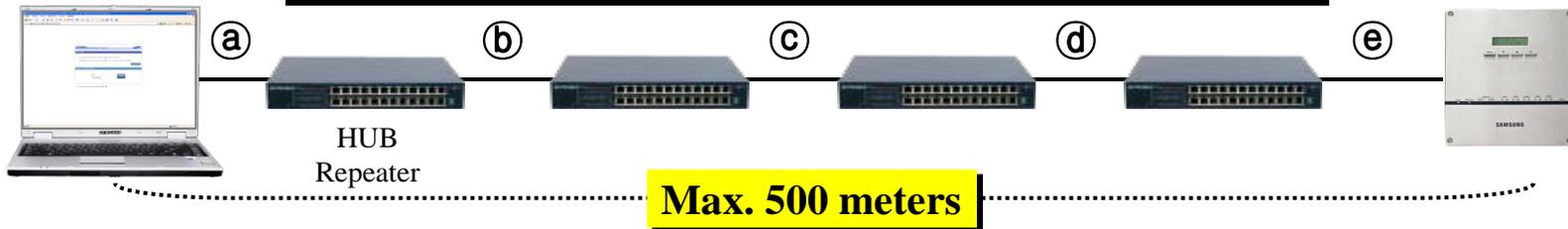
$$\textcircled{c} + \textcircled{d} + \textcircled{e} \leq 1000 \text{ meters}$$

Max. number of centralized controller = 16

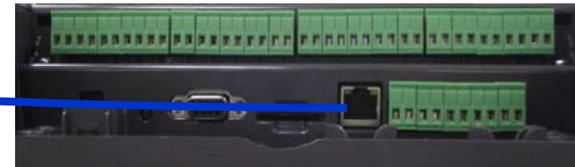
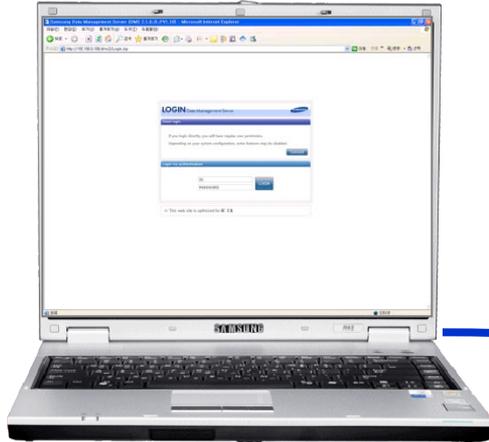
## Direct distance of DMS to the upper layer

- Direct distance of DMS2 to the upper layer : 100m (Ethernet 10Base-T, UTP cable CAT3,4,5)
- Maximum number of cascaded hub/repeaters in the network diameter : 4
- Distance of upper device to the DMS2 cannot exceed 500 meters.

Maximum length of each node  $\textcircled{a}, \textcircled{b}, \textcircled{c}, \textcircled{d}$  and  $\textcircled{e} = 100 \text{ meters}$

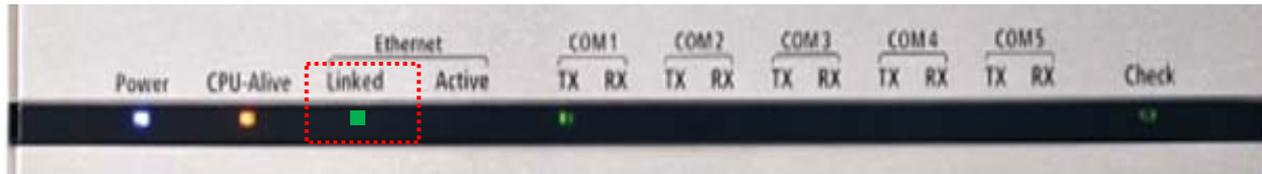


## LAN cable connection

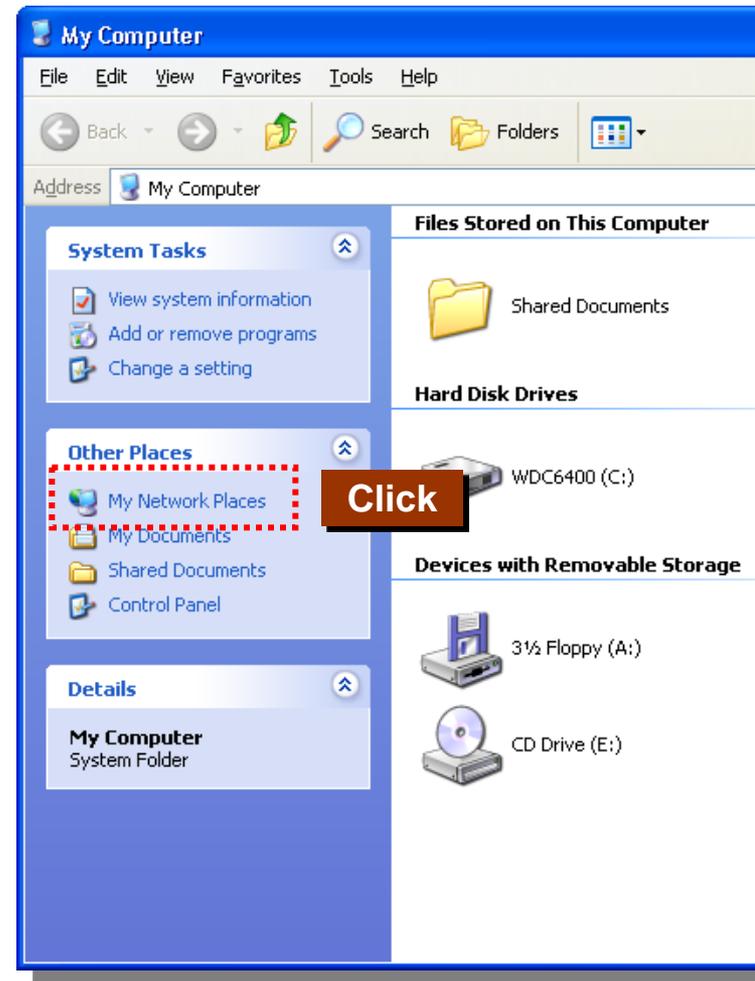
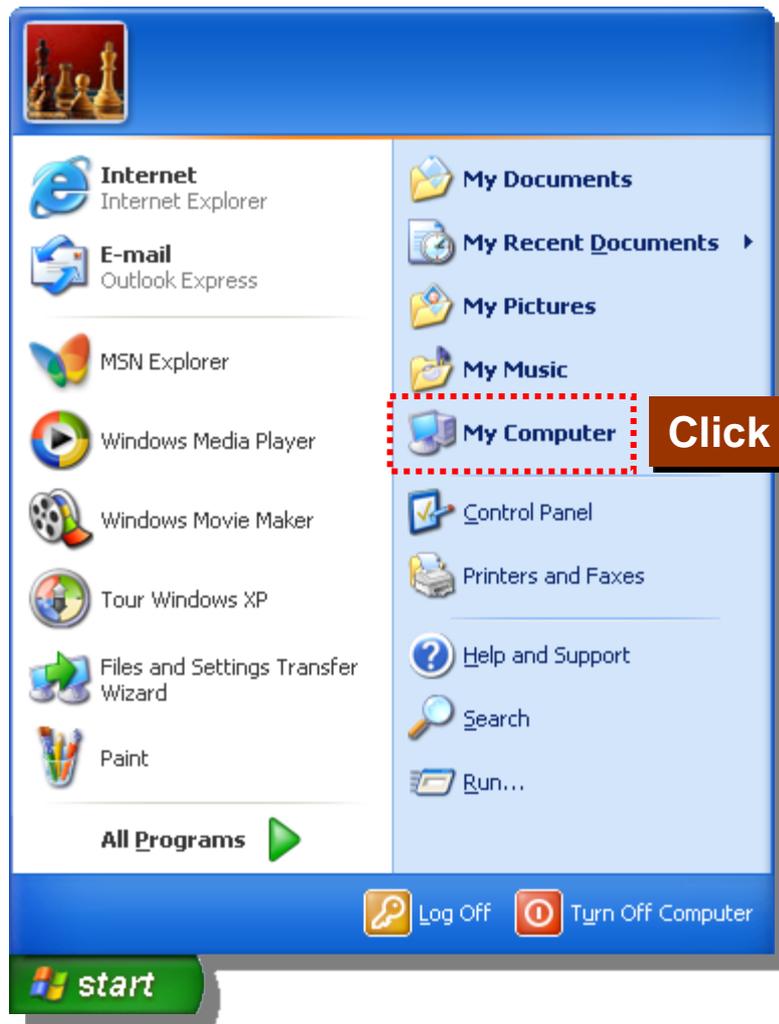


Cross LAN cable

**Linked LED is ON when LAN connections made between the DMS and the PC.**

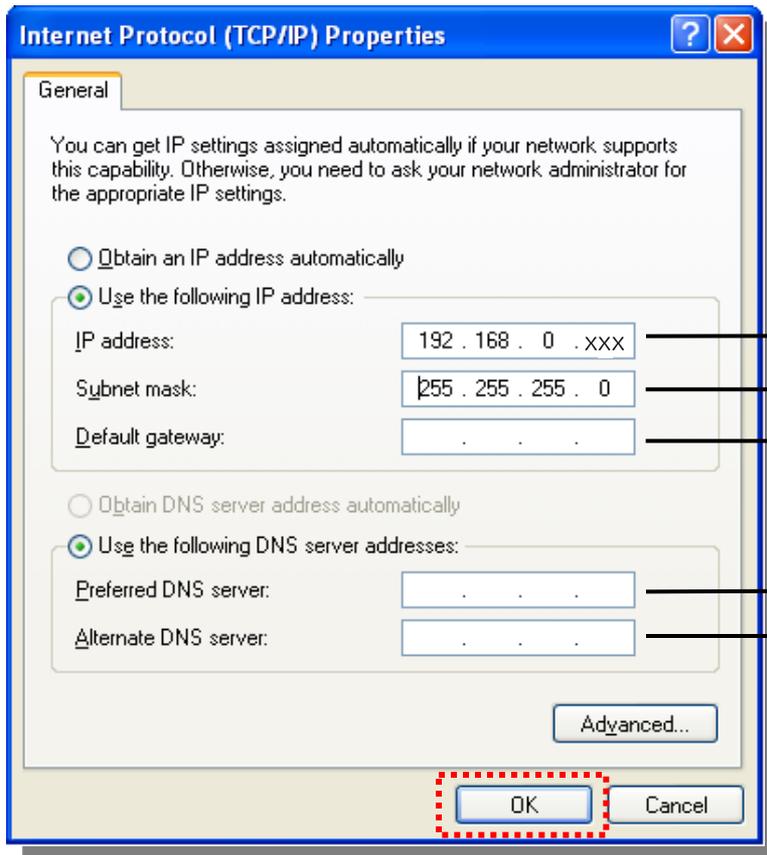


## IP setting in the PC



The screenshot shows the Windows Network Connections window. The 'Network Tasks' pane on the left lists various actions like 'Create a new connection' and 'Change settings of this connection'. The main pane shows 'LAN or High-Speed Internet' with a context menu open over the 'Local Area Connection' icon. The 'Properties' option in the menu is highlighted with a red dashed box and a 'Click' label. The 'Local Area Connection Properties' dialog box is open, showing the 'General' tab. The 'Connect using' section shows 'VMware Accelerated AMD PCNet Ad' with a 'Configure...' button. The 'This connection uses the following items:' section has several checked items, with 'Internet Protocol (TCP/IP)' highlighted by a blue selection box and a 'Click' label. Below this list are 'Install...' and 'Properties' buttons, with the 'Properties' button also highlighted by a red dashed box and a 'Click' label. The 'Description' section contains text about TCP/IP and two checkboxes: 'Show icon in notification area when connected' (unchecked) and 'Notify me when this connection has limited or no connectivity' (checked). 'OK' and 'Cancel' buttons are at the bottom.

1. Before accessing the DMS2, check network configuration of the PC.
2. Default IP of the DMS is set to 192.168.0.100.



Set to 192.168.0.xxx. xxx can be assigned to any number between 1 to 254 except 100

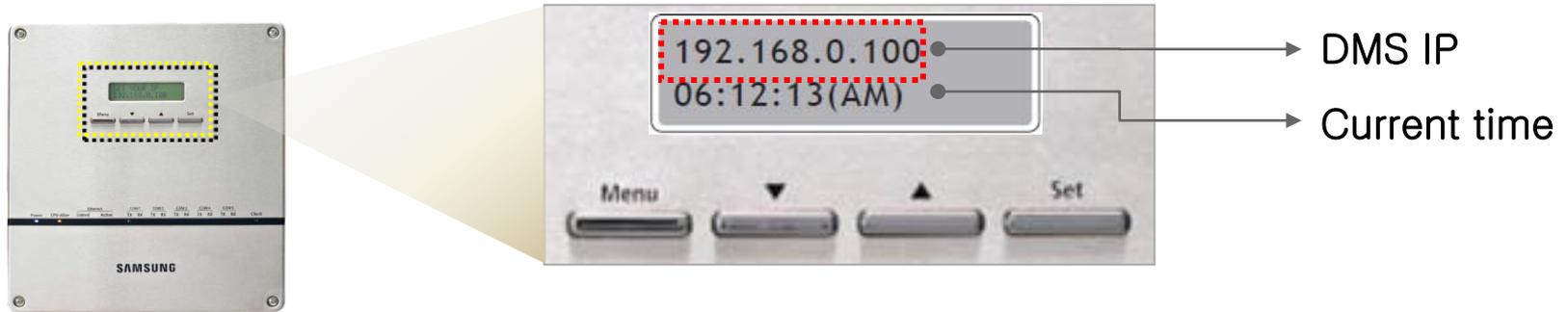
**IP collision when set to 192.168.0.100**

Set 255.255.255.0

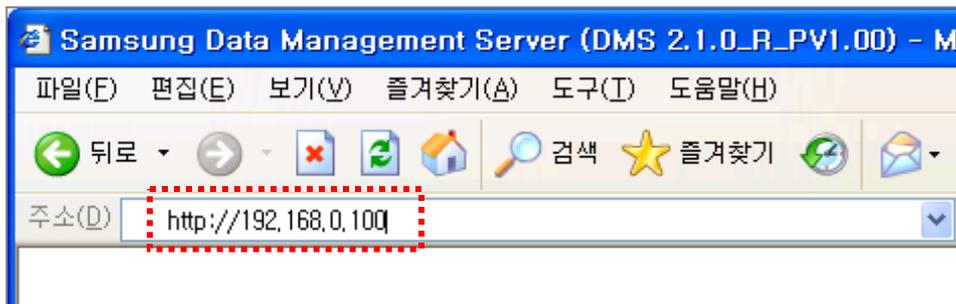
No need to set under the direct connection environment

## Internet Explore

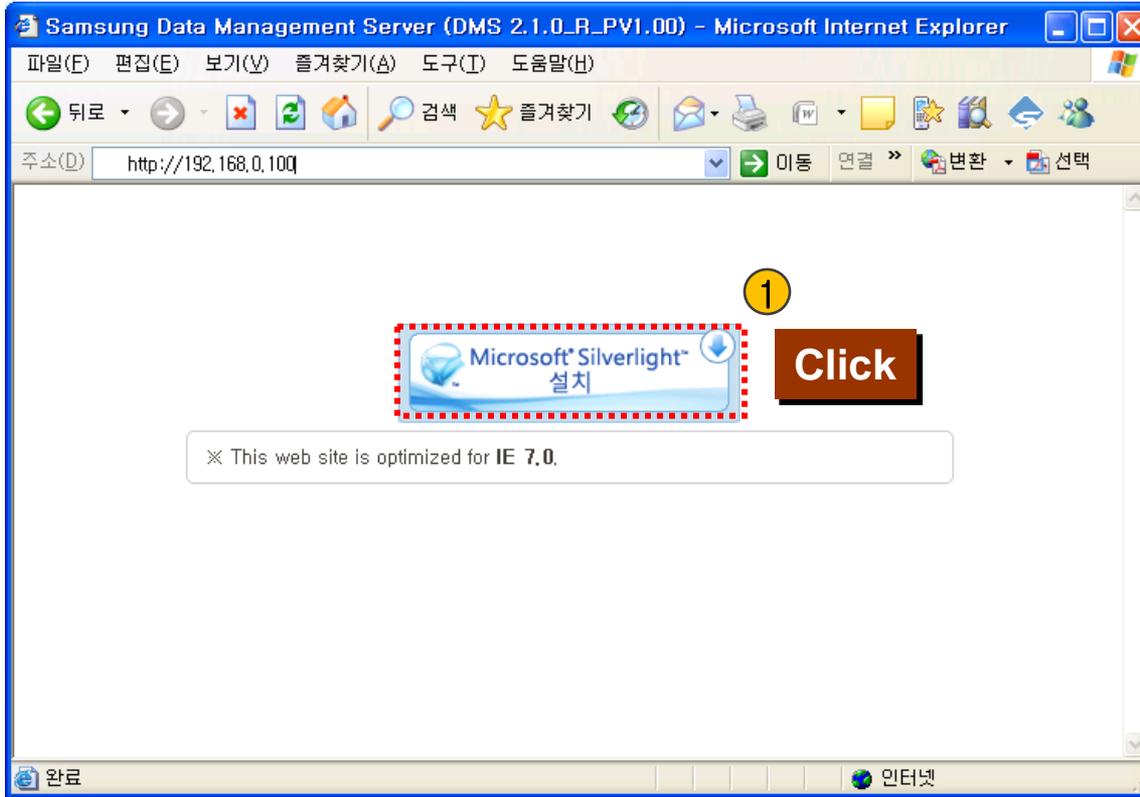
### 1. Check DMS2 current IP address from LCD panel



### 2. Open Internet explorer and type IP address to address window.



## 3. Install “Silverlight” (only first access is needed)



6 Press “F5”

## 4. Type ID and Password.

**DMS2 version**

**User level connect only control & monitoring can't use tracking menu**

**Default setting ID : admin PASS : 1234**

※ This web site is optimized for IE 7.0.

## Initial main display

The screenshot shows the Samsung Data Management Server (DMS) interface. At the top, there is a navigation bar with tabs for 'Control and Monitoring', 'Zone management', 'Schedule', 'EHP Power Consumption Inspection', 'Control logic management', and 'System Settings'. Below this, a status bar displays 'Welcome! admin, Logout' and various system indicators like 'ON RC ON', 'OFF RC Level1', 'Filter Warning Schedule', and 'Defrost Temp. Limit'. A central control area features a grid of buttons for different units, including CAUR-00 and DMS D-00. Each unit has a status indicator (e.g., 'OFF') and a control button (e.g., 'DI' or 'DO'). A 'Tracking' button is highlighted in a red box, and a 'Click' callout points to it. A dropdown menu is open over the 'Tracking' button, listing options such as 'User management', 'User authorization management', 'Data backup & restoration', 'Event history management', 'System environment', 'RMS settings', and 'Tracking'. The 'Tracking' option is selected. The interface also includes a sidebar for 'Mgt view' and 'Install view', and a bottom status bar with the URL 'javascript:pageMove('/dms2/systemsetting/SystemConfiguration.jsp')' and the '인터넷' (Internet) icon.

System Settings > Tracking

**Tracking**

DVM Tracking   Disconnect all devices

**Disconnect all devices**

**Connected device quantity**

SIM 0 EA	Central controller 0 EA	Interface module 0 EA	Indoor unit 0 EA
-------------	----------------------------	--------------------------	---------------------

Communication mode by channel

Channel 0	<input type="radio"/> Interface module <input checked="" type="radio"/> Central controller
Channel 1	<input type="radio"/> Interface module <input checked="" type="radio"/> Central controller
Channel 2	<input type="radio"/> Interface module <input checked="" type="radio"/> Central controller
Channel 3	<input type="radio"/> Interface module <input checked="" type="radio"/> Central controller
Channel 4	<input type="radio"/> Interface module <input checked="" type="radio"/> Central controller

**Select the device**

\* The communication mode of a channel where the device is connected cannot be changed.

**Channel selection**

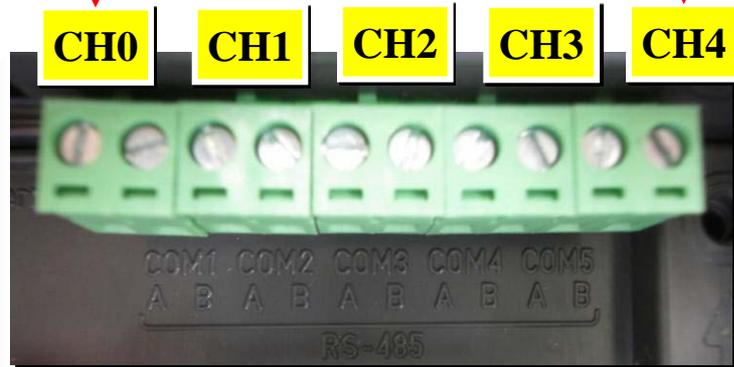
Channel	Device	Address	Name
DMS	DMS DI-DO <b>Setting</b>	56	DMS DI-DO

**Change the device type**

**DI/DO setting**

## RS 485 ports & channel selection

Communication mode by channel		
Channel 0	<input checked="" type="radio"/> Interface module	<input type="radio"/> Central controller
Channel 1	<input type="radio"/> Interface module	<input checked="" type="radio"/> Central controller
Channel 2	<input type="radio"/> Interface module	<input checked="" type="radio"/> Central controller
Channel 3	<input type="radio"/> Interface module	<input checked="" type="radio"/> Central controller
Channel 4	<input checked="" type="radio"/> Interface module	<input type="radio"/> Central controller



## Tracking sequence

SIM 0 EA	Central controller 0 EA	Interface module 0 EA	Indoor unit 0 EA
Communication mode by channel			
Channel 0	<input type="radio"/> Interface module	<input checked="" type="radio"/> Central controller	
Channel 1	<input type="radio"/> Interface module	<input checked="" type="radio"/> Central controller	
Channel 2	<input type="radio"/> Interface module	<input checked="" type="radio"/> Central controller	
Channel 3	<input type="radio"/> Interface module	<input checked="" type="radio"/> Central controller	
Channel 4	<input type="radio"/> Interface module	<input checked="" type="radio"/> Central controller	

\* The communication mode of a channel where the device is connected cannot be changed.

SIM 0 EA	Central controller 0 EA	Interface module 0 EA	Indoor unit 0 EA
Communication mode by channel			
Channel 0	<input checked="" type="radio"/> Interface module	<input type="radio"/> Central controller	
Channel 1	<input type="radio"/> Interface module	<input checked="" type="radio"/> Central controller	
Channel 2	<input type="radio"/> Interface module	<input checked="" type="radio"/> Central controller	
Channel 3	<input type="radio"/> Interface module	<input checked="" type="radio"/> Central controller	
Channel 4	<input type="radio"/> Interface module	<input checked="" type="radio"/> Central controller	

\* The communication mode of a channel where the device is connected cannot be changed.

**5 Password: 1234**

Admin password

**6 Warning message**

When tracking command is executed, the system configuration is **initialized**.

If the tracking result does not match the **actual installation information**, **serious errors** may occur in the features such as **power distribution**.

**Check** if the installation information is identical to the tracking result.

Click "Cancel" to cancel tracking, or "OK" to execute tracking.

**7 Waiting message**

Tracking is in progress.  
Please wait.

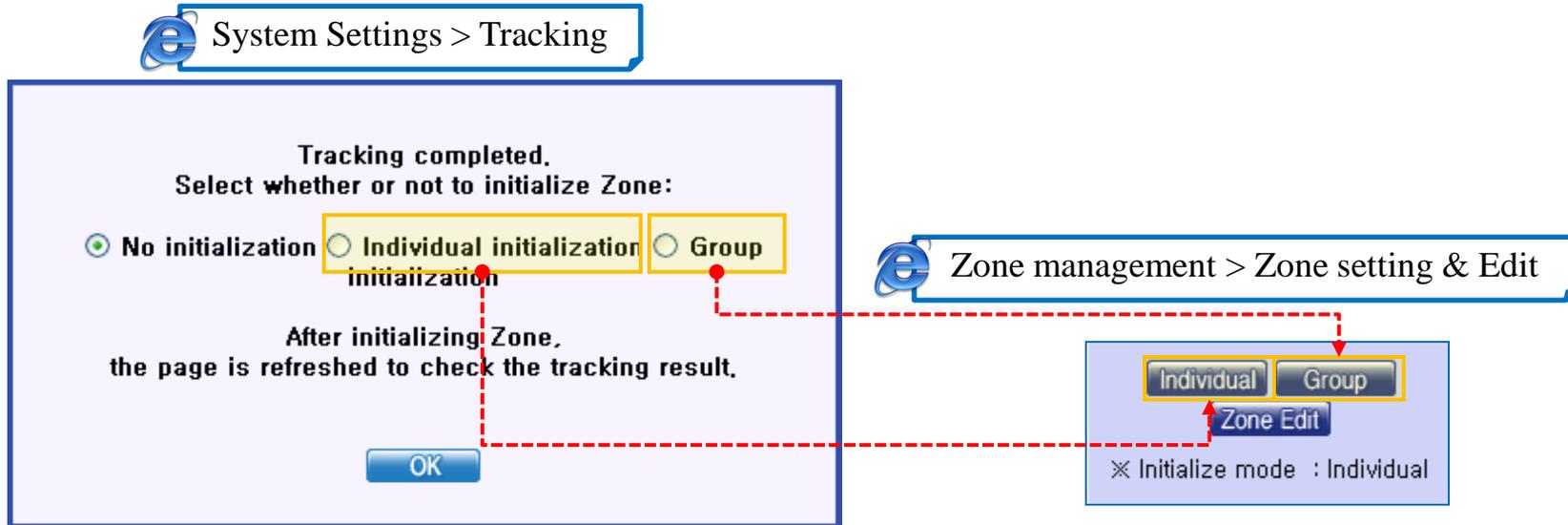
**8 Initialize zone**

Tracking completed.  
Select whether or not to initialize Zone:

No initialization
  Individual initialization
  Group initialization

After initializing Zone,  
the page is refreshed to check the tracking result.

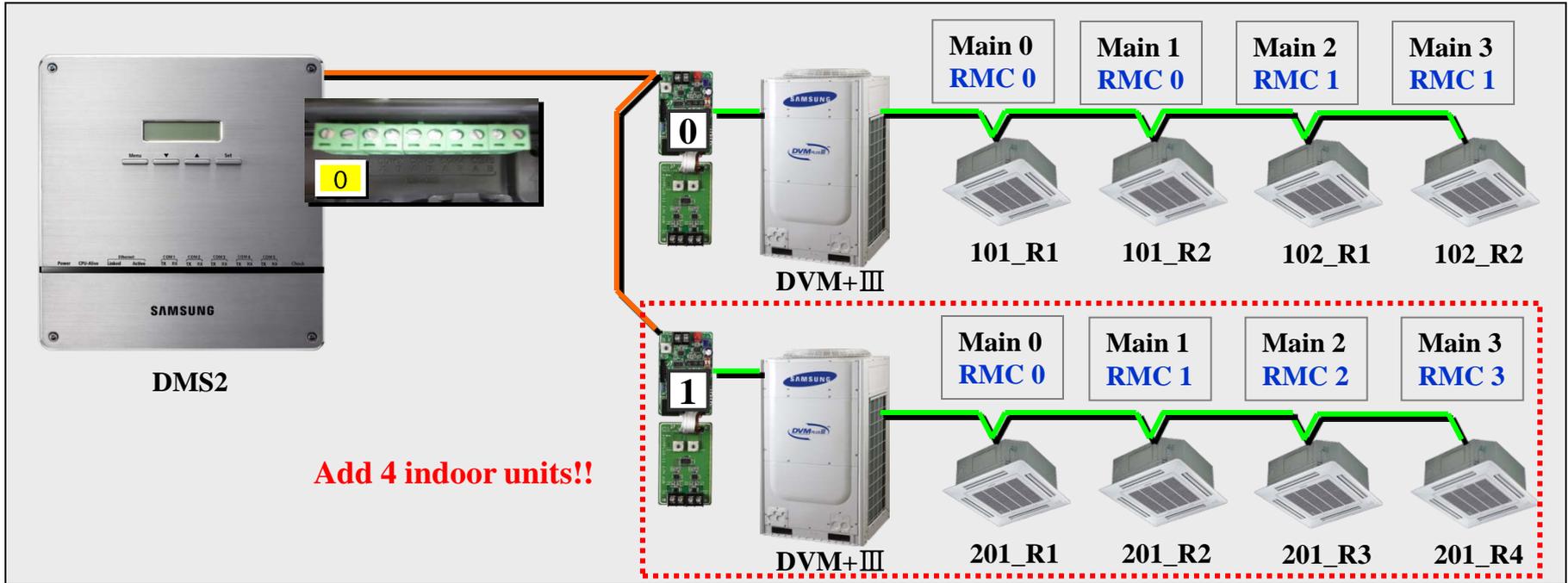
## Initialize zone



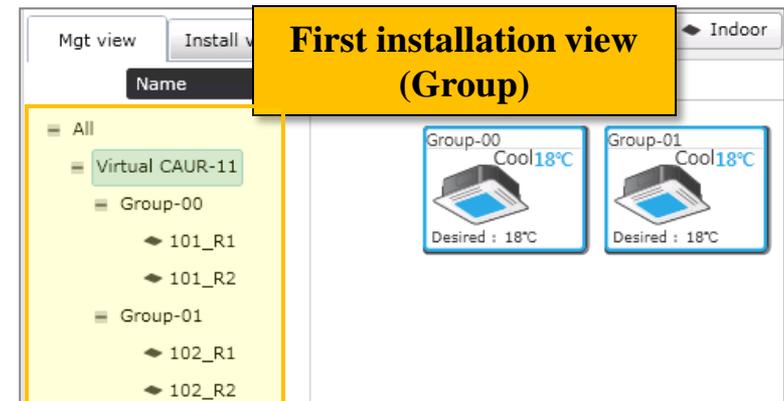
Tracking mode	Control, monitoring
No initialization	Keep last tracking mode (Individual or Group)
Individual initialization	By indoor unit Main address
Group initialization	By indoor unit RMC address

Although you didn't initialize zone in Tracking menu , you can initialize the zone again in Zone management

## Example for initializing zone



1. First installation – only 4 indoor units
2. Add 4 indoor units
3. Tracking



**No initialization**

It is initialized by group.  
 Added indoor units are displayed below DI/DO.  
 It is strange !!  
 So recommend the individual or group initialization

**Individual initialization**

Individual initialization is success !!

Name of indoor units are not initialized!!

Mgt view | Install view | Select View | **Group initialization** | ERV | AHU

Virtu.. All

Group-00 Cool18°C | Group-01 Cool18°C | Group-02 Cool18°C | Group-03 Cool18°C

Desired : 18°C | Desired : 18°C | Desired : 18°C | Desired : 18°C

DMS D.. All | 고장(0) ON(0) OFF(14) 선택(0)

- All
  - Virtual CAUR-11
    - Group-00
      - 101\_R1
      - 101\_R2
      - 201\_R1
    - Group-01
      - 102\_R1
      - 102\_R2
      - 201\_R2
    - Group-02
      - 201\_R3
    - Group-03
      - 201\_R4

**Name of indoor units are not initialized!!**  
**After tracking, indoor unit's name is not initialized in DMS2**

It is initialized by group.  
 There are 4 group.  
 RMC address is form 0 to 3

All

- Virtual CAUR-11
  - Group-00** **Click**
    - 101\_R1 Cool18°C
    - 101\_R2 Cool18°C
    - 201\_R1 Cool18°C

Desired : 18°C | Desired : 18°C | Desired : 18°C

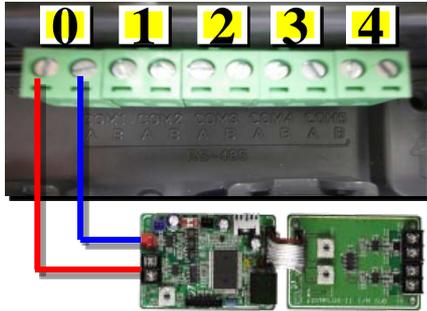
**After group initialization, user can control indoor units by individual or group**

## ❖ Why channel 0 is inactivated in tracking menu?

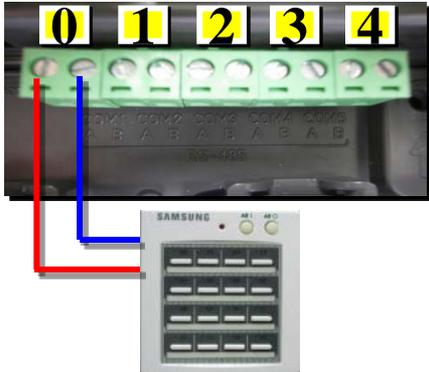
When the communication mode is changed (interface module ↔ centralized controller), it will occur.  
 In this case, click “disconnect all device” then can change communication mode.

### Example

1<sup>st</sup>  
installation



2<sup>nd</sup>  
installation



Communication mode by channel	
Channel 0	<input type="radio"/> Interface module <input type="radio"/> Central controller
Channel 1	<input checked="" type="radio"/> Interface module <input type="radio"/> Central controller
Channel 2	<input checked="" type="radio"/> Interface module <input type="radio"/> Central controller
Channel 3	<input checked="" type="radio"/> Interface module <input type="radio"/> Central controller
Channel 4	<input checked="" type="radio"/> Interface module <input type="radio"/> Central controller

\* The communication mode of a channel where the device is connected cannot be changed.

Cancel Save

**Inactivated !!**

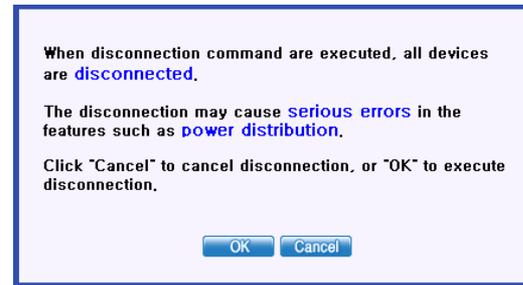
1 Click “Disconnect all devices”



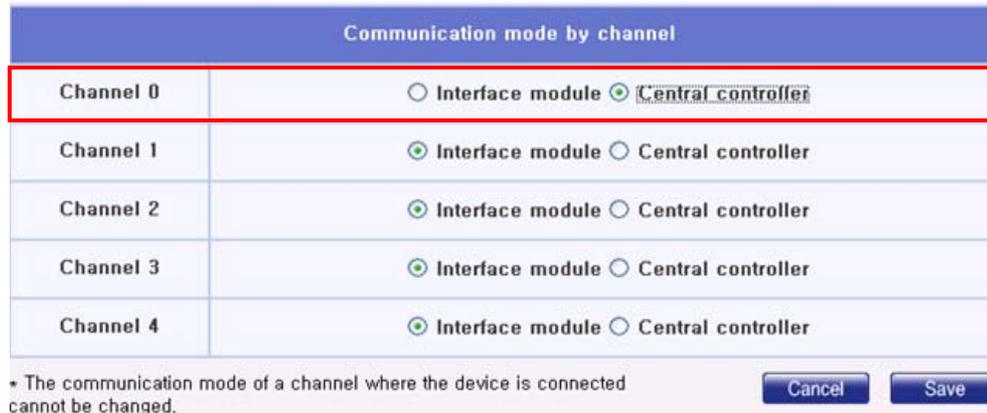
2 Enter the password



3 Click “OK” in pop-up menu

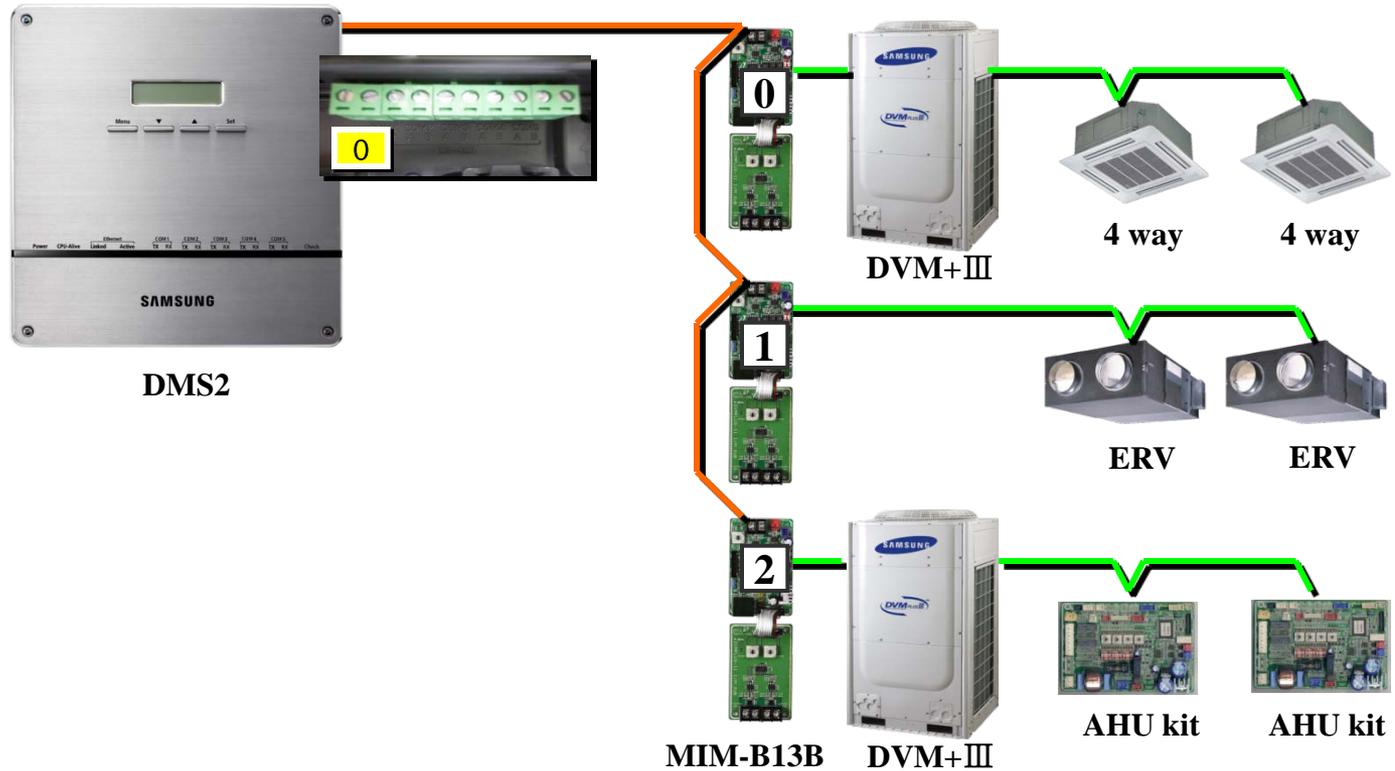


4 Channel 0 is activated



**Activated !!**

## Installation Diagram



## System Settings > Tracking

**DVM Tracking**    **Disconnect all devices**

<b>SIM</b> 0 EA	<b>Central controller</b> 0 EA	<b>Interface module</b> 3 EA	<b>Indoor unit</b> 6 EA
--------------------	-----------------------------------	---------------------------------	----------------------------

**Only total number is displayed !**

## System Settings > Tracking

Channel	Device	Address	Name
CH0	Central controller	11	
	Interface module	11.00	
	Indoor unit	11.00.00 (00)	11.00.00
	Indoor unit	11.00.01 (01)	
	Outdoor unit	11.00.00	
	Interface module	11.01	
	Indoor unit(ERV)	11.01.00 (00)	
	Indoor unit(ERV)	11.01.01 (01)	11.01.01
	Interface module	11.02	
	Indoor unit(AHU)	11.02.00 (00)	11.02.00
	Indoor unit(AHU)	11.02.01 (01)	11.02.01
	Outdoor unit	11.02.00	11.02.00
DMS	DMS DI-DO <a href="#">Setting</a>	56	DMSDIDO

Virtual centralized controller address is automatically assigned

RMC addresses

MAIN addresses

Interface module addresses

Centralized controller addresses

ERV

AHU

Indoor unit name

## Main display after tracking

The screenshot displays a BMS tracking interface. At the top, there are tabs for 'Mgt view' and 'Install view', and a 'Select View >>' menu with options for 'All', 'Indoor', 'ERV', and 'AHU'. The main display is divided into three sections: EHP (Energy Heat Pump), ERV (Energy Recovery Ventilator), and AHU (Air Handling Unit). Each section shows a grid of units with their addresses, current status, and desired temperature. Below the tracking view, there is a 'DMSDI..' section showing a grid of DI (Digital Input) and DO (Digital Output) ports, all of which are currently 'OFF'. A red dashed box highlights the tracking view, and a red arrow points from the 'DMSDI..' section to a cyan box labeled 'Management view'.

Unit Type	Address	Status	Desired Temp
EHP	11.00.00	Cool	18°C
	11.00.01	Cool	18°C
ERV	11.01.00	Off	-
	11.01.01	Off	-
AHU	11.02.00	Cool	18°C
	11.02.01	Cool	18°C

Port Type	Address	Status
DI	56.00.03	OFF
	56.00.04	OFF
	56.00.05	OFF
	56.00.06	OFF
	56.00.07	OFF
	56.00.08	OFF
DO	56.01.03	OFF
	56.01.04	OFF
	56.01.05	OFF
	56.01.06	OFF
	56.01.07	OFF
	56.01.08	OFF

**Although DI and DO ports not connected, DI/DO icons are displayed. Because DI/DO ports have each fixed address .**

- DI port address: 56.00.03~56.00.10
- DO port address: 56.01.03~56.01.08

## a. DMS network information

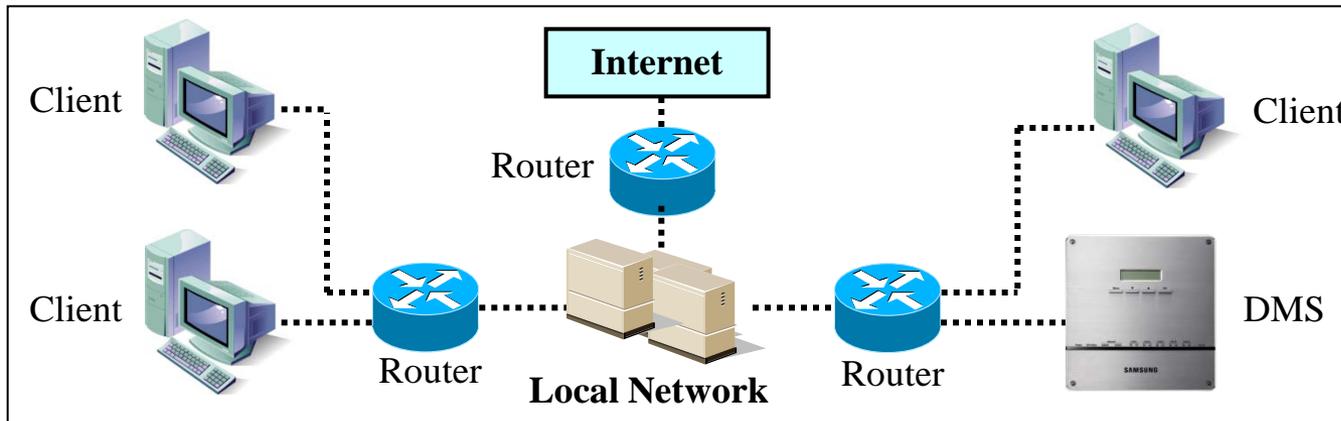
DMS network information	
IP <input type="text" value="10.240.81.138"/> <input type="checkbox"/> DHCP	Subnet mask <input type="text" value="255.255.255.0"/>
Basic gateway <input type="text" value="10.240.81.1"/>	DNS server <input type="text" value="0.0.0.0"/>
<input type="button" value="Modify"/> <input type="button" value="Save"/>	

IP Address : Networking DMS IP

Gateway : Gateway or router IP which each subgroup is networked with.

Subnet Mask : IP masking constant for subnet group

DNS Server : Preferred Domain Name Server IP



## b. System time

Current time setting for power distribution or schedule control.

System time						
YYYY-MM-DD	2010	-	3	-	10	17
HH-MM-SS	:	0	:	33		
						Modify Save

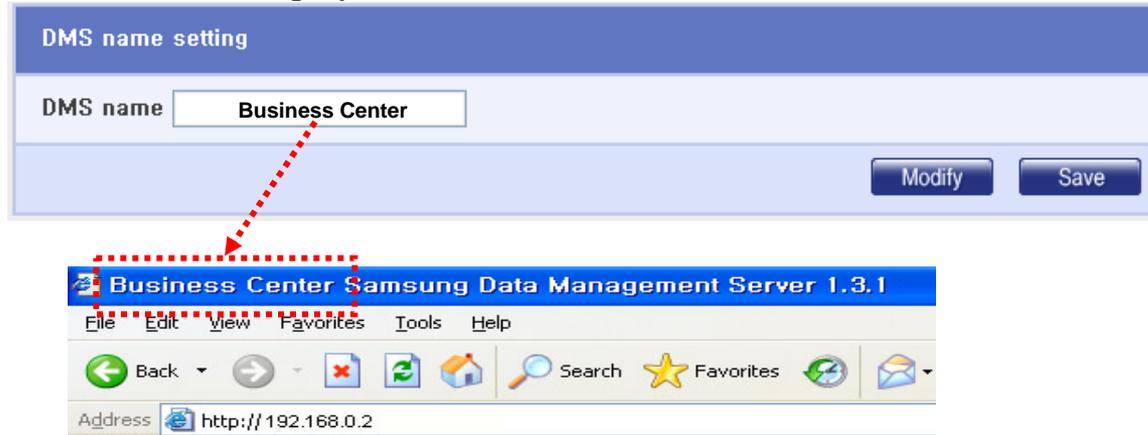
## c. Select Language

DMS language can set be set among English, Korean and Chinese.

Select a locale		
<input type="checkbox"/> Korean	<input type="checkbox"/> Chinese	<input checked="" type="checkbox"/> English
		Modify Save

## d. DMS name setting

DMS name is displayed on the web browser title bar.



## e. Error email forwarding

If there occurs an error in the DMS air-conditioning system, DMS sends error notification e-mail to managers by using SMTP servers in mailing service companies.

Error email transfer		
<input type="checkbox"/> Apply	<input checked="" type="checkbox"/> Not apply	E-mail <input type="text"/>
ID <input type="text"/>	PW <input type="text"/>	SMTP server <input type="text"/>

Password : Access password of the account in a mail server

Email : Email address to which error notification is expected to receive.

SMTP server : Mailing server IP address where DMS tries to access in case of error

## f. Select the contact control pattern

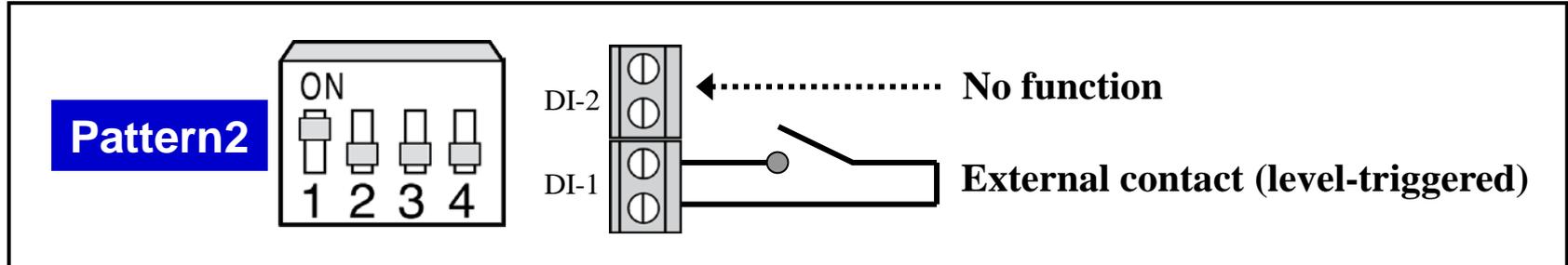
3 patterns can be selected depending on external contact interlocking operation.

Select the contact point control pattern

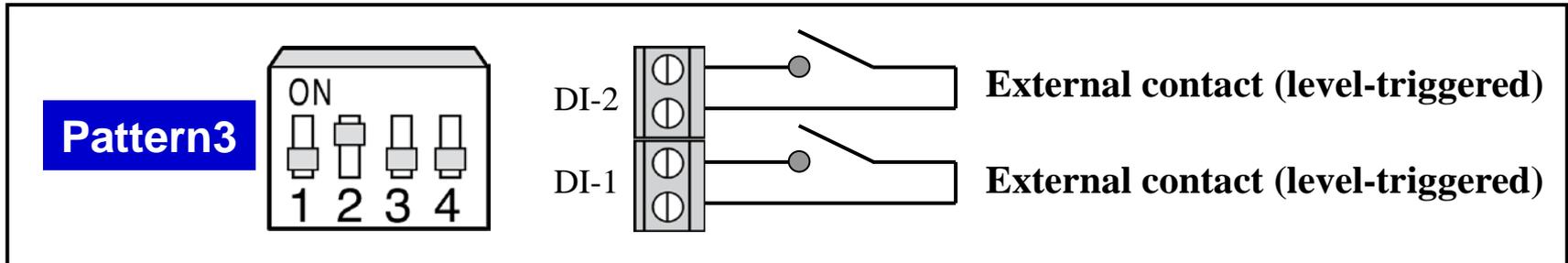
<input checked="" type="checkbox"/> Pattern1	<input type="checkbox"/> Pattern2	<input type="checkbox"/> Pattern3	<input type="checkbox"/> Pattern4
--	-----------------------------------	-----------------------------------	-----------------------------------

Modify
Save

Pattern	Control	Contact Input
<b>1</b>	No function (Default setting)	Not applied
<b>2</b>	1. Emergency stop operation. All indoor units stop operating and any command from upper controllers is ignored when the contact is closed. When released, the indoor units remains in the OFF state.	Level-triggered
<b>3</b>	1. Collective indoor unit ON/OFF control 2. Permitted/Prohibited remote controller use	Level-triggered
<b>4</b>	1. Indoor unit ON/OFF control 2. Permitted/Prohibited remote controller use	Pulse-triggered



- **Short external contact : Emergency stop**
  - . Turns off all the indoor units when there is an ON signal input.
  - . All the remote controller use is disabled.
  - . DMS will ignore any request from the upper-layer controllers.
  - . Schedule control is disabled temporarily.
- **Open external contact : Resume operation**
  - . After Emergency stop, the indoor units stay the current OFF states.
  - . All the remote controller use is restored to the previous state.
  - . Schedule controls is enabled again.



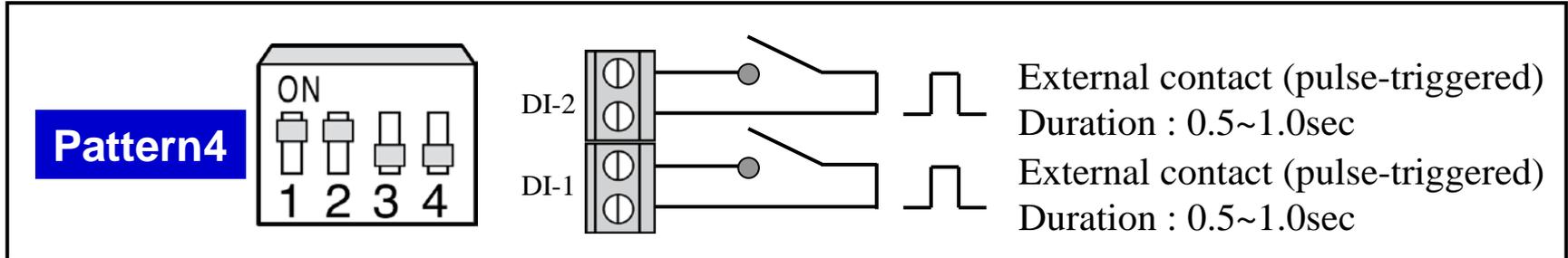
## ▪ External contact input to DI-1

- Short contact : Starts all indoor unit operation.
- Open contact : Stops all indoor unit operation.

## ▪ External contact input to DI-2

- Short contact : Disables the use of all wired/wireless remote controllers.
- Open contact : Enables the use of all wired/wireless remote controllers.

Schedule control is not interrupted in Pattern 3.



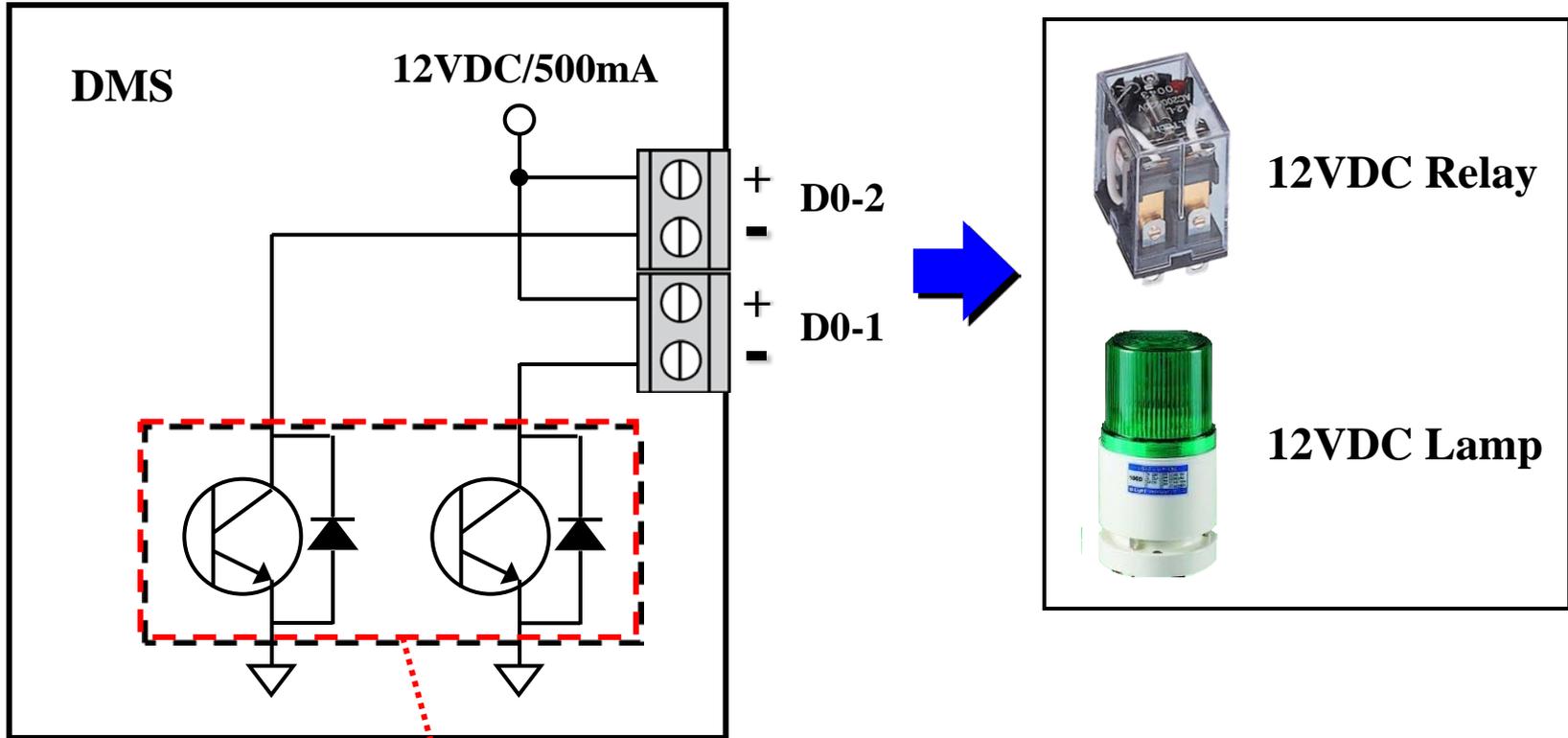
## External contact pulse input to DI-1

- Short pulse-triggered : Starts all indoor unit operation.

## External contact pulse input to DI-2

- Short pulse-triggered : Stops all indoor unit operation.

Schedule control is not interrupted in Pattern 4.



**2 digital outputs with open-collector front-end.**



# Web browser

1. Web user interface

2. Control and Monitoring

3. Zone management

4. Schedule

5. Control logic management

6. System Settings



**Zoom In&Out**

**Menu**

**Status display**

**Select & Control**

**IDU**

**DI/DO**

**Management view  
Installation view**

**Installation info**

**View control history & power consumption for each device**

Control and Monitoring | Zone management | Schedule | EHP Power Consumption Inspection | Control logic management | System Settings

Welcome! admin, [Logout](#)

ON RC ON | OFF RC Level1 | Filter Warning Schedule | Defrost Temp. Limit | Check Cool Only | Network Check Heat Only

Select all | OFF | OFF All | RC OFF | Detail

Select View >> All Indoor ERV AHU

Virtu.. All

11.00.00 Cool18°C | 11.00.01 Cool18°C | 11.01.00 | 11.01.01 | 11.02.00 Cool18°C | 11.02.01 Cool18°C

Desired : 18°C | Desired : 18°C | | | Desired : 18°C | Desired : 18°C

DMSDI.. All

56.00.03 OFF | 56.00.04 OFF | 56.00.05 OFF | 56.00.06 OFF | 56.00.07 OFF | 56.00.08 OFF

DI | DI | DI | DI | DI | DI

56.00.09 OFF | 56.00.10 OFF | 56.01.03 OFF | 56.01.04 OFF | 56.01.05 OFF | 56.01.06 OFF

DI | DI | DO | DO | DO | DO

56.01.07 OFF | 56.01.08 OFF

DO | DO

Install. Info.

Com. Error

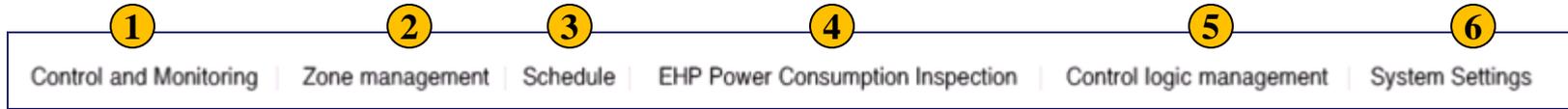
Address 11.01

Name 11.01.00

Date 2010-03-06 17:51

Code 628

View control history & power consumption ^



	Menu	Sub menu	Description
1	Control and Monitoring	• Cycle monitoring	ODU/IDU cycle data
		• Indoor unit usage restriction	Operation/Temperature limit
		• Trouble history	Error occurrence time/No./status
		• Checking operation status	Device control type
2	Zone management	• Zone setting& Edit	Individual/Group zone control
3	Schedule	• Schedule setting	Schedule resister/modify
		• Checking schedule control history	Schedule occurrence time search
4	EHP Power Consumption Inspection	• Check inspection result	IDU power consumption search
		• Setting the inspection section	Power meter reading section setting
		• Setting and checking watt-hour meter	SiM channel setting
		• Setting and checking virtual channel	Virtual channel setting
		• Channel setting by indoor unit	SiM/Virtual channel setting
		• Checking indoor unit operation time	Operation/Thermo on search



1

2

3

4

5

6

Control and Monitoring

Zone management

Schedule

EHP Power Consumption Inspection

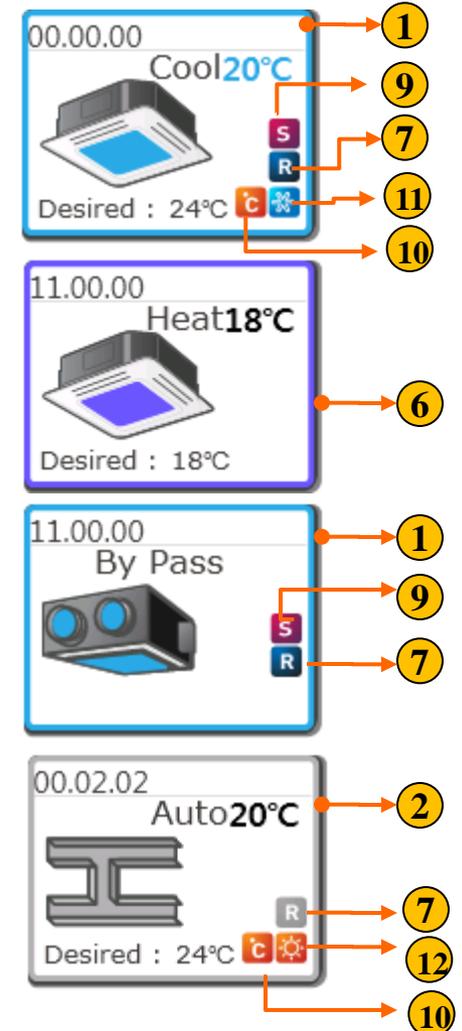
Control logic management

System Settings

	Menu	Sub menu	Description
5	Control logic management	• Setting control logic	Logic control setting
		• Checking control history	Logic control history
6	System Settings	• User management	User add/delete
		• User authorization management	User access level setting
		• Data backup & restoration	PC/SD card backup, recovery
		• Event history management	Searching event history
		• System environment setting	Network setting Time setting Language setting Name setting Mail transfer setting Pattern setting
		• RMS setting	RMS service setting
		• Tracking	Tracking /IDU name setting

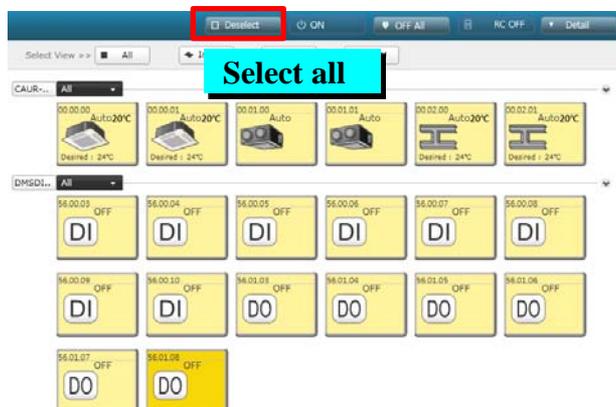
ON OFF Filter Warning Defrost Check Network Check  
RC ON RC Level1 Schedule Temp. Limit Cool Only Heat Only

	Icon	Description
1		Status of device is ON
2		Status of device is OFF
3		Filter reset alarm
4		Defrost occurrence
5		Error occurrence
6		Communication error occurrence
7		Remote controller On/Off restriction
8		When indoor unit is off by DMS2, remote controller usage is restricted.
9		Schedule
10		Upper/Lower temperature limit
11		Cooling only mode restriction
12		Heating only mode restriction





	Icon	Description
1	Select all/Deselect	Select all devices or Deselect all devices (Icon is toggled)
2	ON/OFF	Turn On or Off the selected device (Icon is toggled)
3	OFF All	Turn Off all devices
4	RC ON/RC OFF	Remote controller allow or restriction (Icon is toggled)
5	Detail	Control panel of indoor/ERV/AHU/DI/DO



① Click

Type	Display icon	Detail (Control panel)
Indoor unit		
ERV		
AHU		
DI		<p>- . Input value is impossible, only monitoring                  - . ON/OFF control is impossible</p>
DO		<p>- . Output value can be controlled                  - . ON/OFF control is possible</p>

Time	Power	Schedule name	Desired temp.	Operation mode	RC status	Air flow	Fan speed
08:30:00	ON	test	22°C	-	-	-	-
16:30:00	OFF	test	22°C	-	-	-	-

	Icon	Description
1	Select RC	ON: Remote controller allow OFF: Remote controller restriction Level 1: When IDU is on by DMS2, remote controller is available When IDU is off by DMS2, remote controller is restricted
2	Mode limits	Cool only: can not select the heat mode Heat only: can not select the cool mode
3	Temperature limit	Cool: 18°C~30°C, Heat: 16°C~30°C

# Web user interface

00.01.00 Auto

00.01.00

Reset filter Today schedule

Select mode **Auto** Auto Heat Ex By Pass Sleep

Select fan **Low** High Turbo

Select RC ON OFF Level1

**ERV has Low/High/Turbo**

00.02.00 Auto20°C

00.02.00

Reset filter Today schedule

Select mode **Auto** Auto Cool Dry Fan Heat

Select fan speed **Auto** Low Mid High

Select air flow Verti Hori. All None

Select RC ON OFF Level1

Mode limits coolonly Fan Cool heatonly Fan Heat No limits

Current 20°C

Desired temp 24

Cool lower limit 18 Apply

Heat upper limit 24 Apply

**AHU has only high**

56.00.03 OFF

**Non-Available**

56.00.03 **Non-Available**

Input value  Apply

Status ON OFF

56.01.03 ON

**Available**

56.01.03 **Available**

Input value  Apply

Status ON OFF

Mgt view | Install view

All

- Name
- Address
- Address & Name

+ Virtual CAUR-11

+ DM

- Management view is based on zone management
- If zone setting is changed, management view will be synchronized.
- Management view has 3 types.

Mgt view | Install view

Name

All

- Virtual CAUR-11
  - IM-00
    - EHP\_1
    - EHP\_2
  - IM-01
    - ERV\_1
    - ERV\_2
  - IM-02
    - AHU\_1
    - AHU\_2

Mgt view | Install view

Address

All

- Virtual CAUR-11
  - IM-00
    - 11.00.00
    - 11.00.01
  - IM-01
    - 11.01.00
    - 11.01.01
  - IM-02
    - 11.02.00
    - 11.02.01

Mgt view | Install view

Address & Name

Virtual CAUR-11

- IM-00
  - 11.00.00 (EHP\_1)
  - 11.00.01 (EHP\_2)
- IM-01
  - 11.01.00 (ERV\_1)
  - 11.01.01 (ERV\_2)
- IM-02
  - 11.02.00 (AHU\_1)
  - 11.02.01 (AHU\_2)

Zone Setting & Edit

All

- Virtual CAUR-11
  - IM-00
  - 102
  - IM-01
  - 202
  - IM-02
  - 302

Synchronization

Mgt view | Install view

Name

All

- Virtual CAUR-11
  - IM-00
  - 102
  - IM-01
  - 202
  - IM-02
  - 302

Mgt view | Install view

All

Virtual CAUR-11

DMS

Name

Address

Address & Name

- Install view is base on tracking .
- Although zone setting is change, install view is not changed.
- Install view has 3 type.

Mgt view | Install view

Name

All

Virtual CAUR-11

- 11.00.00
  - EHP\_1
  - EHP\_2
- 11.01.00
  - ERV\_1
  - ERV\_2
- 11.02.00
  - AHU\_1
  - AHU\_2

Mgt view | Install view

Address

All

11

- 11.00.00
  - 11.00.00
  - 11.00.01
- 11.01.00
  - 11.01.00
  - 11.01.01
- 11.02.00
  - 11.02.00
  - 11.02.01

Mgt view | Install view

Address & Nar

11 (Virtual CAUR-11)

- 11.00.00 (11.00.00)
  - 11.00.00 (EHP\_1)
  - 11.00.01 (EHP\_2)
- 11.01.00 (11.01.00)
  - 11.01.00 (ERV\_1)
  - 11.01.01 (ERV\_2)
- 11.02.00 (11.02.00)
  - 11.02.00 (AHU\_1)
  - 11.02.01 (AHU\_2)

Channel	Device	Address	Name
CH0	Central controller	11	Virtual CAUR-11
	Interface module	11.00	
	Indoor unit	11.00.00 (00)	EHP_1
		11.00.01 (01)	EHP_2
		11.00.00	11.00.00
	Interface module	11.01	
	Indoor unit(ERV)	11.01.00 (00)	ERV_1
	Indoor unit(ERV)	11.01.01 (01)	ERV_2
	Interface module	11.02	
	Indoor unit(AHU)	11.02.00 (00)	AHU_1
	Indoor unit(AHU)	11.02.01 (01)	AHU_2
	Outdoor unit	11.02.00	11.02.00
DMS	DMS DI 00	Setting	DMS DI 00

Synchronization

Tracking result

## Install Info

If you press “^” or “v”, install information will be displayed.  
When an error happens, error information will be described.

Install. Info.	
DO	6
SIM	0
OnOff Controller	1

Install. Info.	
I/M	3
Outdoor	2
Indoor	2

Install. Info.	
ERV	2
AHU	2
DI	8

Install. Info.	
Com. Error	
Address	11.01
Name	11.01.00
Date	2010-03-15 17:27
Code	628

## View control history & power consumption

If you press one indoor unit and then click this menu, you can see indoor unit information

CAUR-... All
 

00.00.00 Auto 20°C  
  
 Desired: 24°C

1

Click

2

Click

00.00.00

Control history

Power consumption

Power

Controlled time	2010-03-15 18:57:29	Consumption in the current month	0.0 kWh
Type of control	User control	Average consumption current month	0.0 kWh
Power	ON	Consumption of previous month	-
RC	-	Average consumption last month	-

←
1 / 3
→

View control history & power consumption

Control and Monitoring > Cycle monitoring

1 **Select** Cycle Data (Current outdoor unit : 00.00.00) **Selected outdoor unit**

**Click**

- All
- CAUR-00
- 00.00.00
- 00.01.00
- 00.02.00

2 **Select the outdoor unit**

Oil recovering	--	Operation Mode	--
Total capacity of Indoor	--	Defrost status	Off
Number of outdoor units	--	Oil balancing	--

Unit address	00	Outdoor temperature	25°C	Model	DVM-PLUS3 HEATPUMP
Suction temperature	20°C	Condenser outlet temp.	33°C	Oil / OLP temperature	10°C
Comp 1	Off	Comp 2	--	Comp 3	--
Main cooling valve	--	Hot Gas Valve	--	Outdoor capacity	--
4Way Valve	--	Liquid Bypass Valve	--	EVI Bypass Valve	--
Running currents(Comp.1)	--	Running currents(Comp.2)	--	Running currents(Comp.3)	--
High pressure data	40.0 kgf/cm2	Low pressure data	4.4 kgf/cm2	Double tube temperature	--
Main expansion valve step	300 STEP	EVI(Liquid) EEV	--	HR EEV(Gas Liquid EEV)	--
Discharge-1 temperature	22°C	Discharge-2 temperature	--	Discharge-3 temperature	--
Outdoor Fan Step	--	Loading Time	--	Accumulator CCH	--
CCH1	--	CCH2	--	CCH3	--



Control and Monitoring > Cycle monitoring

## EHP indoor unit cycle data

00.00.00		Address	00.00.00	RMC	00	Mode	Auto	Current temp.	20°C	Desired temp.	24°C
		Fan speed	Auto	Status	normal	Demand capacity	100kcal	Model code	2 Way	Eva In temp	50°C
		RC status	Disable	Filter warning	Off	Expansion valve step	120 STEP	Version	00575C 2008-03	Eva Out temp	50°C

## ERV indoor unit cycle data

00.01.00		Address	00.01.00	RMC	00	Mode	Auto	Current temp.	--	Desired temp.	--
		Fan speed	Low	Status	normal	Demand capacity	--	Model code	ERV	Eva In temp	--
		RC status	Disable	Filter warning	Off	Expansion valve step	--	Version	00575C 2007-12	Eva Out temp	--

## AHU indoor unit cycle data

00.02.00		Address	00.02.00	RMC	00	Mode	Auto	Current temp.	20°C	Desired temp.	24°C
		Fan speed	High	Status	normal	Demand capacity	100kcal	Model code	AHU	Eva In temp	50°C
		RC status	Disable	Filter warning	Off	Expansion valve step	120 STEP	Version	00575C 2008-03	Eva Out temp	50°C

## Control and Monitoring > indoor unit usage restriction

- Operation mode lock and mandatory control can be set for each of indoor units to prevent the mixed operation.
- Set temperature can be limited to a certain range for heating and cooling energy saving.

Indoor unit usage restriction					
Address	Name	Limit mode	Control mode	Lower temperature limit in Cool mode	Upper temperature limit in Heat mode
00.00.00(00)	00.00.00	Cool-only	<input checked="" type="radio"/> Fan <input type="radio"/> Cool	<input checked="" type="radio"/> Disable <input type="radio"/> Enable <input type="text"/> °C	<input checked="" type="radio"/> Disable <input type="radio"/> Enable <input type="text"/> °C
00.00.01(01)	00.00.01	Cool-only	<input checked="" type="radio"/> Fan <input type="radio"/> Cool	<input checked="" type="radio"/> Disable <input type="radio"/> Enable <input type="text"/> °C	<input checked="" type="radio"/> Disable <input type="radio"/> Enable <input type="text"/> °C
00.02.00(00)	00.02.00	None	<input checked="" type="radio"/> None <input type="radio"/> None	<input checked="" type="radio"/> Disable <input type="radio"/> Enable <input type="text"/> °C	<input checked="" type="radio"/> Disable <input type="radio"/> Enable <input type="text"/> °C
00.02.01(01)	00.02.01	None	<input checked="" type="radio"/> None <input type="radio"/> None	<input checked="" type="radio"/> Disable <input type="radio"/> Enable <input type="text"/> °C	<input checked="" type="radio"/> Disable <input type="radio"/> Enable <input type="text"/> °C

Range: 18°C~30°C

Range: 16°C~30°C

None	<input checked="" type="radio"/> None <input type="radio"/> None
Cool-only	<input checked="" type="radio"/> Fan <input type="radio"/> Cool
Heat-only	<input checked="" type="radio"/> Fan <input type="radio"/> Heat

**None** : Mixed-mode indoor unit stays in Stop with the warning display (LED blinking)  
**Cooling only** : Heating indoor unit is mandatorily switched to Fan or Cooling  
**Heating only** : Cooling indoor unit is mandatorily switched to Fan or Heating



## Control and Monitoring > Trouble history

- Trouble history show the device type, occurrence time, resolution time, error code and status.
- If same error code happens in one day, number of error occurrence is displayed within parenthesis. In this case, occurrence time display first error occurrence time.
- DMS2 can save maximum 1024 trouble history. If the number of history exceeds 1024, DMS2 will delete the oldest history first.

2010 3 15 - 2010 3 15

All  Communication trouble

Check	Address	Device type	Occurrence time	Resolution time	Code No.	Status
<input type="checkbox"/>	00	caur	2010-03-15 21:01	2010-03-15 22:06	611	Resolved
DMS:DMS <-> CAUR Communication Error						
<input type="checkbox"/>	11.00	trans	2010-03-15 17:19	2010-03-15 17:21	628	Resolved
<input type="checkbox"/>	11.01	trans	2010-03-15 17:19	2010-03-15 18:31	628	Resolved (2)
Communication error between DMS<->Transmitter						

Click

first error occurrence time

Number of error occurrence

## Control and Monitoring > Checking operation status

2010 3 15 all Search

Device type	Occurrence time	Control Unit	Control type	Controlled device
DVM	2010.03.15 18:57:29	DMS Web	Upper controller control	00.02.01. 00.02.00. 00.00...
DVM	2010.03.15 18:57:29	DMS Web	Upper controller control	00.01.01. 00.01.00
Control device(DVM) 00.01.01(00.01.01), 00.01.00(00.01.00) Control device type : DVM Power : On				
DVM	2010.03.15 20:02:37	DMS Web	Upper controller control	00.00.01. 00.00.00
Control device(DVM) 00.00.01(00.00.01), 00.00.00(00.00.00) Control device type : DVM Power : Off				
DVM	2010.03.15 20:02:37	DMS Web	Upper controller control	00.01.01. 00.01.00
DVM	2010.03.15 20:02:37	DMS Web	Upper controller control	00.02.01. 00.02.00. 00.00...
DVM	2010.03.15 20:02:37	DMS Web	Upper controller control	00.02.01. 00.02.00. 00.00...
DVM	2010.03.15 20:02:37	DMS Web	Upper controller control	00.01.01. 00.01.00
DVM	2010.03.15 20:02:42	DMS Web	Upper controller control	00.00.00
DVM	2010.03.15 20:09:34	DMS Web	Upper controller control	00.00.00
DVM	2010.03.15 20:09:45	DMS Web	Upper controller control	00.00.00

Click the row for detailed information.

1 2 > >>

Click

If 10 event is over per one page, select the next page

- Checking operation status shows
  - Device type
  - Occurrence time
  - Control unit
  - Control type
  - Controlled device address
- In this menu, check below items.
  - DMS2 On/Off,
  - Device O/Off, remote restriction,
  - operation mode change, set temperature and so on....
- DMS2 saves the information of operation history 180 days. However, it varies depending on saving space of DMS2

User authorization management

**Default authorization setting**

Menu	Admin	Manager	Regular user
Control and Monitoring	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Zone management	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schedule	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EHP Power Consumption Inspection	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Control logic management	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
System Settings	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Save Initialize

- **Admin(Administrator):** Default setting is allowed to access to all menu. Can't be edit.
- **Manager:** Default setting is allowed to access to all menu. Can be edit
- **Regular user:** Default setting is allowed to only "Control and Monitoring". Can be edit.

▪ Editing the accessible menu

Menu	Admin	Manager	Regular user
Control and Monitoring	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Zone management	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schedule	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
EHP Power Consumption Inspection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Control logic management	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
System Settings	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3 Click

2 Save Initialize

1 Select or deselect the accessible menu

Microsoft Internet Explorer  
Successfully done.  
확인

▪ If a user press the menu which can't be access, warning message is pop-up

Microsoft Internet Explorer

User does not have control authorization.

확인

Control and Monitoring | Zone management | Schedule

Zone Setting & Edit

Welcome! guest | LOGOUT

User name

Click



System Settings > User management

User management

**Default user setting**

ID	Password	Name	Description	Registration date	Authority
admin	1234	admin	admin	2009.1.1	Admin
guest	guest	guest	guest	2009.1.1	Regular user

**Add user** **Click**

Add the users

ID: manager1

Password: 1234

Name: Nicholas

Description: Buinding manger

Registration date: 2010.3.18

Authority: **Manager**

Save Cancel

ID: user1

Password: 1234

Name: Jhon

Description: 101 guest

Registration date: 2010.3.18

Authority: **Regular user**

Save Delete Cancel

## How to delete a user?

ID	Password	Name	Description	Registration date	Authority
admin	1234	admin	admin	2009.1.1	Admin
guest	guest	guest	guest	2009.1.1	Regular user
manager1	1234	Nicholas	Building manger	2010.3.18	Manager
user1	1234	Jhon	101 guest	2010.3.18	Regular user
user2	1234	Tom	201 guest	2010.3.18	Regular user
				2010.3.18	Regular user

1 Click

ID	user1
Password	1234
Name	Jhon
Description	101 guest
Registration date	2010.3.18
Authority	Regular user

2 Click

Add user

There is no "delete" menu

Zone management > Zone Setting & Edit

**Zone Setting & Edit**

**Zone structure**

- All
  - CAUR-00
    - IM-00
      - ◀ 00.00.00
      - ◀ 00.00.01
    - IM-01
      - 00.01.00
      - 00.01.01
    - IM-02
      - I 00.02.00
      - I 00.02.01
  - DMS DI-DO
    - ⊕ DI-56
    - ⊕ DO-56

**Selected zone**

All

<input checked="" type="checkbox"/>	ID	Name	Registration date	Description	Authority
<input checked="" type="checkbox"/>	guest	guest	2009.1.1	guest	General user
<input checked="" type="checkbox"/>	manager1	Nicholas	2010.3.18	Building manger	Administrator
<input checked="" type="checkbox"/>	user1	Jhon	2010.3.18	101 guest	General user
<input checked="" type="checkbox"/>	user2	Tom	2010.3.18	201 guest	General user
<input checked="" type="checkbox"/>	user3	Jerry	2010.3.18	301 guest	General user

⊗ The setting of user view permission can be saved only for the users in the selected zone.

Individual Group

Zone Edit

⊗ Initialize mode : Individual

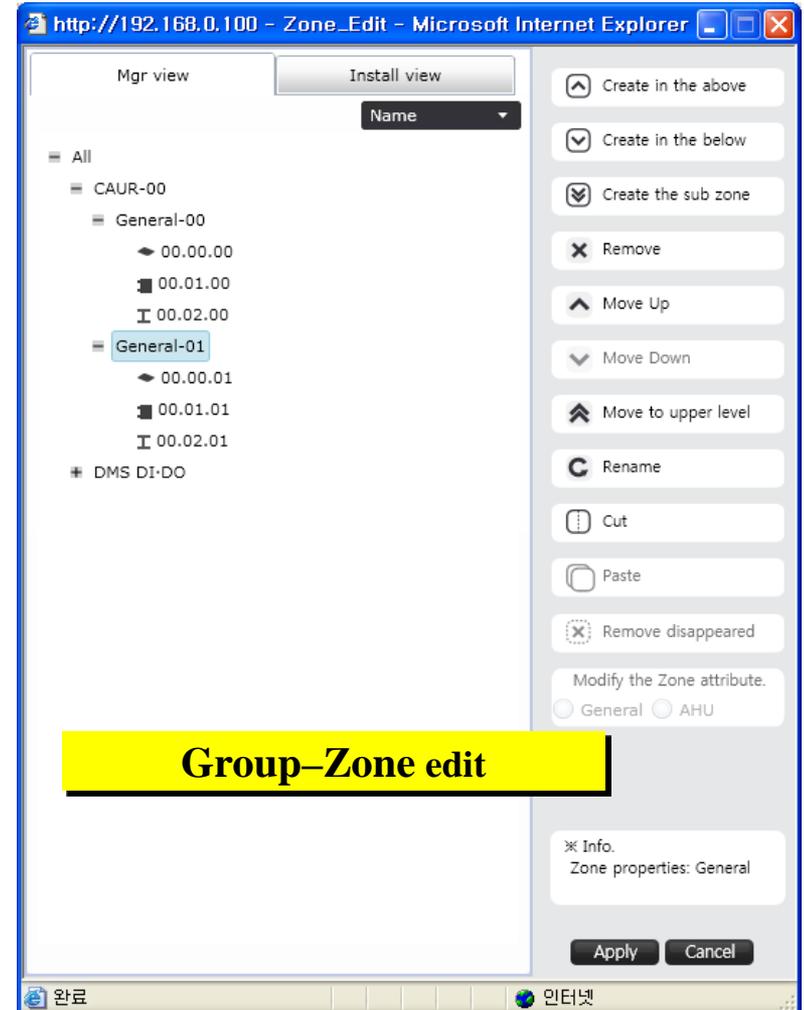
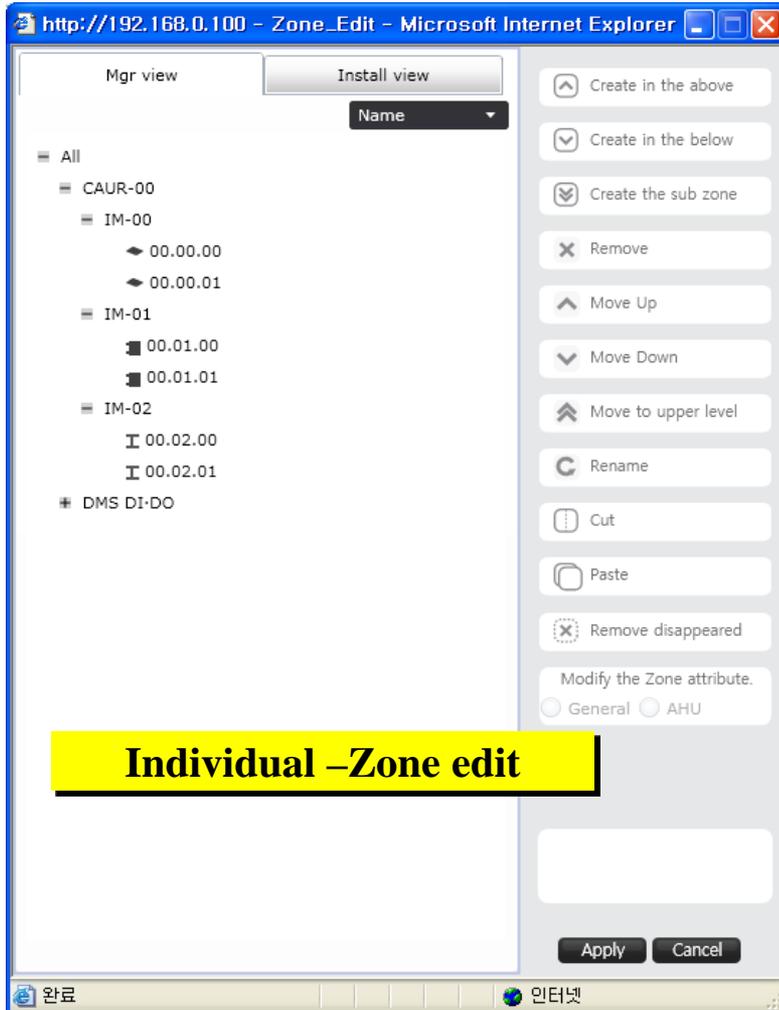
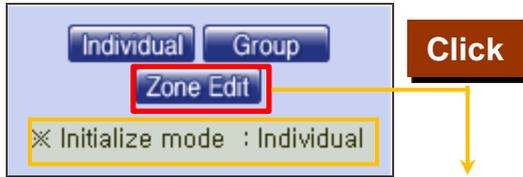
**Zone authorization check box**

**Initialize zone**

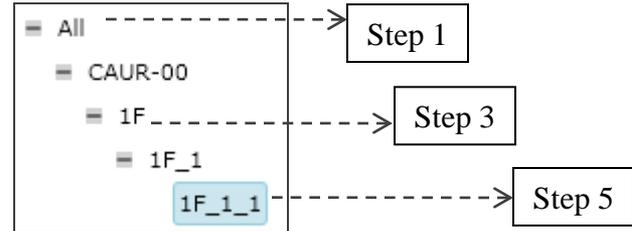
**Edit the zone structure**

**Initialization mode status**

# Zone management



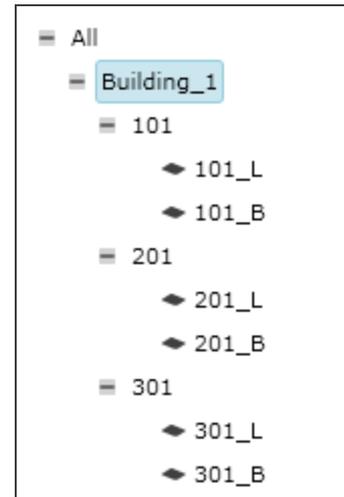
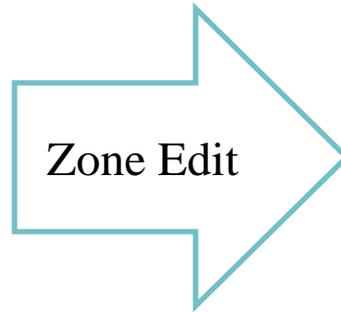
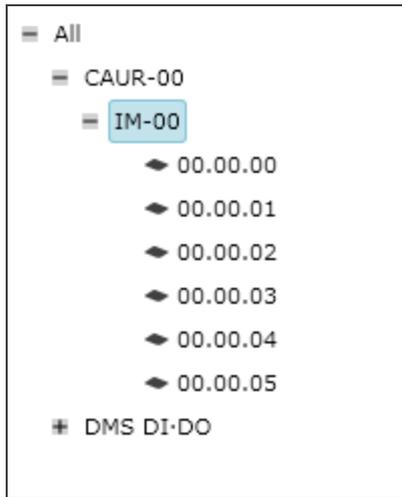
**Max. is under step 5**



**Max. is 16 character**



**Delete all missing devices which were found after tracking**



Mgt view
Install view

Select View >>
All
Indoor
ERV
AHU

Main display

Building\_1
 

- 101
  - 00.00.00 (101\_L)
  - 00.00.01 (101\_B)
- 201
  - 00.00.02 (201\_L)
  - 00.00.03 (201\_B)
- 301
  - 00.00.04 (301\_L)
  - 00.00.05 (301\_B)

Build.. All

101\_L  
Auto20°C  
Desired : 24°C

101\_B  
Auto20°C  
Desired : 24°C

201\_L  
Auto20°C  
Desired : 24°C

201\_B  
Auto20°C  
Desired : 24°C

301\_L  
Auto20°C  
Desired : 24°C

301\_B  
Auto20°C  
Desired : 24°C

DMS D.. All
고장(0) ON(0) OFF(14) 선택(0)

Individual initialization is not changed

New zone structure & New indoor unit name

**1** Click

**2** Check

**101 zone is only accessible to user1**

Selected zone

	ID	Name	Registration date	Description	Authority
<input type="checkbox"/>	guest	guest	2009.1.1	guest	General user
<input type="checkbox"/>	manager1	Nicholas	2010.3.18	Building manger	Administrator
<input checked="" type="checkbox"/>	user1	Jhon	2010.3.18	101 guest	General user
<input type="checkbox"/>	user2	Tom	2010.3.18	201 guest	General user
<input type="checkbox"/>		Jerry	2010.3.18	301 guest	General user

※ The setting of user view permission can be saved only for the users in the selected zone.

Save

**1** Click

**2** Check

**201 zone is only accessible to user2**

Selected zone

	ID	Name	Registration date	Description	Authority
<input type="checkbox"/>	guest	guest	2009.1.1	guest	General user
<input type="checkbox"/>	manager1	Nicholas	2010.3.18	Building manger	Administrator
<input type="checkbox"/>	user1	Jhon	2010.3.18	101 guest	General user
<input checked="" type="checkbox"/>	user2	Tom	2010.3.18	201 guest	General user
<input type="checkbox"/>	user3	Jerry	2010.3.18	301 guest	General user

※ The setting of user view permission can be saved only for the users in the selected zone.

Save

# Zone management

- User name: Jhon
- Accessible level: regular user
- Zone: 101(101\_L, 101\_B)

- User name: Tom
- Accessible level: regular user
- Zone: 201(201\_L, 201\_B)

- User name: admin
- Accessible level: Administrator
- Zone: all

Upper level should be check !!  
 If upper level zone is not check, there is no indoor unit when the regular user login.

Building_1	
<input type="checkbox"/>	ID
<input checked="" type="checkbox"/>	guest
<input checked="" type="checkbox"/>	manager1
<input type="checkbox"/>	user1
<input type="checkbox"/>	user2
<input type="checkbox"/>	user3

User1 is not checked upper level zone

101	
<input type="checkbox"/>	ID
<input type="checkbox"/>	guest
<input type="checkbox"/>	manager1
<input checked="" type="checkbox"/>	user1
<input type="checkbox"/>	user2
<input type="checkbox"/>	user3

User1 is only checked 101 zone

Welcome! Jhon, [Logout](#)    ON RC ON    OFF RC Level1    Filter W Schedu

Select all    [Power Icon]

Mgt view    Install view    Select View >>    All    Indoor    ERV

Name    DMS DI-DO

There is no indoor unit !

All

# DMS DI-DO

56.00.03 OFF DI

56.00.04 OFF DI

56.00.05 OFF DI

Schedule > Schedule setting

Schedule setting

**Schedule setting initial display**

<input type="checkbox"/>	Scheduled period	Schedule name	Status	Repeat
<input type="checkbox"/>				

- Maximum 70 events can be set per one schedule
- 10 events per one day can be set

Create a schedule

Name

Scheduled period  
 2010 / 3 / 19 - 2011 / 3 / 19  No limit

Excluded day

<input type="checkbox"/>	Date
<input type="checkbox"/>	

Applied indoor unit

<input type="checkbox"/>	Address	Name
<input type="checkbox"/>		

Weekly

<input type="checkbox"/>	ON	OFF	Temp.	RC	Mode	Fan speed	Air flow	ERV	ERV fan speed
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	No set	No set	No set	No set	No set	No set

**Create a schedule**

Create a schedule

**Schedule type**

Name: Weekly\_1

Scheduled period: 2010 / 3 / 19 - 2010 / 6 / 30  No limit

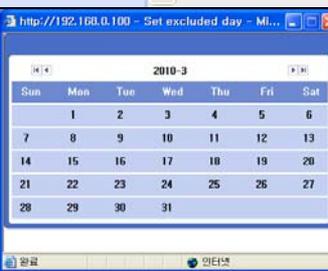
Excluded day:  Date: 

Applied indoor unit

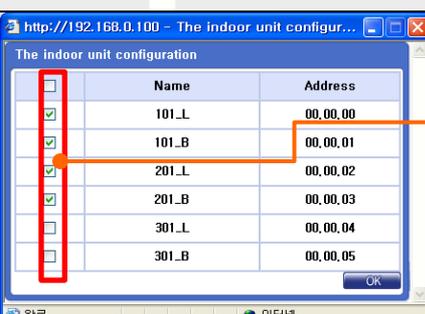
<input type="checkbox"/>	Address	Name
<input type="checkbox"/>		

Weekly	Mon	Tue	Wed	Thu	Fri	Sat	Sun	
OFF	Temp.	RC	Mode	Fan speed	Air flow	ERV	ERV fan speed	
<input type="checkbox"/>	08:30	17:30	No set	No set	No set	No set	No set	
							<input type="button" value="Add"/>	<input type="button" value="Delete"/>

**Exception day**



**Add indoor**



Select synchronous ERV operation mode with indoor units

Set the dates when schedule control is skipped.

Press to select indoor units which schedule control is applied to.

Name: Schedule\_Everyday

Scheduled period: 2010 / 3 / 18 - 2011 / 3 / 19  No limit

Excluded day

Date
<input checked="" type="checkbox"/> 2010/03/21
<input checked="" type="checkbox"/> 2010/03/28
<input checked="" type="checkbox"/> 2010/04/04

Applied indoor unit

Address	Name
<input checked="" type="checkbox"/> 00,00,00	101_L
<input checked="" type="checkbox"/> 00,00,01	101_B
<input checked="" type="checkbox"/> 00,01,00	00,01,00

Everyday

	ON	OFF	Temp.	RC	Mode	Fan speed	Air flow	ERV	ERV fan speed
<input type="checkbox"/>	08:30	09:30		No set	No set	No set	No set	Auto	Turbo
<input type="checkbox"/>	11:30	17:30	24	No set	No set	No set	No set	No set	No set

No setting  
 On  
 Off  
 Level1

Menu	Function
<b>No setting</b>	Schedule control does not affect wired/wireless remote control use.
<b>On</b>	Use of wired/wireless remote controllers are allowed all the time.
<b>Off</b>	Use of wired/wireless remote controllers are prohibited.
<b>Level1</b>	When indoor units are turned on by DMS or centralized controllers, remote controllers are allowed to use. When the indoor units are turned off by DMS or the centralized controllers, remote controllers are prohibited to use.

means exception date and indoor unit is applied

## Schedule setting

1 **Check**

<input type="checkbox"/>	Scheduled period	Schedule name	Status	Repeat
<input type="checkbox"/>	2010/03/19 ~ 2010/03/19	Schedule_1day	Stop	1day
<input type="checkbox"/>	2010/03/18 ~ 2011/03/19	Schedule_Everyday	Stop	Everyday
<input type="checkbox"/>	2010/03/19 ~ 2011/03/19	Schedule_Weekly	Stop	Weekly

Delete **Run** Stop Stop all Register Edit

2 **Click**

Schedule is not running. To run each schedule, check box is checked and click “run”



## Schedule setting

<input type="checkbox"/>	Scheduled period	Schedule name	Status	Repeat
<input checked="" type="checkbox"/>	2010/03/19 ~ 2010/03/19	Schedule_1day	Run	1day
<input type="checkbox"/>	2010/03/18 ~ 2011/03/19	Schedule_E	Stop	Everyday
<input type="checkbox"/>	2010/03/19 ~ 2011/03/19	Schedule_Weekly	Stop	Weekly

Delete Run Stop Stop all Register Edit

**Schedule\_1day is running !**

- 1day schedule is running : one indoor scheduled

<input type="checkbox"/>	2010/03/19 ~ 2010/03/19	Schedule_1day	Run	1day
--------------------------	-------------------------	---------------	-----	------

101_L Auto20°C  Desired : 24°C	101_B Auto20°C  Desired : 24°C	00.01.00 Auto <b>S</b>	00.01.01 Auto 	00.02.00 Auto20°C  Desired : 24°C	00.02.01 Auto20°C  Desired : 24°C
---	---	------------------------------	----------------------	--	--

- Everyday schedule is running : 6 indoor units are scheduled

<input type="checkbox"/>	2010/03/18 ~ 2011/03/19	Schedule_Everyday	Run	Everyday
--------------------------	-------------------------	-------------------	-----	----------

101_L Auto20°C <b>S</b> Desired : 24°C	101_B Auto20°C <b>S</b> Desired : 24°C	00.01.00 Auto <b>S</b>	00.01.01 Auto <b>S</b>	00.02.00 Auto20°C <b>S</b> Desired : 24°C	00.02.01 Auto20°C <b>S</b> Desired : 24°C
---	---	------------------------------	------------------------------	--	--

- Weekly schedule is running : 2 indoor units are scheduled

<input type="checkbox"/>	2010/03/19 ~ 2011/03/19	Schedule_Weekly	Run	Weekly
--------------------------	-------------------------	-----------------	-----	--------

101_L Auto20°C  Desired : 24°C	101_B Auto20°C  Desired : 24°C	00.01.00 Auto 	00.01.01 Auto 	00.02.00 Auto20°C <b>S</b> Desired : 24°C	00.02.01 Auto20°C <b>S</b> Desired : 24°C
---	---	----------------------	----------------------	--	--



## Schedule > Checking schedule control history

Schedule name	Occurrence time	Controlling subject	Control type
Schedule_Everyday	2010.03.20 08:00:00	DMS internal features	Schedule control
Control device(DVM) 00.02.01(00.02.01), 00.02.00(00.02.00), 101_B(00.00.01), 101_L(00.00.00) Control device type : DVM Power : On			
Schedule_Everyday	2010.03.20 08:00:00	DMS internal features	Schedule control
Schedule_Everyday	2010.03.20 10:00:00	DMS internal features	Schedule control
Schedule_Everyday	2010.03.20 10:00:00	DMS internal features	Schedule control
Control device(DVM) 00.01.01(00.01.01), 00.01.00(00.01.00)			
Control device type : DVM Power : Off, Operation mode : Auto, Fan speed : Turbo			

Click

Detail information is shown

Controlled indoor unit address

Schedule setting is described

- **DMS2 saves the information of operation history 180 days. However, it varies depending on storage space of DMS2**

## ■ What is the control logic?

According to input condition as like room temperature or outdoor temperature, the user can control EHP, ERV, AHU and digital output. Input condition can be combined with parameter and calculated with arithmetic equation. Schedule setting is operated with base on time but control logic works according to the input condition

## ■ When is the control logic required?

Case 1)

In any country, government restrict the lowest room temperature at 26°C with regulation in public area. If the room temperature is lower than 26°C, building manager has to turn off the system. In this case, is it very convenient that indoor unit is automatically off ?

Case 2)

In spring or fall season, morning is a little cold but day is a little hot. The customer requires heat mode in the morning but want to change the operation mode to cool mode at noon. At that time, it is very nice that system automatically change over the operation mode according to outdoor temperature ?

Case3)

In site which EHP and EVR is together installed, the user requires that EHP is turned on if room temperature is high and ERV is turned on if outdoor temperature is lower than room temperature to save the energy. It is very difficulty to handle the system. Is there no solution ?

Control logic management > Setting control logic

Setting control logic

**Setting control logic initial display**

<input type="checkbox"/>	No.	Name	Period	Days	Time	Apply	Run

Click
Register
Edit
Delete
Copy
Apply
Not apply

Setting control logic

**Name**

**Period** 2010  3  23  - 2011  3  23

**Day**  Sun  Mon  Tue  Wed  Thu  Fri  Sat  Daily

**Time** 0  : 0  - 24  : 0

**Input**

Compound factor	Factor	Comparison operator	Standard value	Duration (minute)
<input type="checkbox"/>	Select a factor	= <input type="text"/>	<input checked="" type="radio"/> None <input type="radio"/> Select a factor	<input checked="" type="radio"/> Cancel <input type="radio"/> Apply 1 <input type="text"/>
<input type="checkbox"/> AND <input type="text"/>	Select a factor	= <input type="text"/>	<input checked="" type="radio"/> None <input type="radio"/> Select a factor	<input checked="" type="radio"/> Cancel <input type="radio"/> Apply 1 <input type="text"/>
<input type="checkbox"/> AND <input type="text"/>	Select a factor	= <input type="text"/>	<input checked="" type="radio"/> None <input type="radio"/> Select a factor	<input checked="" type="radio"/> Cancel <input type="radio"/> Apply 1 <input type="text"/>

**Output**

<input type="checkbox"/>	Factor	Command
	Select a factor	<input checked="" type="radio"/> None <input type="radio"/> Select a factor
<input type="checkbox"/>	Select a factor	<input checked="" type="radio"/> None <input type="radio"/> Select a factor
<input type="checkbox"/>	Select a factor	<input checked="" type="radio"/> None <input type="radio"/> Select a factor

Add Delete

\* Setting Guide: In the initial setting, click 'Select a factor' and a factor editing window appears. Then click 'Select a device' to set the device. After setting the device, the information in the "Select a factor" is updated to the setting. Select the information to modify it.

Save

**Control logic configuration**

- 1) set the program name, period, day and time
- 2) input condition : Max 3 input factor
- 3) output factor : Max. 30 output factor

Setting control logic

**1)Basic setting**  
Name, Period, Day, Time

Name	<input type="text"/>
Period	2010 <input type="button" value="v"/> 3 <input type="button" value="v"/> 23 <input type="button" value="v"/> - 2011 <input type="button" value="v"/> 3 <input type="button" value="v"/> 23 <input type="button" value="v"/>
Day	<input type="checkbox"/> Sun <input type="checkbox"/> Mon <input type="checkbox"/> Tue <input type="checkbox"/> Wed <input type="checkbox"/> Thu <input type="checkbox"/> Fri <input type="checkbox"/> Sat <input checked="" type="checkbox"/> Daily
Time	0 <input type="button" value="v"/> : 0 <input type="button" value="v"/> - 24 <input type="button" value="v"/> : 0 <input type="button" value="v"/>

**2)Input condition**  
-Edit factor  
-Compound factor  
-Comparison operator  
-Duration

Compound factor	Factor	Comparison operator	Standard value	Duration (minute)
	Select a factor	= <input type="button" value="v"/>	<input checked="" type="radio"/> None <input type="button" value="v"/> <input type="radio"/> Select a factor	<input checked="" type="radio"/> Cancel <input type="radio"/> Apply 1 <input type="button" value="v"/>
AND <input type="button" value="v"/>	Select a factor	= <input type="button" value="v"/>	<input checked="" type="radio"/> None <input type="button" value="v"/> <input type="radio"/> Select a factor	<input checked="" type="radio"/> Cancel <input type="radio"/> Apply 1 <input type="button" value="v"/>
AND <input type="button" value="v"/>	Select a factor	= <input type="button" value="v"/>	<input checked="" type="radio"/> None <input type="button" value="v"/> <input type="radio"/> Select a factor	<input checked="" type="radio"/> Cancel <input type="radio"/> Apply 1 <input type="button" value="v"/>

**3)Output condition**  
-Edit factor  
-Command

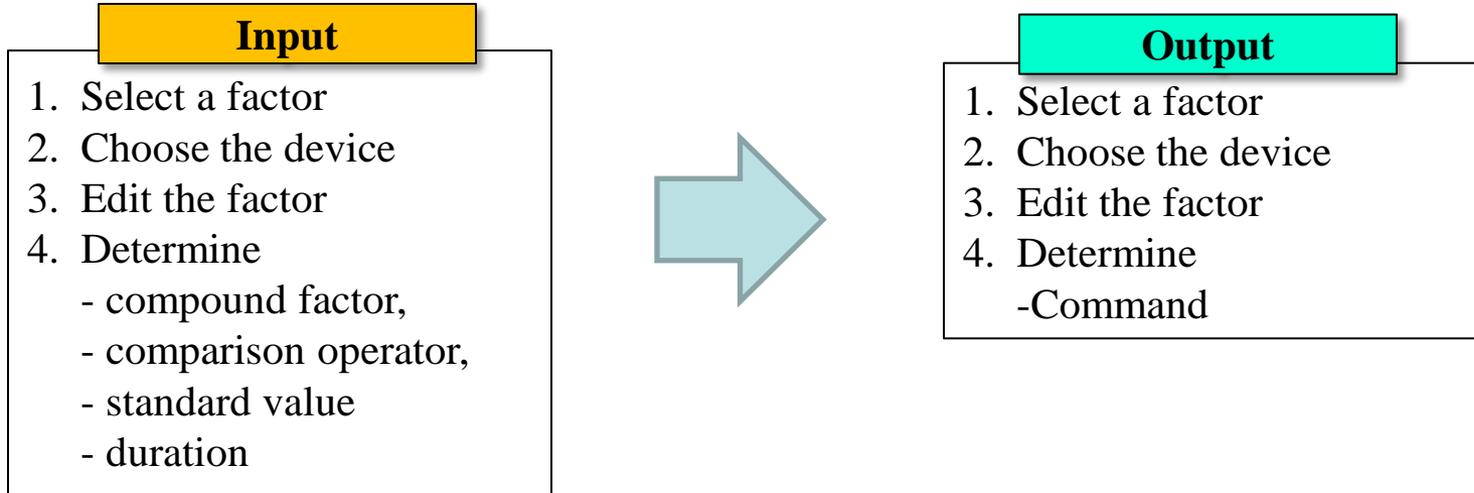
Factor	Command
Select a factor	<input checked="" type="radio"/> None <input type="button" value="v"/> <input type="radio"/> Select a factor
Select a factor	<input checked="" type="radio"/> None <input type="button" value="v"/> <input type="radio"/> Select a factor
<input type="checkbox"/> Select a factor	<input checked="" type="radio"/> None <input type="button" value="v"/> <input type="radio"/> Select a factor

Add Delete

\* Setting Guide: In the initial setting, click 'Select a factor' and a factor editing window appears. Then click 'Select a device' to set the device. After setting the device, the information in the "Select a factor" is updated to the setting. Select the information to modify it.

Save

## Sequence of control logic setting



Edit factor		
Single	Power Current temp. Desired temp. Outside temp. Mode Fan speed Air flow Enable RC	
Arithmetic	+ -	Current temp. Desired temp. Outside temp.
Function	Average	Current temp. Desired temp. Outside temp.

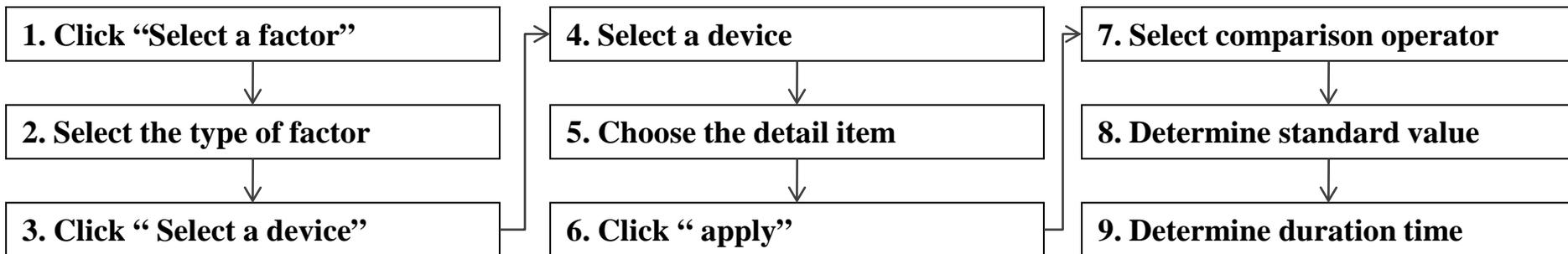
Compound factor
AND
OR

Comparison operator
=
=>
=<
<
>
≠

Command
Power
Desired temp
Mode
Fan speed
Air flow
Enable RC

## Input setting

The screenshot shows the 'Input' configuration screen. At the top, the 'Factor edit' dropdown is set to 'Single'. A 'Device' dropdown is labeled 'Select a device'. Below it, a list of devices is shown in a 'Device selection' pop-up window. The 'Input' table has columns for 'Compound factor', 'Factor', 'Comparison operator', 'Standard value', and 'Duration (minute)'. Each row in the table has a 'Select a factor' button, a comparison operator dropdown, a 'Standard value' dropdown (with 'None' and 'Select a factor' options), and a 'Duration' dropdown (with 'Cancel' and 'Apply' options).



## Type of factor

- Single : only one device & one factor

Factor edit	Single	Device
	<ul style="list-style-type: none"> <li>Single</li> <li>Arithmetic</li> <li>Function</li> </ul>	00.00.00
		<ul style="list-style-type: none"> <li>Outside ter</li> </ul>

- Power
- Current temp.
- Desired temp.
- Outside temp.
- Mode
- Fan speed
- Air flow
- Enable RC

- Arithmetic: two devices are calculated by arithmetic operator

Factor edit	Arithmetic	
	Device 1	Device 2
	00.00.00	00.00.00
	<ul style="list-style-type: none"> <li>Current terr</li> </ul>	<ul style="list-style-type: none"> <li>Current terr</li> </ul>
	Arithmetic operator	
	-	
	+	

- Function: several devices are using as value of function

Factor edit	Function				
Function	Device 1	Device 2	Device 3	Device 4	Device 5
	00.00.00	00.00.01	00.00.02	00.00.03	00.00.04
	<ul style="list-style-type: none"> <li>Averac</li> </ul>	<ul style="list-style-type: none"> <li>Current terr</li> </ul>	<ul style="list-style-type: none"> <li>Current terr</li> </ul>	<ul style="list-style-type: none"> <li>Current terr</li> </ul>	<ul style="list-style-type: none"> <li>Current terr</li> </ul>
	Average				
	<ul style="list-style-type: none"> <li>Current temp.</li> <li>Desired temp.</li> <li>Outside temp.</li> </ul>	<ul style="list-style-type: none"> <li>Current temp.</li> <li>Desired temp.</li> <li>Outside temp.</li> </ul>	<ul style="list-style-type: none"> <li>Current temp.</li> <li>Desired temp.</li> <li>Outside temp.</li> </ul>	<ul style="list-style-type: none"> <li>Current temp.</li> <li>Desired temp.</li> <li>Outside temp.</li> </ul>	<ul style="list-style-type: none"> <li>Current temp.</li> <li>Desired temp.</li> <li>Outside temp.</li> </ul>

## ■ Compound factor, Comparison operator, Standard value, Duration

Compound factor	Factor	Comparison operator	Standard value	Duration (minute)
	00.00.00.Outside temp.	=	<input type="radio"/> <input type="text"/> <input type="radio"/> Select a factor	<input checked="" type="radio"/> Cancel <input type="radio"/> Apply 1
<input type="checkbox"/> AND	Select a factor	=	<input checked="" type="radio"/> None <input type="radio"/> Select a factor	<input checked="" type="radio"/> Cancel <input type="radio"/> Apply 1
<input type="checkbox"/> OR	Select a factor	=	<input checked="" type="radio"/> None <input type="radio"/> Select a factor	<input checked="" type="radio"/> Cancel <input type="radio"/> Apply 1

Comparison operator dropdown menu:  
 =  
 =>  
 =<  
 <  
 >  
 ≠

- Compound factor: AND, OR and no selection  
 ex) if you set 'AND', 'OR' in order, it means (input 1) AND (input2) OR(input3)
- Comparison operator: there are 6 kinds.  
 =, =>, =<, <, >, ≠
- Standard value:
  - The standard value varies depending on left factor  
 ex) left factor: current temp  
 standard value: 29
  - 'Select a factor' must be same with left factor  
 ex) left factor: power  
 Standard value: power
- Duration: form 1minute to 60 minute

Item	Comparison operator	Standard value
Power	=, ≠	On, Off
Current temp	=, =>, =<, <, >, ≠	Number
Desired temp	=, =>, =<, <, >, ≠	Number
Outside temp	=, =>, =<, <, >, ≠	Number
Mode	=, ≠	Auto, Cool, Dry, Fan, Heat
Fan speed	=, ≠	Auto, Low, Med, High
Air flow	=, ≠	Vertical, Horizontal, All, None
Enable RC	=, ≠	ON, OFF, Level1

## Output setting

Factor edit: Single

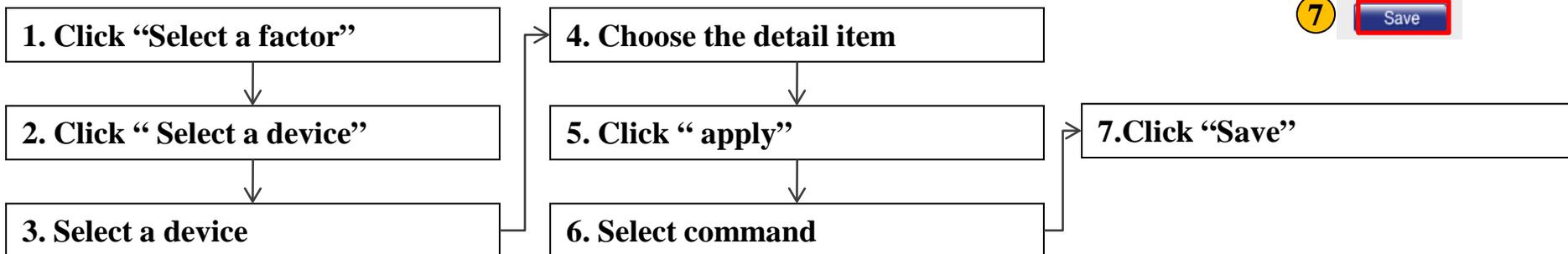
Device: Select a device

Device selection dialog:

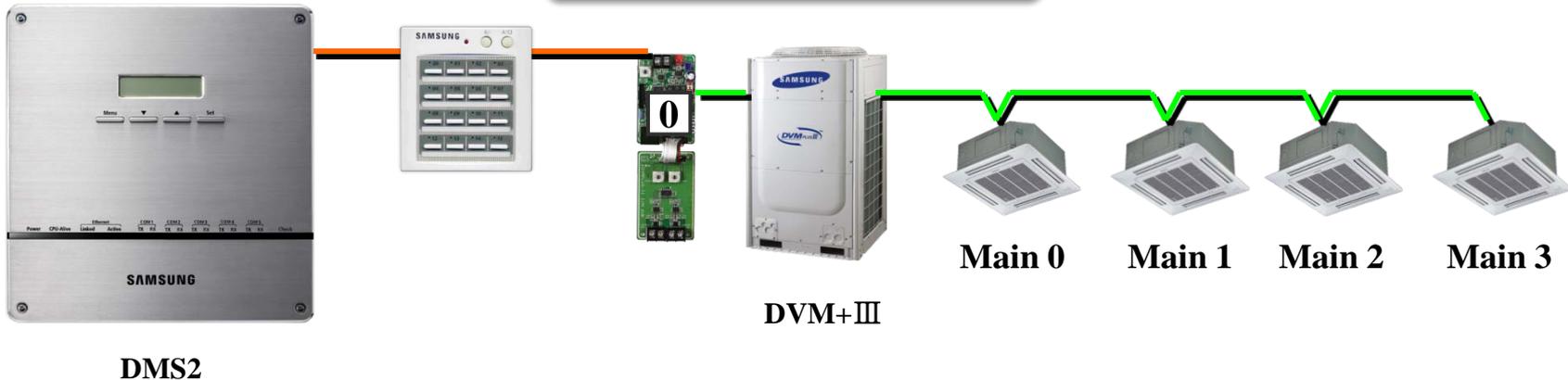
Address	Name
00,00,00	00,00,00
00,00,01	00,00,01
00,00,02	00,00,02
00,00,03	00,00,03
00,00,04	00,00,04

Output table:

Factor	Command
00,00,00.Power	On
Select a factor	None
Select a factor	None



## Control logic example -1



### Requirement

- 1) If the outdoor temperature is higher than 30°C, turn on the indoor unit. – 1<sup>st</sup> control logic
- 2) If the outdoor temperature is lower than 26°C, turn off the indoor unit. – 2<sup>nd</sup> control logic



In this installation, one outdoor unit is connected with 4 indoor unit.  
Therefore, one input condition and 4 output is required per one control logic program.  
Output has only one factor. There are two control logic program (Power On and Off)

Name	PowerOn_Temp30	<b>1<sup>st</sup> Control logic</b>	
Period	2010 3 23 - 2011 3 23		
Day	<input type="checkbox"/> Sun <input checked="" type="checkbox"/> Mon <input checked="" type="checkbox"/> Tue <input checked="" type="checkbox"/> Wed <input checked="" type="checkbox"/> Thu <input checked="" type="checkbox"/> Fri <input type="checkbox"/> Sat <input type="checkbox"/> Daily		
Time	8 : 0 - 18 : 0		

Input				
Compound factor	Factor	Comparison operator	Standard value	Duration (minute)
<input type="checkbox"/>	00.00.00.Outdoor temp.	=>	30	5
<input type="checkbox"/> AND	Select a factor	=	None	1
<input type="checkbox"/> AND	Select a factor	=	None	1

Output		
	Factor	Command
<input checked="" type="checkbox"/>	00.00.00.Power	On
<input checked="" type="checkbox"/>	00.00.01.Power	On
<input checked="" type="checkbox"/>	00.00.02.Power	On
<input checked="" type="checkbox"/>	00.00.03.Power	On

1. Outside temperature is higher than 30°C
2. This condition is keeping during 5 minute
3. Power on 4 indoor units

## 2<sup>nd</sup> Control logic

Name	PwoerOff_Temp25
Period	2010 3 23 - 2011 3 23
Day	<input type="checkbox"/> Sun <input checked="" type="checkbox"/> Mon <input checked="" type="checkbox"/> Tue <input checked="" type="checkbox"/> Wed <input checked="" type="checkbox"/> Thu <input checked="" type="checkbox"/> Fri <input type="checkbox"/> Sat <input type="checkbox"/> Daily
Time	8 : 0 - 18 : 0

Input				
Compound factor	Factor	Comparison operator	Standard value	Duration (minute)
	<b>1</b> 00,00,00,Outdoor temp.	=<	26	<input checked="" type="radio"/> Cancel <input type="radio"/> Apply 1
<input type="checkbox"/> AND	Select a factor	=	None	<input checked="" type="radio"/> Cancel <input type="radio"/> Apply 1
<input type="checkbox"/> AND	Select a factor	=	None	<input checked="" type="radio"/> Cancel <input type="radio"/> Apply 1

Output	
Factor	Command
<input checked="" type="checkbox"/> 00,00,00,Power	<input checked="" type="radio"/> Off <input type="radio"/> Select a factor
<input checked="" type="checkbox"/> 00,00,01,Power	<input checked="" type="radio"/> Off <input type="radio"/> Select a factor
<input checked="" type="checkbox"/> 00,00,02,Power	<input checked="" type="radio"/> Off <input type="radio"/> Select a factor
<input checked="" type="checkbox"/> 00,00,03,Power	<input checked="" type="radio"/> Off <input type="radio"/> Select a factor

1. Outside temperature is lower than 26°C
2. Power off 4 indoor units

## Registered control logic

Setting control logic

① Click

<input type="checkbox"/>	No.	Name	Period	Days	Time	Apply	Run
<input type="checkbox"/>	1	PowerOn_Temp30	2010-03-23 ~ 2011-03-23	Mon Tue Wed Thu Fri	08:00 ~ 18:00	No	No
<input type="checkbox"/>	2	PwoerOff_Temp25	2010-03-23 ~ 2011-03-23	Mon Tue Wed Thu Fri	08:00 ~ 18:00	No	No

Register Edit Delete Copy Apply Not apply

② Click



## Apply control logic

Setting control logic

<input type="checkbox"/>	No.	Name	Period	Days	Time	Apply	Run
<input type="checkbox"/>	1	PowerOn_Temp30	2010-03-23 ~ 2011-03-23	Mon Tue Wed Thu Fri	08:00 ~ 18:00	Yes	No
<input type="checkbox"/>	2	PwoerOff_Temp25	2010-03-23 ~ 2011-03-23	Mon Tue Wed Thu Fri	08:00 ~ 18:00	Yes	No

Register Edit Delete Copy Apply Not apply

2 control logic is applied !

Control logic management > Checking control history

Checking control history

2010 3 24 Search

Logic name	Occurrence time	Controlling subject	Control type
PowerOn_Temp30	2010.03.24 12:56:10	DMS internal features	Control Logic control
PowerOn_Temp30	2010.03.24 12:56:50	DMS internal features	Control Logic control
Control item - Power : On Control device 00,00,00(00,00,00), 00,00,01(00,00,01), 00,00,02(00,00,02), 00,00,03(00,00,03)			
PwoerOff_Temp25	2010.03.24 15:01:40	DMS internal features	Control Logic control
Control item - Power : Off Control device 00,00,00(00,00,00), 00,00,01(00,00,01), 00,00,02(00,00,02), 00,00,03(00,00,03)			

\* Click the row for detailed information.

- **DMS2 saves the information of operation history 180 days. However, it varies depending on storage space of DMS2**



System Settings > Data backup & restoration

### Data backup & restoration

DMS DATA BACKUP	DMS DATA RESTORATION
<p>PC backup</p> <p>SD card backup</p>	<p>Pass <input type="password"/></p> <p>OK</p> <p>*To enable this feature, you must provide the admin password.</p>

- **Depending on the size of the data, backup time may vary.**  
It will usually take few seconds.
- **Backup data includes DB data, setting data, data related indoor/outdoor unit control and various kinds of history data. They will be back up in single unified file.**
- **You can't use files bigger than 100M bytes for restoration file.**
- **Restoration should be carefully executed because existing data will be delete.**

## PC backup

Backup file is ready:  
click "OK" to download.

1

파일 다운로드

이 파일을 열거나 저장하시겠습니까?

이름: dmsdata20100324.dms  
형식: myDMS File  
출처: 192.168.0.100

2

Click "Save"

일부 파일은 사용자의 컴퓨터에 피해를 줄 수 있습니다. 파일 정보가 의심스럽거나 원문을 신뢰할 수 없으면 이 파일을 열거나 저장하지 마십시오. [위험성](#)

다른 이름으로 저장

저장 위치(O): 바탕 화면

내 최근 문서  
내 문서  
내 컴퓨터  
내 네트워크 환경

3

Click "Save"

파일 이름(N): dmsdata20100324  
파일 형식(T): myDMS File

다운로드 완료

다운로드 완료

저장됨:  
dmsdata20100324.dms(192.168.0.100)

다운로드: 150KB (1초)  
다운로드 위치: C:\Documents and Settings\user\Documents\dmsdata20100324.dms  
전송 속도: 150KB/초

4

Click "Close"

다운로드가 완료되면 대화 상자를 닫음(C)

## SD card backup

- 1 Insert the SD card in DMS2
- 2 Click "SD card backup"

DMS2 data backup completed.  
The created file name is as follows:  
dmsdata20100324.dms

3

If SD card is already inserted, automatic backup function will be operated and everyday data will be backup in SD card

**DMS DATA RESTORATION**

**1 Type the administrator password**

Pass

OK

※To enable this feature,  
you must provide the admin password.

**Caution!**

1. Backup the current DMS data in advance.
2. You must be familiar with the DMS recovery.
3. Do not turn off the DMS power or remove the Ethernet cable while recovering the DMS data.

**2** OK

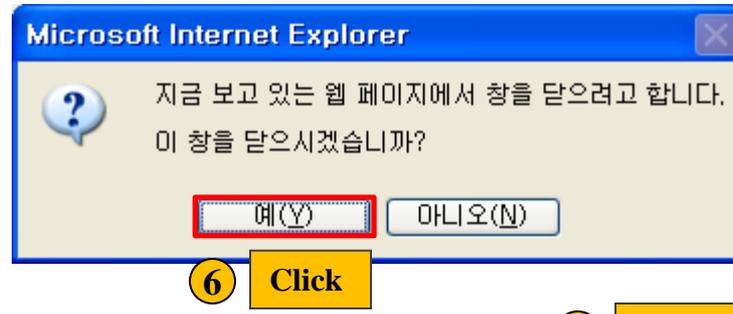
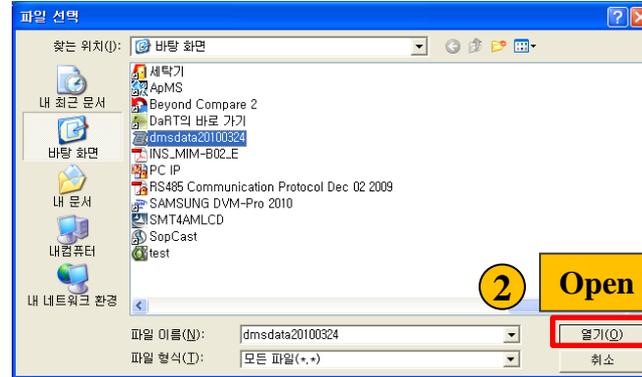
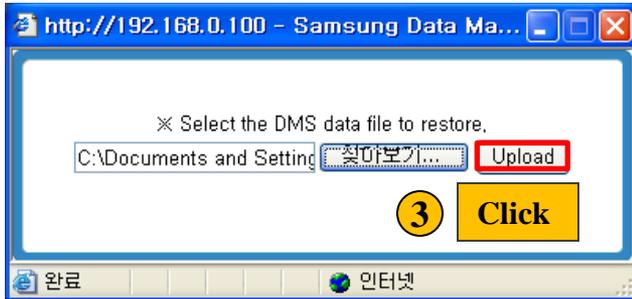
**DMS DATA RESTORATION**

**3 Select the restoration type**

PC restore

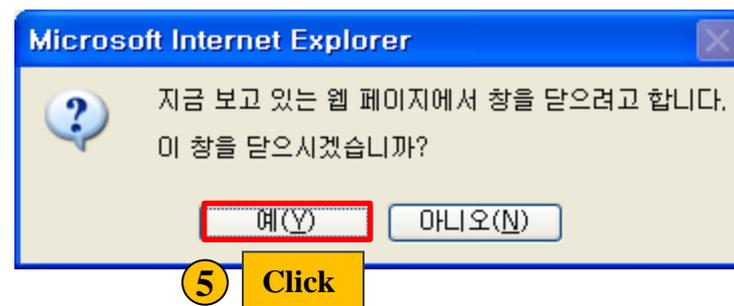
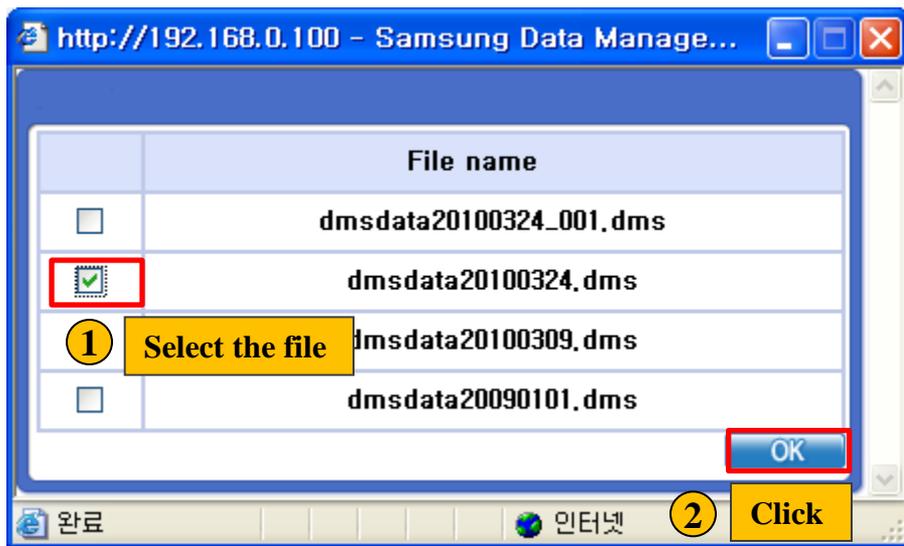
SD card restore

## PC restore



7 Restart DMS2

## SD card restore



6 Restart DMS2

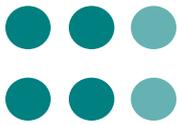
System Settings > Event history management

1. DMS2 power related event
2. Schedule setting related event
3. Tracking related event
4. User information modification related event
5. System setting related event
6. Operation using external interface related event

23 - 2010 3 24 Search			
		Setting subject	Event type
	12:48:12	WEB	Control logic
	12:48:03	WEB	Control logic
19	2010-03-23 12:45:12	WEB	Control logic
20	2010-03-23 12:26:38	WEB	Schedule
21	2010-03-23 12:25:38	LCD Button	System configuration
22	2010-03-23 09:26:13	WEB	Tracking
Tracking succeeded. Number of indoor units:8 Number of outdoor units:1			
23	2010-03-23 09:24:50	WEB	Control logic
24	2010-03-23 09:24:37	User	Tracking

※ Click the row for detailed information.

◀ ◁ 1 2 3 4 ▷ ▶



# Power distribution

## 1. Power distribution theory

- Device of power consumption
- Equation of power consumption
- Installation example

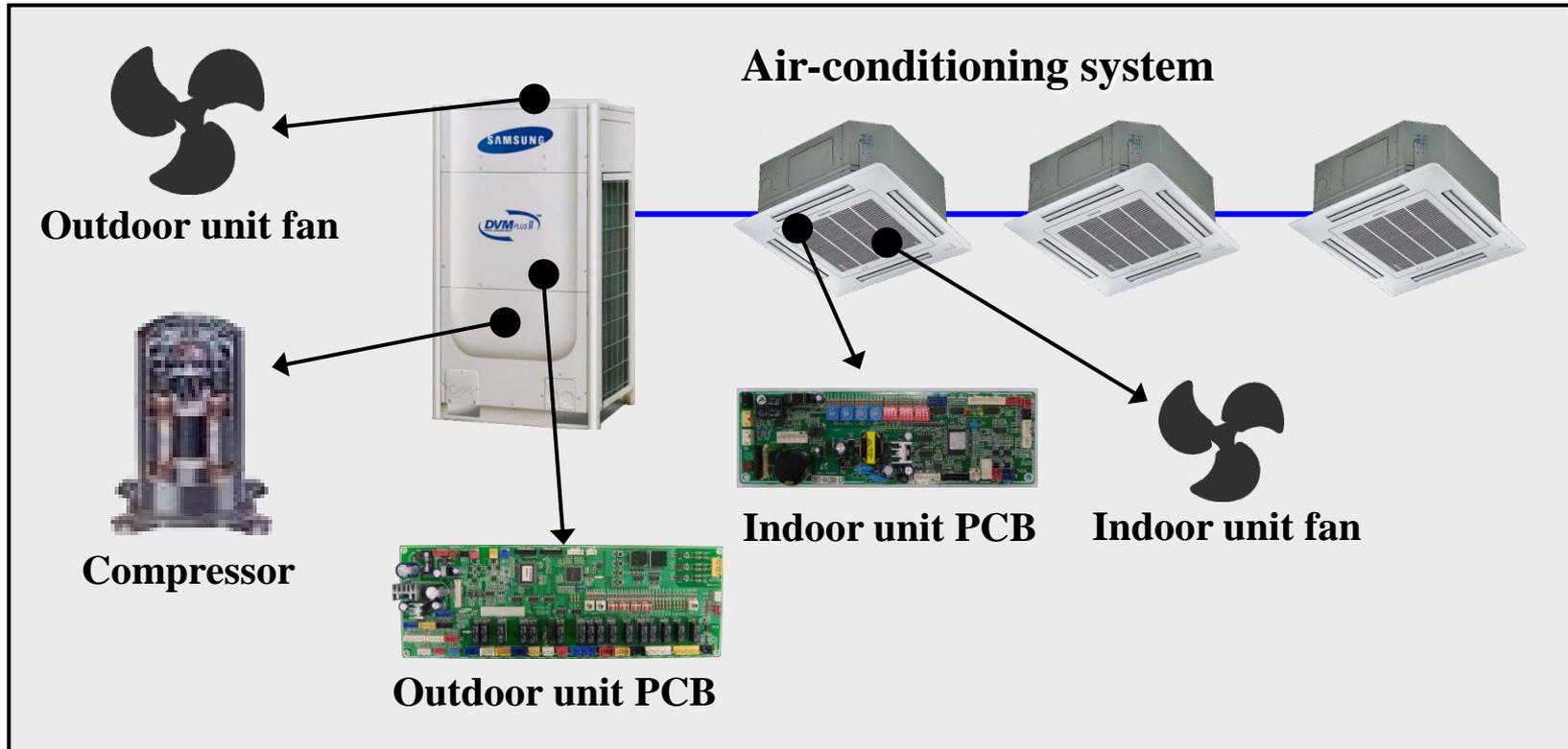
## 2. Power distribution Setting & Result

- SiM channel
- Setting in DMS2
- Power distribution result

## 3. Power distribution error

- DMS2 power error
- Communication error

## Where does power consumption occur ?

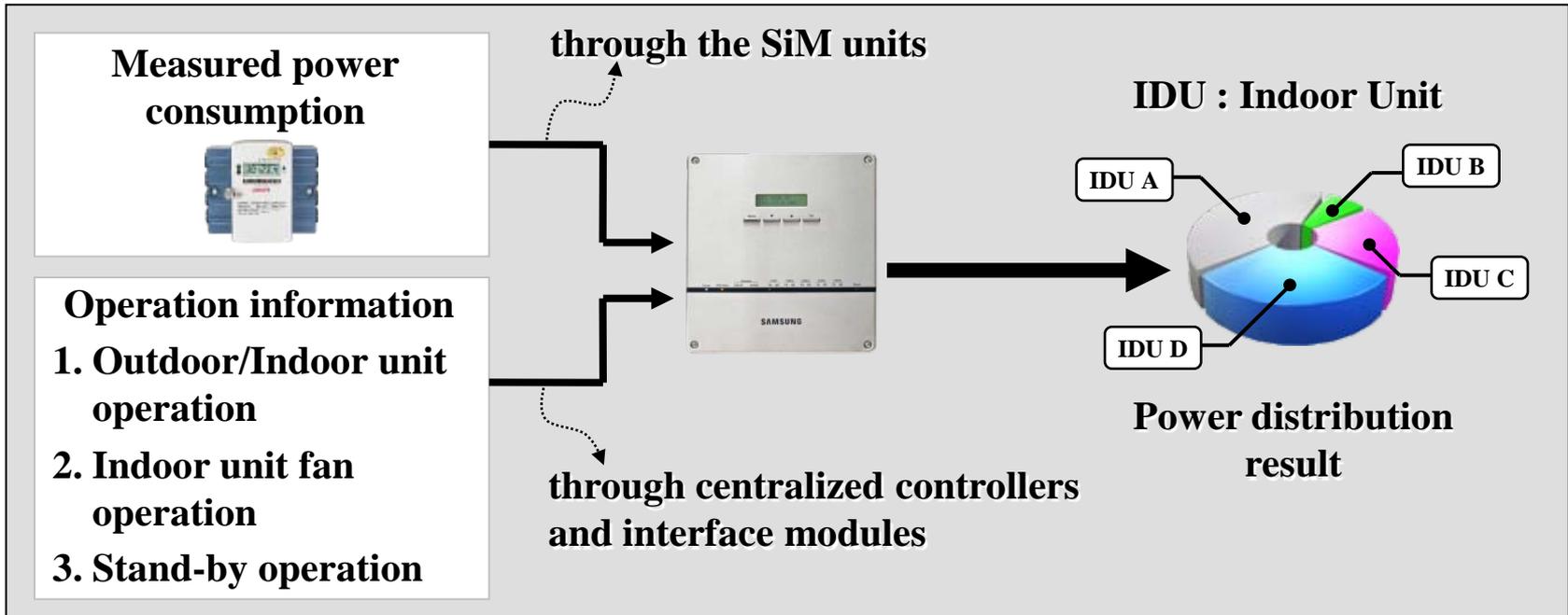


System power consumption includes :

1. Main Power - Compressor operation
2. Fan Power - Indoor/Outdoor unit fan operation
3. Stand-by Power - Preheating coil, Indoor/Outdoor PCB

## DMS Power Distribution Theory

All the system information of power and indoor/outdoor operation is always monitored by the DMS for power distribution calculation



$$\text{IDU A's electric power consumption} = \text{Total power consumption} \times \frac{\text{Demand capacity of IDU A}}{\text{Total demand capacity of all IDUs}}$$

Here, Demand capacity = Main capacity + Fan capacity + Stand-by capacity

## **Main capacity**

Expressed as compressor operation power. It varies depending on the difference between the set temperature and room temperature.

## **Fan capacity**

Fan operation power. It differs from the indoor unit type.

## **Stand-by capacity**

Power consumption when the system is in the Stop mode.

Indoor/Outdoor unit PCBs and pre-heating coil surrounding the compressor

## **What if the room temperature begins to reach the set temperature ?**

The indoor unit needs less refrigerant and also sends less Main capacity.

The smaller temperature difference changes, the smaller capacity and power is required.

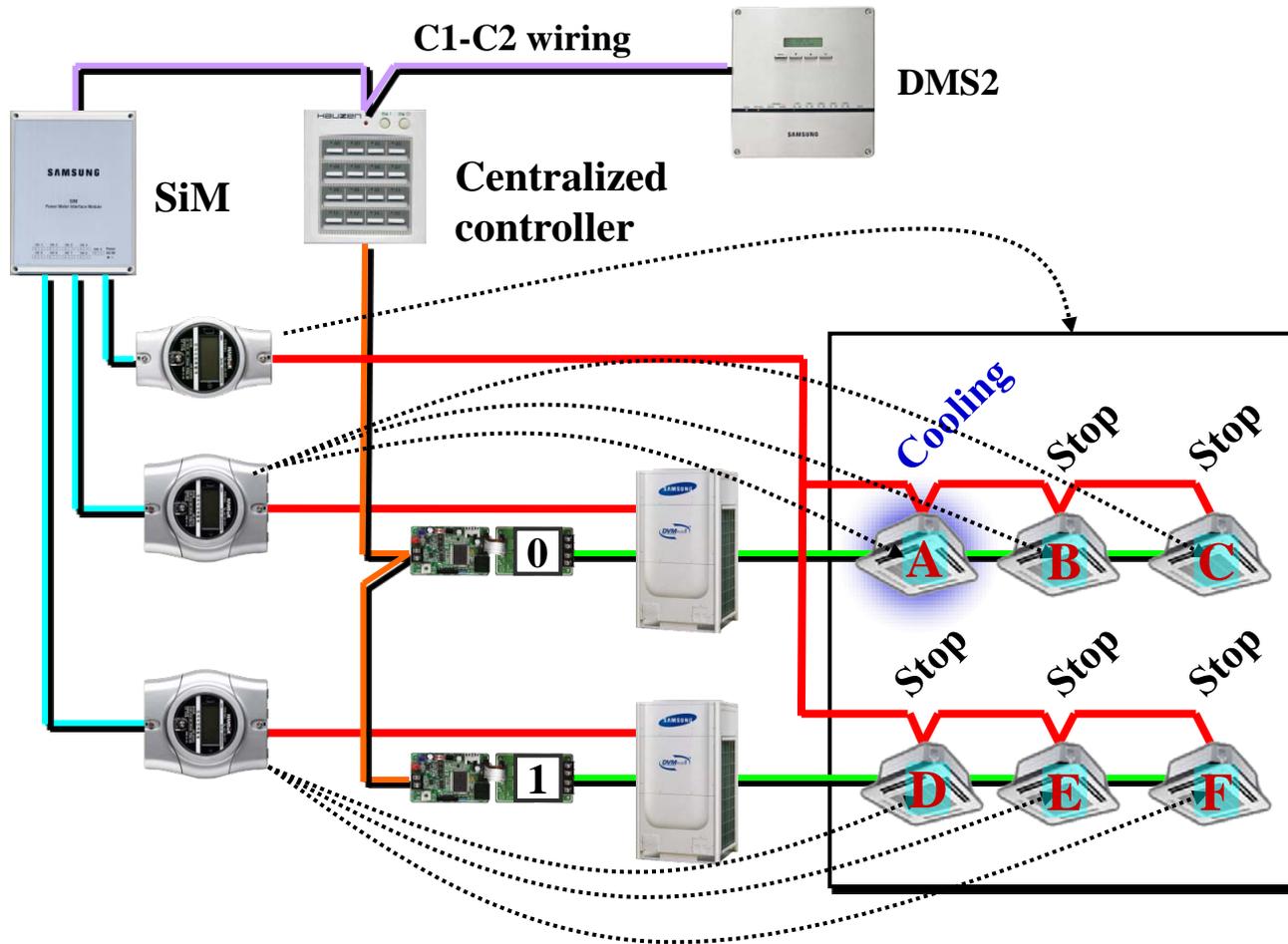
## **When the room temperature has reached the set temperature,**

There is no need to pump the refrigerant into the indoor unit.

Indoor unit goes into the thermally OFF state and sends capacity of zero value, which results in fan or stand-by power distribution only.

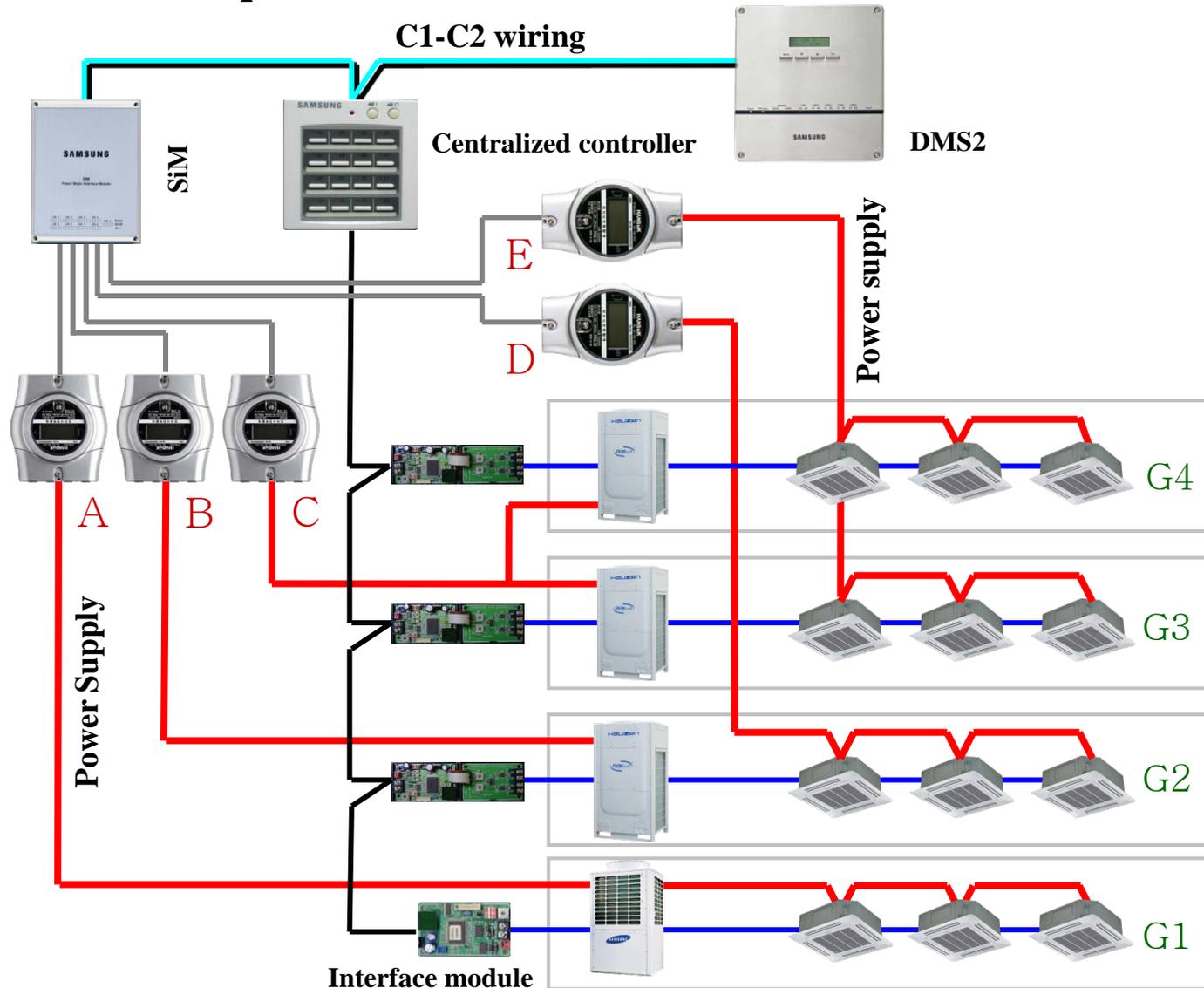


## Not equal stand-by power consumption



**Power distribution :  $B = C, D = E = F$   
But B might be not equal to D due to ratio calculation.**

## Power distribution equation



$$\text{Indoor unit power X in G1} = \text{Watt-hour A} \times \frac{\text{Main + Fan + Stand-by capacity of indoor unit X}}{\text{Total capacity of G1}}$$

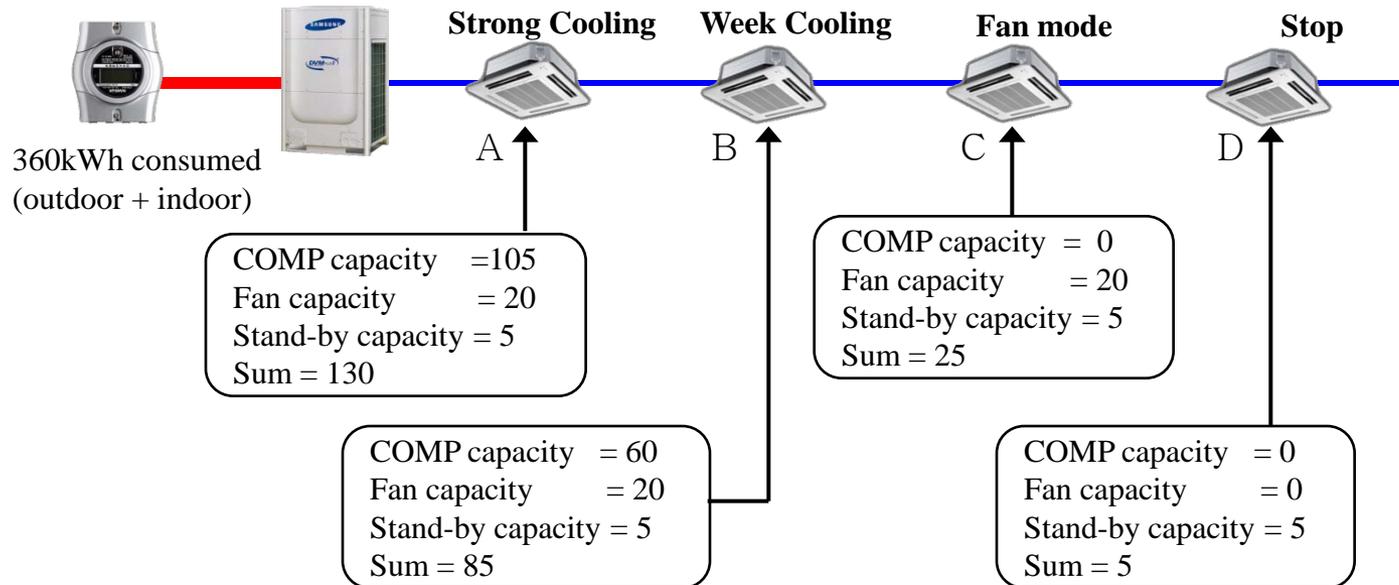
$$\begin{aligned} \text{Indoor unit power X in G2} &= \text{Watt-hour B} \times \frac{\text{Main + Fan + Stand-by capacity of indoor unit X}}{\text{Total capacity of G2}} \\ &+ \text{Watt-hour D} \times \frac{\text{FAN + Stand-by capacity of indoor unit X}}{\text{Total FAN/Stand-by capacity of G2}} \end{aligned}$$

$$\begin{aligned} \text{Indoor unit power x in G3+G4} &= \text{Watt-hour C} \times \frac{\text{Main + Fan + Stand-by capacity of indoor unit X}}{\text{Total capacity of G3+G4}} \\ &+ \text{Watt-hour E} \times \frac{\text{FAN + Stand-by capacity of indoor unit X}}{\text{Total FAN/Stand-by capacity of G3+G4}} \end{aligned}$$

**Warning :** Correct watt-hour assignment is a must.

## Example-1

Suppose capacity values accumulated at 24:00 during one whole day is as follows.



$$\text{Pd of Indoor unit A} = \frac{\text{Indoor unit capacity}}{\text{Total capacity}} \times \text{Total kWh} = \frac{130 \times 360}{130 + 85 + 25 + 5} = 192.020 \text{ kWh}$$

$$\text{Pd of Indoor unit B} = \frac{85 \times 360}{130 + 85 + 25 + 5} = 124.900 \text{ kWh}$$

$$\text{Pd of Indoor unit C} = \frac{25 \times 360}{130 + 85 + 25 + 5} = 36.735 \text{ kWh}$$

$$\text{Pd of Indoor unit D} = \frac{5 \times 360}{130 + 85 + 25 + 5} = 7.347 \text{ kWh}$$

### **Why does power consumption occur although the customer didn't use Air conditioner ?**

That is due to stand-by power.

All home appliances have stand-by power.

For example, power consumption occurs when the power code of TV is only plug-in although the user don't use the TV.

Likewise, air conditioner has stand-by power because indoor unit PCB and outdoor unit PCB consume the power when the units are only plug-in.

Each stand-by power of home appliances is different.

The customer can't see the stand-by power consumption of other home appliance .

So it seems that only samsung air conditioner consume the power because power consumption data is displayed in SNET3

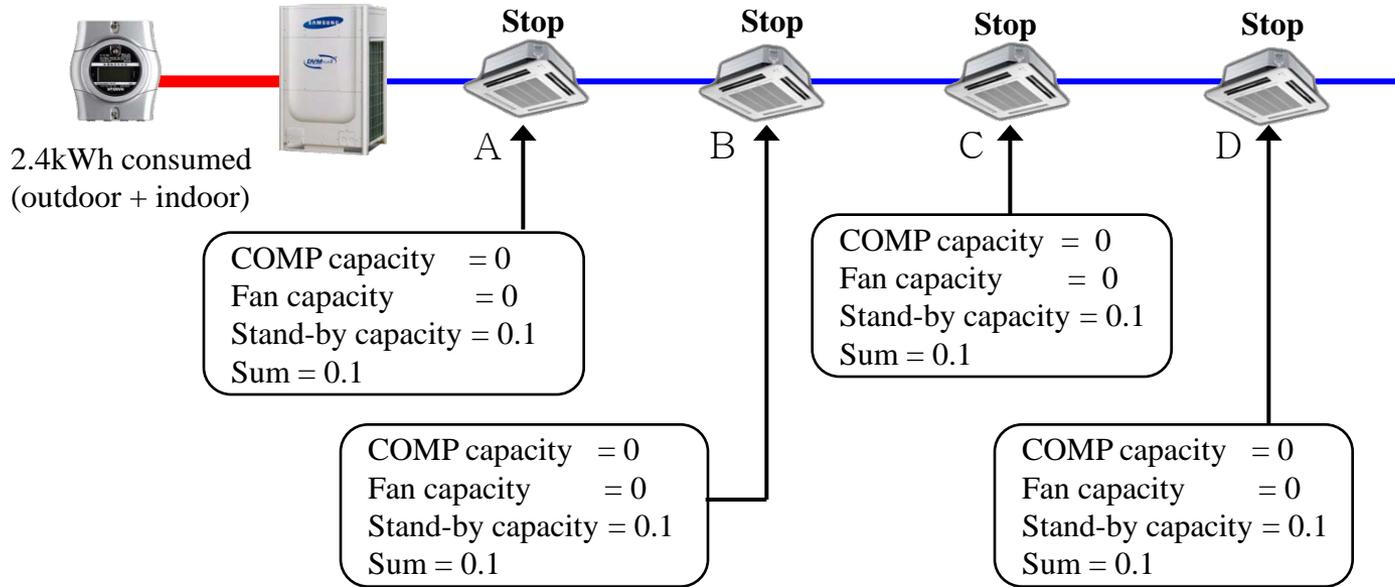
The outdoor unit is public facility like a elevator.

Therefore all tenant should pay for stand-by power consumption although the customer didn't use indoor unit.

Power consumption is different according to operation status.

## Example-2

Suppose capacity values accumulated at 24:00 during one whole day is as follows.



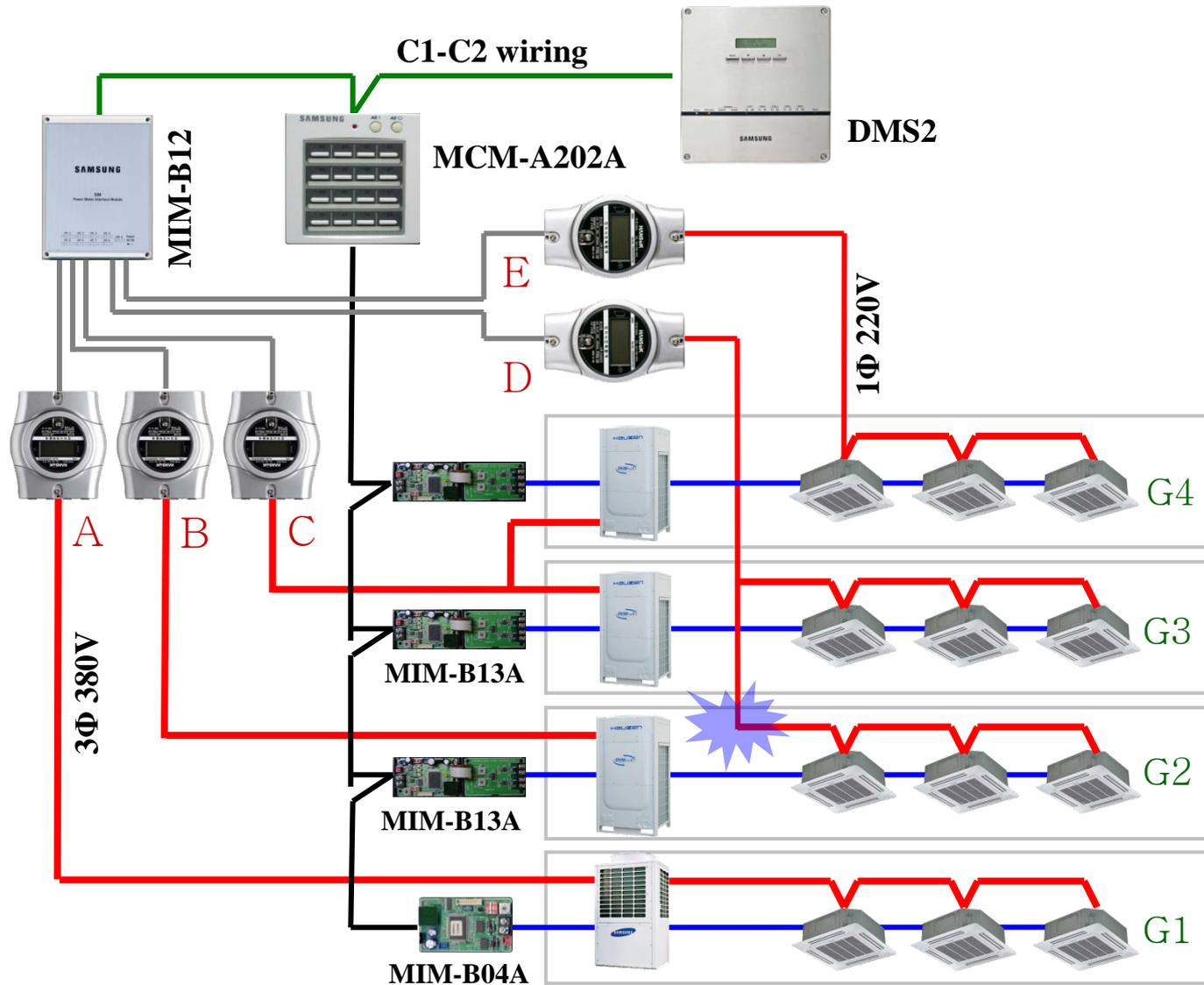
$$\text{Pd of Indoor unit A} = \frac{\text{Indoor unit capacity}}{\text{Total capacity}} \times \text{Total kWh} = \frac{0.1 \times 2.4}{0.1 + 0.1 + 0.1 + 0.1} = 0.6 \text{ kWh}$$

$$\text{Pd of Indoor unit B} = \frac{0.1 \times 2.4}{0.1 + 0.1 + 0.1 + 0.1} = 0.6 \text{ kWh}$$

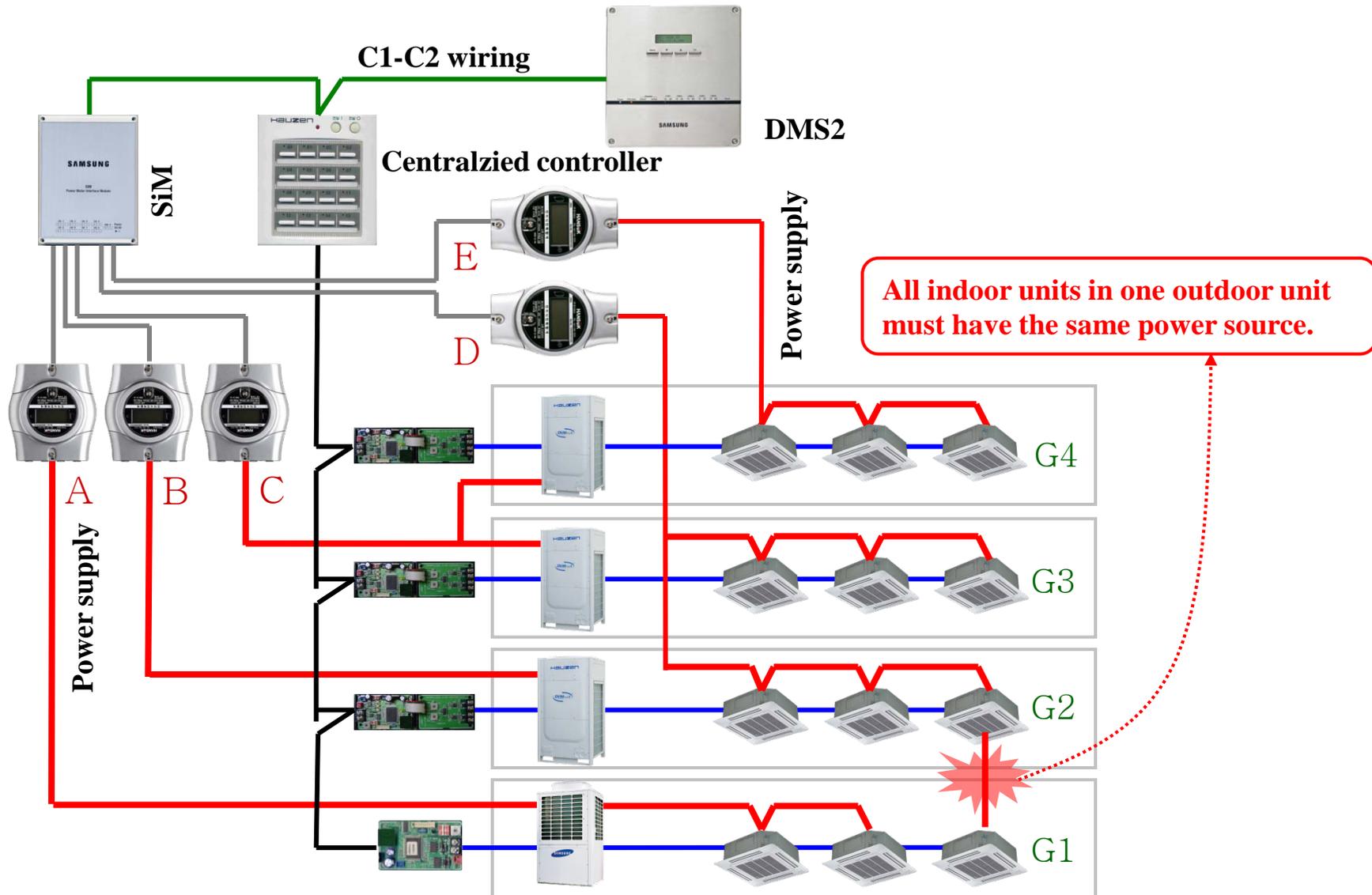
$$\text{Pd of Indoor unit C} = \frac{0.1 \times 2.4}{0.1 + 0.1 + 0.1 + 0.1} = 0.6 \text{ kWh}$$

$$\text{Pd of Indoor unit D} = \frac{0.1 \times 2.4}{0.1 + 0.1 + 0.1 + 0.1} = 0.6 \text{ kWh}$$

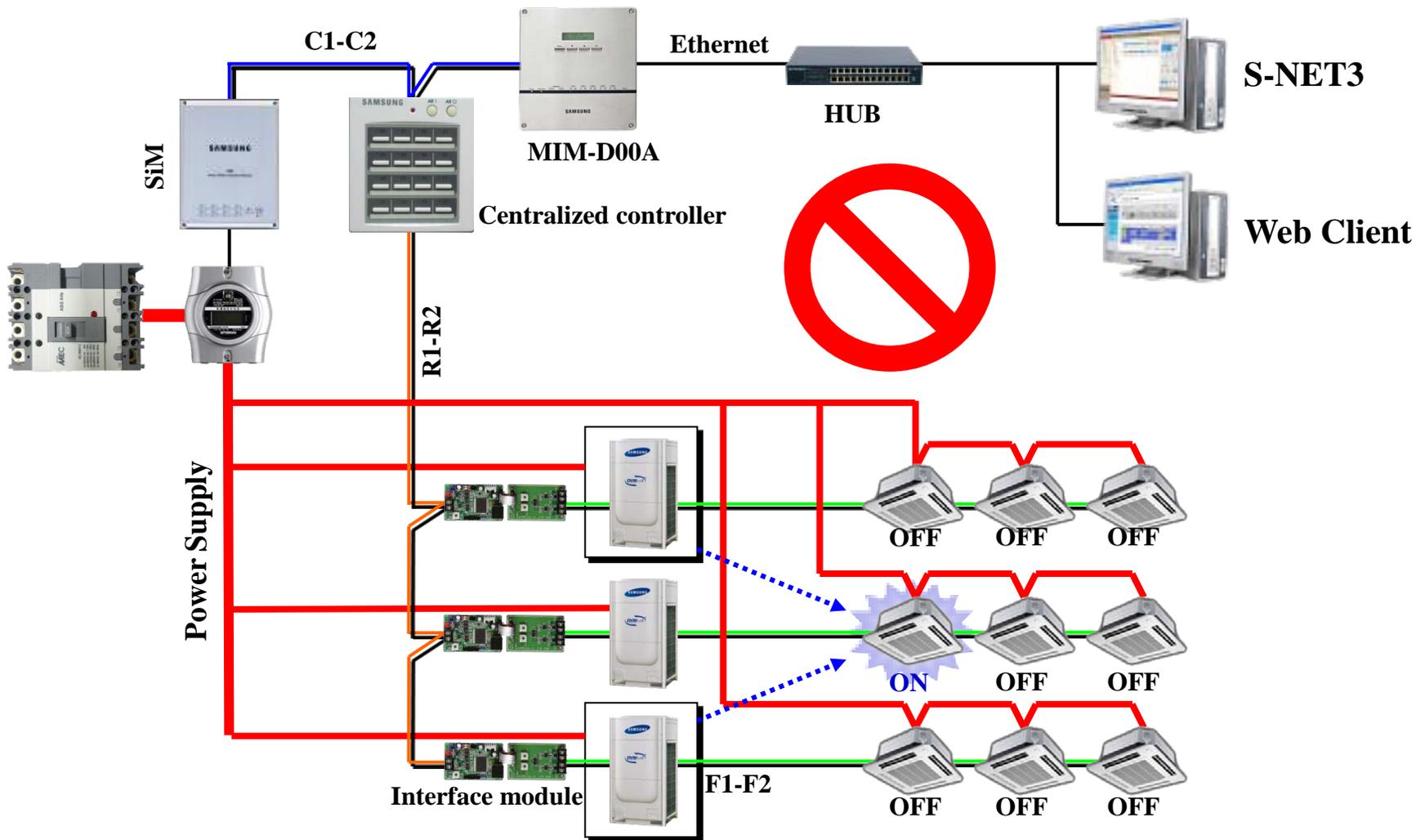
## Installation example (Allowed)



## Installation example (Not allowed)



## Power distribution with one WHM (Not allowed)



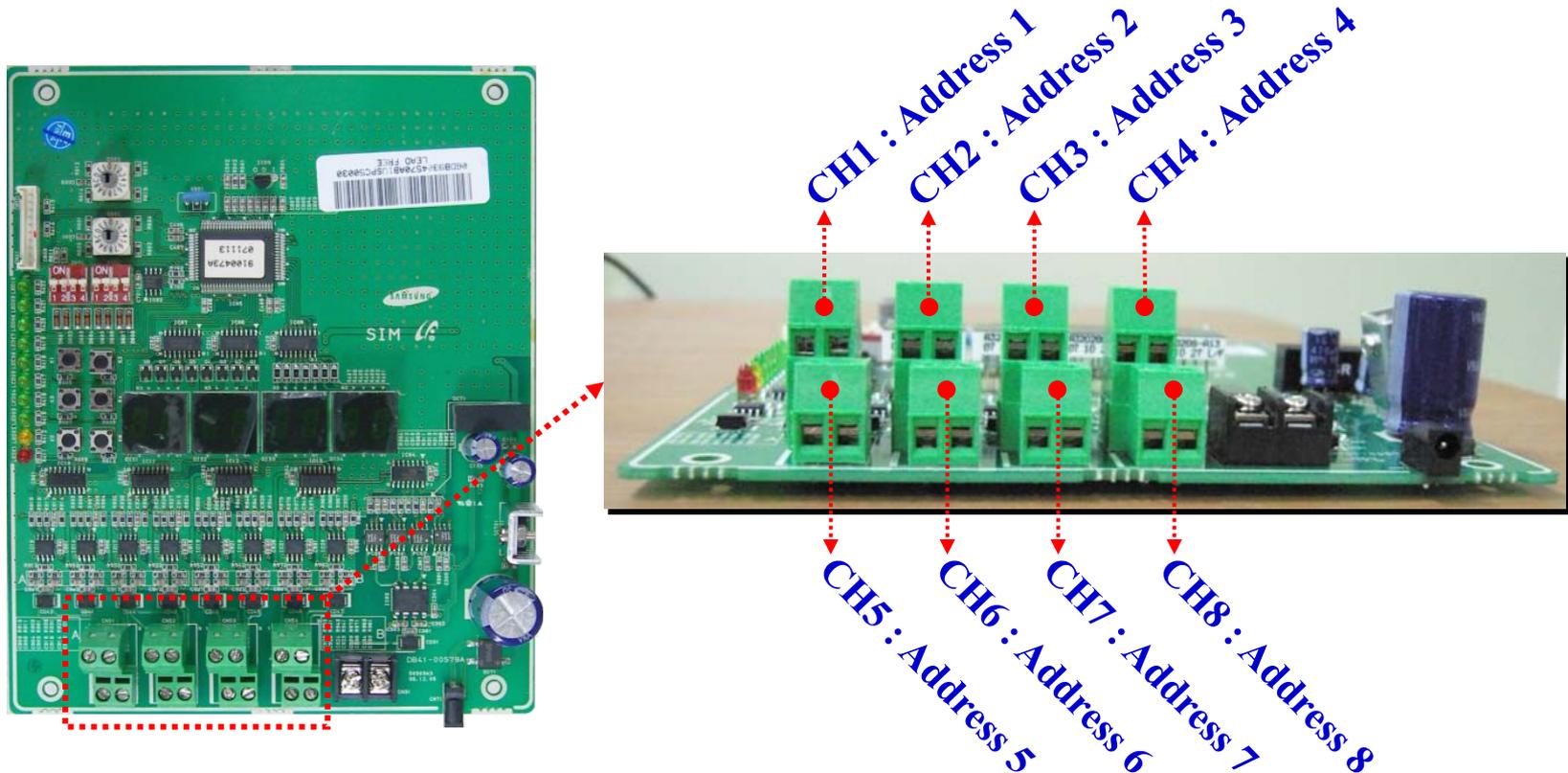
All pre-heater power consumption is delivered to the operating indoor unit !!!

Menu	Sub menu	Description
<b>EHP Power Consumption Inspection</b>	• <b>Check inspection result</b>	-Power consumption -Proportion -Individual indoor unit by date
	• <b>Setting the inspection section</b>	Power meter reading section setting
	• <b>Setting and checking watt-hour meter</b>	SiM channel setting
	• <b>Setting and checking virtual channel</b>	Virtual channel setting
	• <b>Channel setting by indoor unit</b>	SiM/Virtual channel setting
	• <b>Checking indoor unit operation time</b>	Operation/Thermo on time search -All indoor units by period -Individual indoor unit by date

- STEP1**   ▪ Power distribution wiring
- STEP2**   ▪ Setting the SiM channel or virtual channel
- STEP3**   ▪ Channel setting by indoor unit
- STEP4**   ▪ Check inspection result  
              ▪ Checking indoor unit operation time

## WHM interface module (SiM)

WHM address is assigned to constant value for each terminal of SiM interface like below. SiM address can be set from 0 to 7. DMS2 recognizes SiM of which address is added by 8 to differentiate it from those of centralized controllers.



## WHM interface module (SiM)

If SiM address is set to 1 and one WHM is connected to CH2, DMS2 then recognizes the WHM address as 17.2 after completing tracking process.

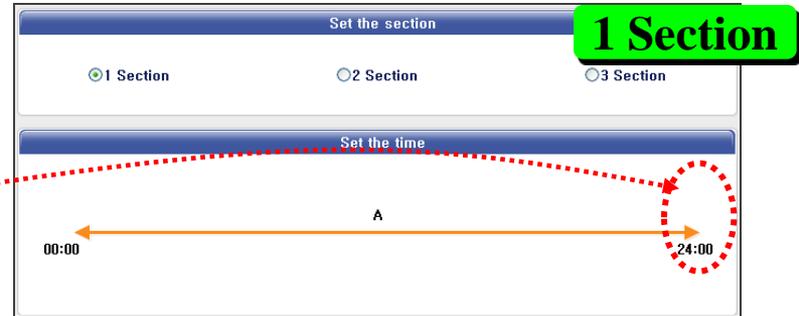
**WHM address assignment table**



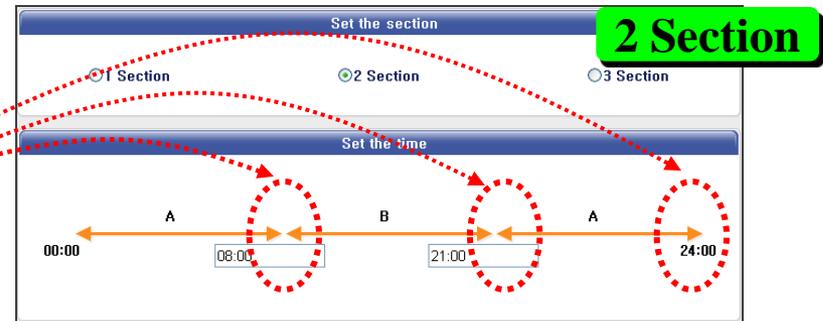
SiM address	SiM Channel							
	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
0	16.01	16.02	16.03	16.04	16.05	16.06	16.07	16.08
1	17.01	17.02	17.03	17.04	17.05	17.06	17.07	17.08
2	18.01	18.02	18.03	18.04	18.05	18.06	18.07	18.08
3	19.01	19.02	19.03	19.04	19.05	19.06	19.07	19.08
4	20.01	20.02	20.03	20.04	20.05	20.06	20.07	20.08
5	21.01	21.02	21.03	21.04	21.05	21.06	21.07	21.08
6	22.01	22.02	22.03	22.04	22.05	22.06	22.07	22.08
7	23.01	23.02	23.03	23.04	23.05	23.06	23.07	23.08
8~15	Not recognized							

## EHP Power Consumption Inspection > Setting the inspection section

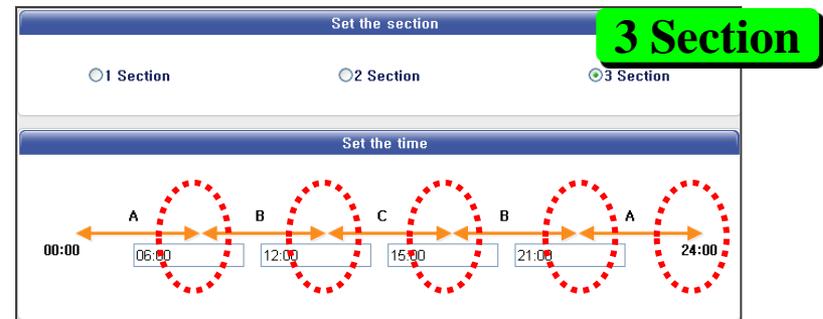
**Time reference - 00:00**



**Time reference**



**Time reference**



Query on DMS web : Power distribution result based on Section 1

Query on S-NET3 : Power distribution result based on time sections



EHP Power Consumption Inspection > Setting and checking watt-hour meter

Setting and checking watt-hour meter Kilowatthour history

SIM Channel	Name	CT proportion	Watt-hour meter value (kWh)
16.1	<input type="text" value="16.1"/>	<input type="text" value="1"/>	0.0
16.2	<input type="text" value="16.2"/>	<input type="text" value="1"/>	0.0
16.3	<input type="text" value="16.3"/>	<input type="text" value="1"/>	0.0
16.4	<input type="text" value="16.4"/>	<input type="text" value="1"/>	0.0
16.5	<input type="text" value="16.5"/>	<input type="text" value="1"/>	0.0
16.6	<input type="text" value="16.6"/>	<input type="text" value="1"/>	0.0
16.7	<input type="text" value="16.7"/>	<input type="text" value="1"/>	0.0
16.8	<input type="text" value="16.8"/>	<input type="text" value="1"/>	0.0

- Set name and CT proportion (Default:1, Range: 1~5000)
- When using CT watt-hour meter, be careful that there can be difference with actual power consumption as much as CT ratio error
- Watt-hour meter value shows actual value of currently connected watt-hour meter.

Setting and checking watt-hour meter Kilowatthour history

SIM Channel	Name	CT proportion	Watt-hour meter value (kWh)
16.1	16.1	1	0.0
16.2	16.2	1	0.0
16.3	16.3	1	0.0
16.4	16.4	1	0.0
16.5	16.5	1	0.0
			0.0
			0.0
			0.0
			0.0

SIM Address  Kilowatthour setting & inquiry

~

Date	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8
2010-03-23								
2010-03-24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010-03-25	0.0	80000.0	400.0	5.0	0.0	10000.0	0.0	0.0

- Enter year/month/day in order
- If you click “Check”, watt-hour meter value of set period will be displayed
- Base on DMS2 time, you can check up to 365 day of watt-hour meter value



## EHP Power Consumption Inspection > Setting and checking virtual channel

### Setting and checking virtual channel

Virtual Channel	Name
24.1	24.1
24.2	24.2
24.3	24.3
24.4	24.4
24.5	24.5
31.11	31.11
31.12	31.12
31.13	31.13
31.14	31.14
31.15	31.15
31.16	31.16

- Maximum 128 virtual channel can be set.
- Virtual channel is written (24~31).(1~16) format address

# Power distribution Setting & Result

## EHP Power Consumption Inspection > Channel setting by indoor unit

This setting is the most important and attention-requiring task to make reasonable power distribution on the basis that consumed power in one indoor/outdoor system is distributed to all indoor units in that boundary.

Channel setting by indoor unit					
Indoor unit address	Indoor unit name	Outdoor unit SIM channel	Indoor unit SIM channel	Outdoor unit virtual channel	Indoor unit virtual channel
00,00,00	00,00,00	16.1			
00,00,01	00,00,01	16.1			
00,00,02	00,00,02	16.1			
00,01,00	00,01,00	16.2			
00,01,01	00,01,01	16.2			
00,01,02	00,01,02	16.2			

Indoor unit address  
Ex) 00.00.00

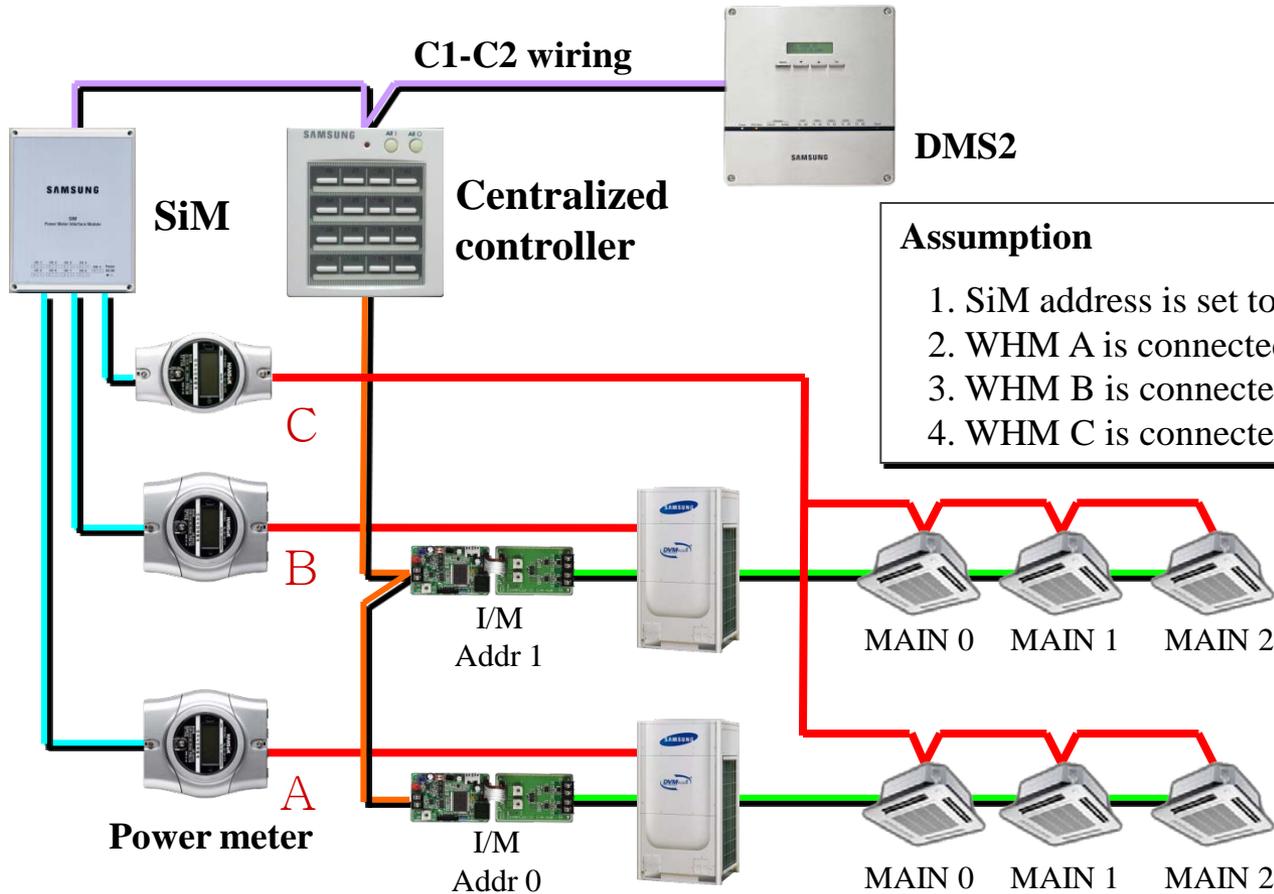
- Indoor unit MAIN address
- Interface module address
- Centralized controller address

Power meter address for outdoor unit power supply

Power meter address for indoor unit power supply

Virtual power meter address

## Channel setting example



**Assumption**

1. SiM address is set to 0.
2. WHM A is connected to Channel 1 of the SiM.
3. WHM B is connected to Channel 2 of the SiM.
4. WHM C is connected to Channel 3 of the SiM.

Power meter A connected for Group G1

Channel setting by indoor unit					
Indoor unit address	Indoor unit name	Outdoor unit SIM channel	Indoor unit SIM channel	Outdoor unit virtual channel	Indoor unit virtual channel
00,00,00	00,00,00	16.1	16.3		
00,00,01	00,00,01	16.1	16.3		
00,00,02	00,00,02	16.1	16.3		
00,01,00	00,01,00	16.2	16.3		
00,01,01	00,01,01	16.2	16.3		
00,01,02	00,01,02	16.2	16.3		

Power meter B connected for Group G2

Since there is power meter C for indoor units, WHM address 16.3 must be assigned to all the indoor units.

# Power distribution Setting & Result

## EHP Power Consumption Inspection > Check inspection result

2010 3 27 ~ 2010 3 30

Power consumption  Proportion  Individual indoor unit by date

2010-3-27 ~ 2010-3-30 **Power consumption**

Indoor unit address	Indoor unit name	Used power consumption (kWh)
00.00.00	00.00.00	12.903
00.00.01	00.00.01	13.122
00.00.02	00.00.02	13.122
00.01.00	00.01.00	13.665
00.01.01	00.01.01	13.665
00.01.02	00.01.02	12.527
Total power consumption (kWh)		79.004

Select period

Each indoor unit power consumption for this period

Total power consumption

### Check inspection result

2010-3-27 ~ 2010-3-30

Indoor unit address	Indoor unit name	Used power consumption (kWh)
00.00.00	00.00.00	12.903
00.00.01	00.00.01	13.122
00.00.02	00.00.02	13.122
00.01.00	00.01.00	13.665
00.01.01	00.01.01	13.665
00.01.02	00.01.02	12.527

▪ Base on DMS2 time, you can check up to 365 day of watt-hour meter value

Excel data

## EHP Power Consumption Inspection > Check inspection result

2010 3 27 ~ 2010 3 30

Power consumption
  **Proportion**
 Individual indoor unit by date

2010-3-27 ~ 2010-3-30

Indoor unit address	Indoor unit name	Proportion (%)
00.00.00	00.00.00	16.332
00.00.01	00.00.01	16.609
00.00.02	00.00.02	16.609
00.01.00	00.01.00	17.296
00.01.01	00.01.01	17.296
00.01.02	00.01.02	15.856

Proportion data for each indoor unit

Check inspection result

2010-3-27 ~ 2010-3-30

Indoor unit address	Indoor unit name	Proportion (%)
00.00.00	00.00.00	16.332
00.00.01	00.00.01	16.609
00.00.02	00.00.02	16.609
00.01.00	00.01.00	17.296
00.01.01	00.01.01	17.296
00.01.02	00.01.02	15.856
Total power consumption (kWh)		79.004

Save as Excel

Excel data

# Power distribution Setting & Result

## EHP Power Consumption Inspection > Check inspection result

2010 3 27 ~ 2010 3 30

Power consumption
  Proportion
  Individual indoor unit by date
 00.00.01

Search

**Individual indoor unit by date**

2010-3-27 ~ 2010-3-30

Date	Used power consumption (kWh)
2010-03-27	5.061
2010-03-28	2.0
2010-03-29	3.0
2010-03-30	3.061
<b>Total used power consumption (kWh)</b>	<b>13.122</b>

Save as Exce

Select indoor unit

00.00.01 indoor unit power consumption data form 27<sup>th</sup> to 30<sup>th</sup>

Check inspection result

2010-3-27 ~ 2010-3-30

Date	Used power consumption (kWh)
Total used power consumption (kWh)	13.122
2010-03-27	5.061
2010-03-28	2
2010-03-29	3
2010-03-30	3.061

Excel data

# Power distribution Setting & Result



## EHP Power Consumption Inspection > Checking indoor unit operation time

2010 3 25 ~ 2010 3 26

All indoor units by period    Individual indoor unit by date  

Indoor unit address	Indoor unit name	Operation time (min)	Thermo on time (min)
00.00.00	00.00.00	98	98
00.00.01	00.00.01	96	96
00.00.02	00.00.02	96	96
00.01.00	00.01.00	89	89
00.01.01	00.01.01	87	87
00.01.02	00.01.02	15	15

Select period

00.00.00 unit by period  
-Operation time  
-Thermo on time

### Checking indoor unit operation time

2010-3-25 ~ 2010-3-26

Indoor unit address	Indoor unit name	Operation time (min)
00.00.00	00.00.00	121
00.00.01	00.00.01	119
00.00.02	00.00.02	119
00.01.00	00.01.00	112
00.01.01	00.01.01	110
00.01.02	00.01.02	38

▪ Base on DMS2 time, you can check up to 365 day of watt-hour meter value

# Power distribution Setting & Result

EHP Power Consumption Inspection > Checking indoor unit operation time

The screenshot shows a web interface for checking indoor unit operation time. At the top, there are date selection dropdowns for the year (2010), month (3), and day (25), followed by a tilde (~) and another set of date dropdowns (2010, 3, 26). Below this, there are two radio buttons: "All indoor units by period" (unselected) and "Individual indoor unit by date" (selected). To the right of the radio buttons is a dropdown menu showing "00.00.00" and a "Search" button. Below the search area, the date range "2010-3-25 ~ 2010-3-26" is displayed. A table with three columns: "Date", "Operation time (min)", and "Thermo on time (min)" contains two rows of data. A "Save as Exce" button is located at the bottom right of the table area.

Date	Operation time (min)	Thermo on time (min)
2010-03-25	11	11
2010-03-26	90	90

Select date

Select indoor unit

00.00.00 unit by date  
-Operation time  
-Thermo on time

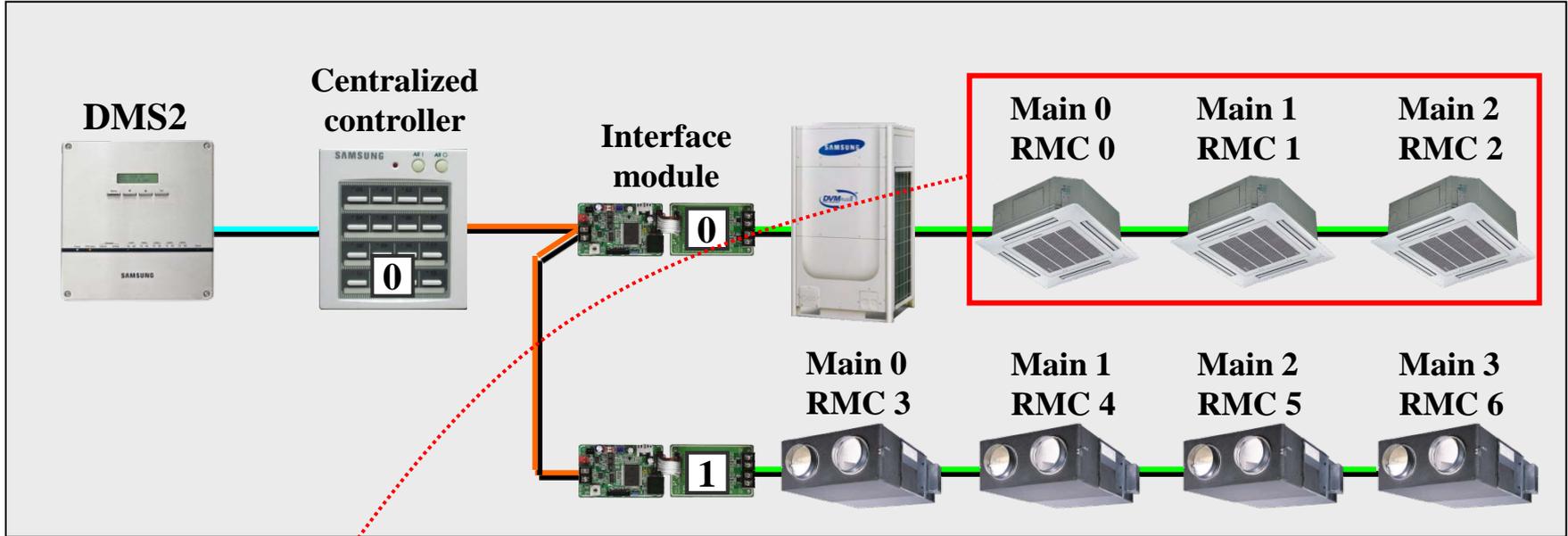
▪ Base on DMS2 time, you can check up to 365 day of watt-hour meter value

Checking indoor unit operation time

2010-3-25 ~ 2010-3-26

Date	Operation time (min)
2010-03-25	11
2010-03-26	91

## ERV Power distribution



2010-3-30 ~ 2010-3-30

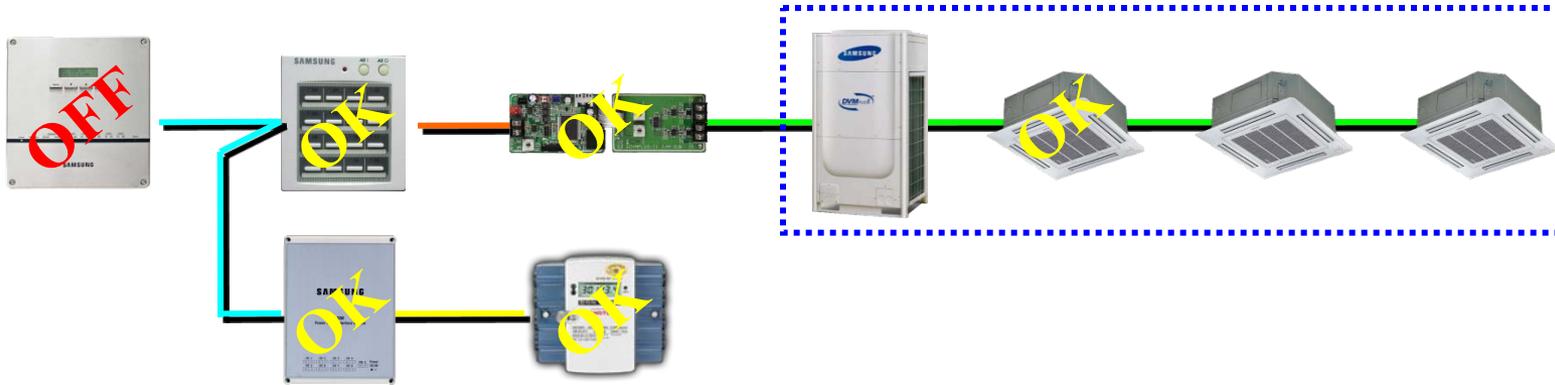
Indoor unit address	Indoor unit name	Used power
00,00,00	00,00,00	
00,00,01	00,00,01	3.061
00,00,02	00,00,02	3.061

**Control : EHP, ERV allowed**  
**Power Distribution ~~ERV~~ EHP only**

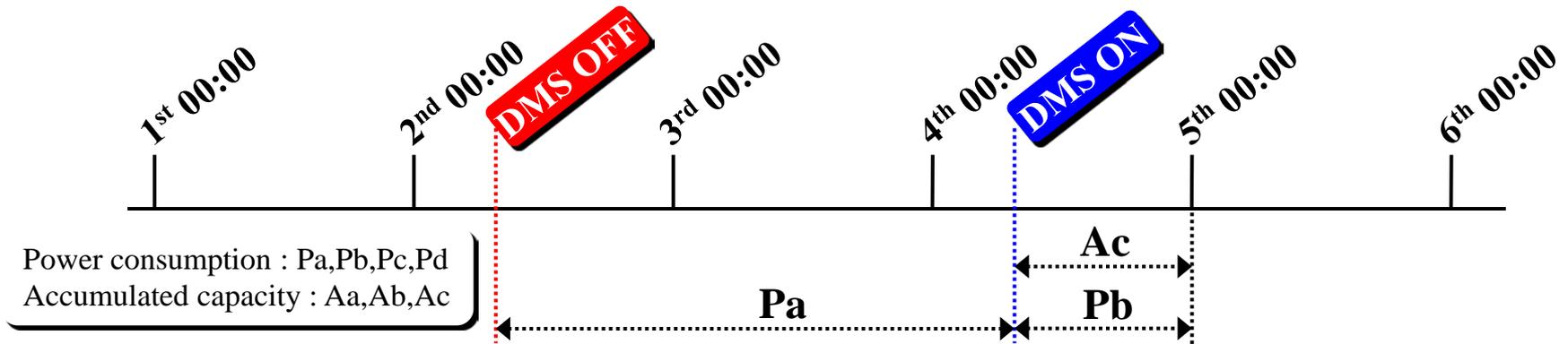
**NO ERVs**

**No need to install a watt-hour meter for ERVs !**

## Error on DMS2 power



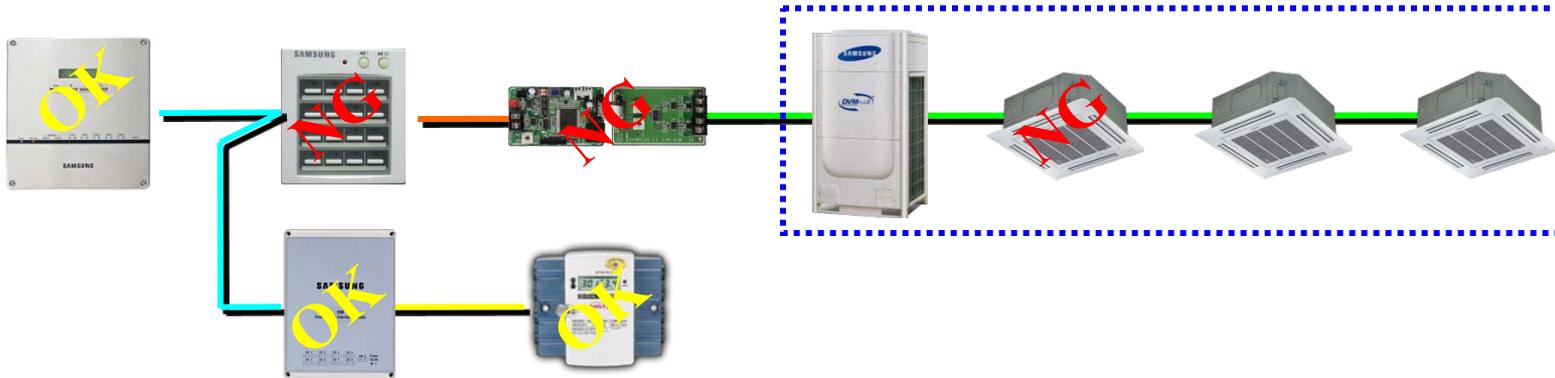
1) When DMS was powered off and on again with other communication working good,



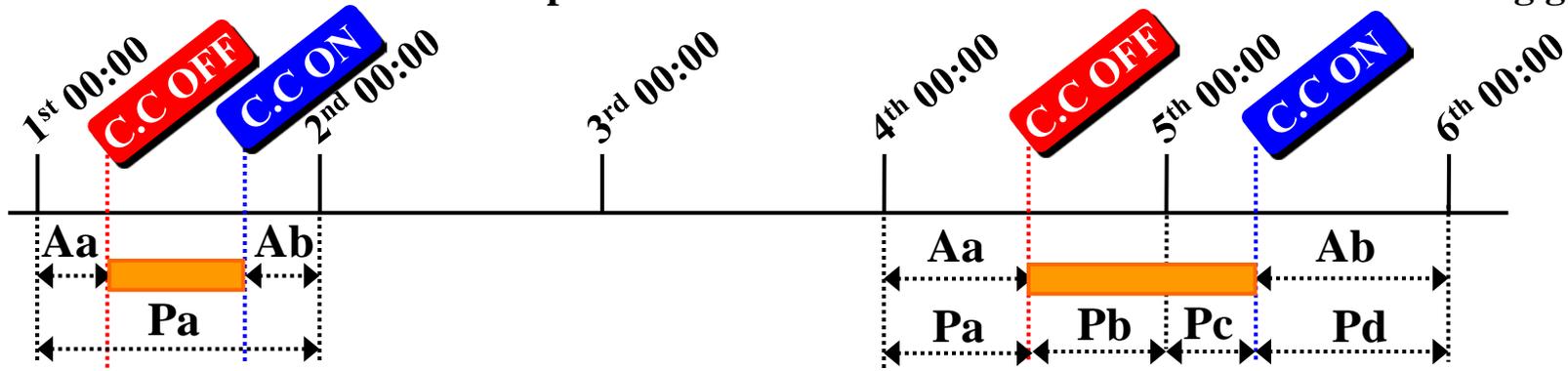
- a. If  $P_a > 2,536\text{kWh}$ ,  $P_b$  is distributed with  $A_c$  at 5<sup>th</sup> 00:00.
- b. If  $P_a \leq 2,536\text{kWh}$ ,  $P_a+P_b$  is distributed with  $A_c$  at 5<sup>th</sup> 00:00.

**Time reference - 00:00 (for Section 1)**

## Communication error on centralized controller or I/M or F1-F2 within 1 day



1) When centralized controller was powered off and on with other communication working good,

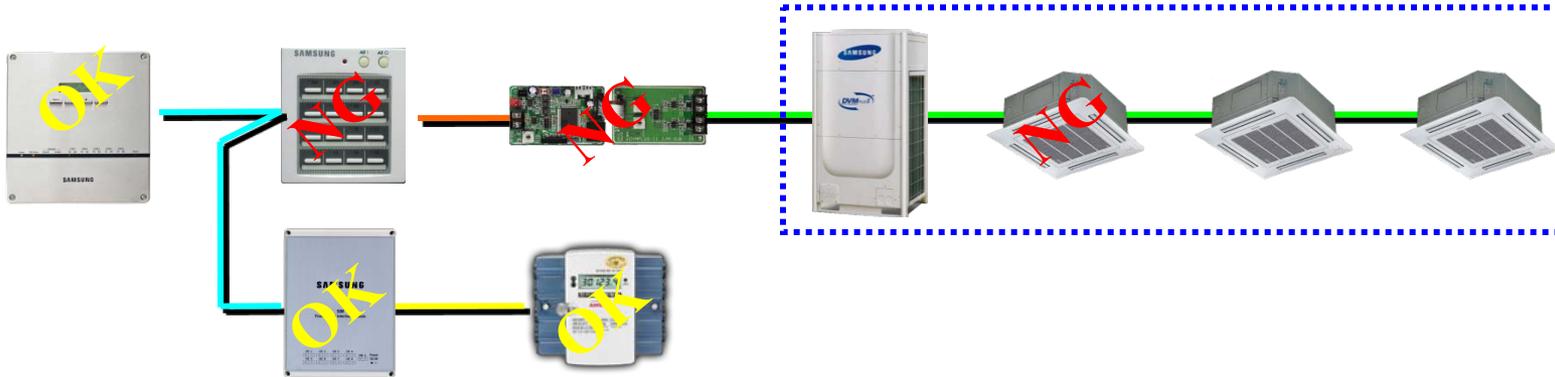


Pa is distributed with Aa+Ab at 2<sup>nd</sup> 00:00.

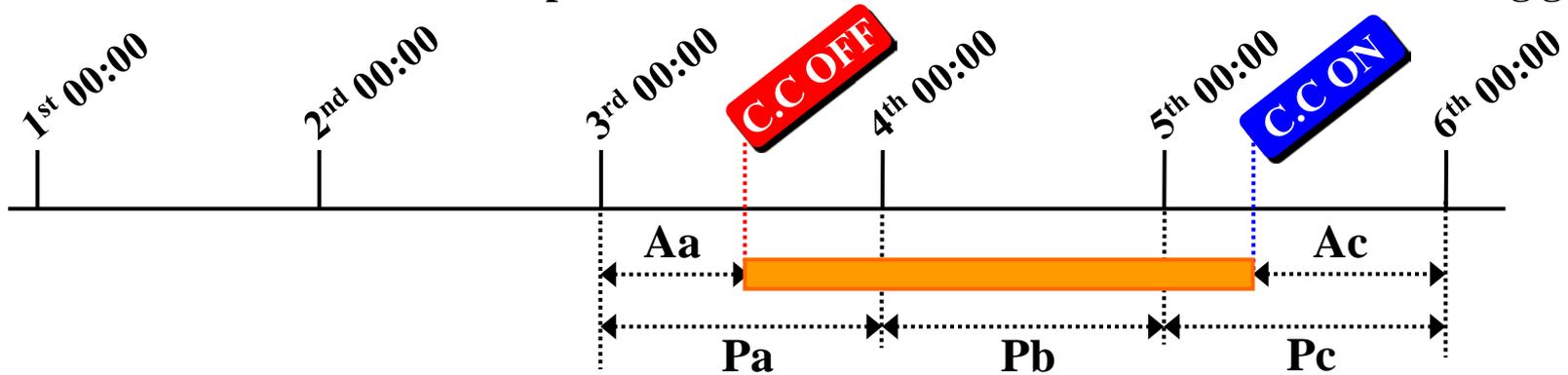
Pa+Pb is distributed with Aa at 5<sup>th</sup> 00:00.  
Pc+Pd is distributed with Ab at 6<sup>th</sup> 00:00.

**Time reference - 00:00 (for Section 1)**

## Communication error on centralized controller or I/M or F1-F2 for over 1 day



1) When centralized controller was powered off and on with other communication working good,



Pa is distributed with Aa at 4<sup>th</sup> 00:00.

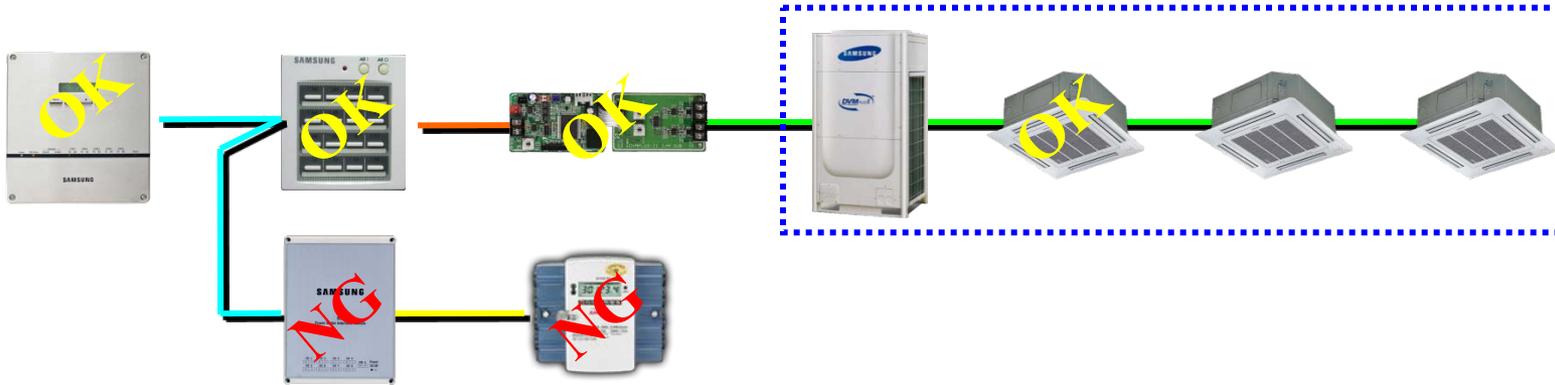
Pb of the whole 1 day is not distributed at 5<sup>th</sup> 00:00

-> Power distribution result during 4<sup>th</sup> 00:00 ~ 5<sup>th</sup> 00:00 : 0kWh

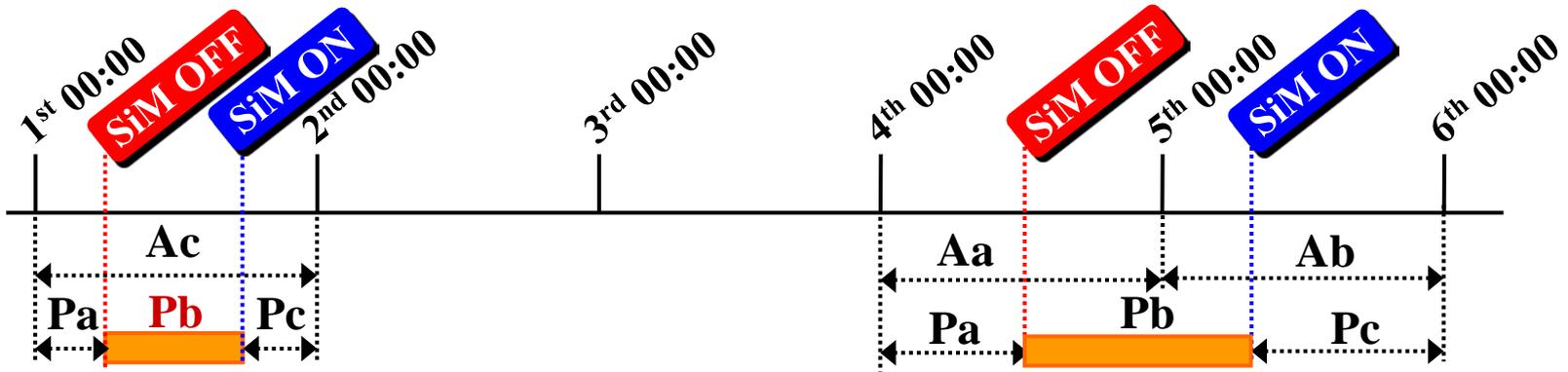
Pc is distributed with Ac at 6<sup>th</sup> 00:00.

**Time reference - 00:00 (for Section 1)**

## Communication error on SiM or watt-hour meter within 1 day



1) When SiM was powered off and on again with other communication working good,

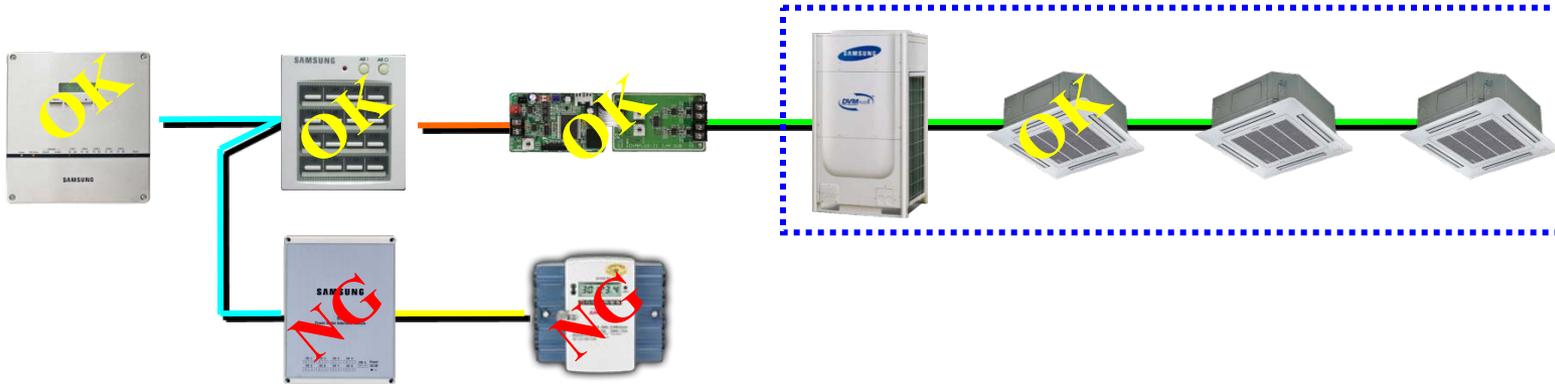


If  $P_b > 50\text{kWh}$ ,  $P_a + P_c$  is distributed with  $A_c$  at 2<sup>nd</sup> 00:00.  
 If  $P_b \leq 50\text{kWh}$ ,  $P_a + P_b + P_c$  is distributed with  $A_c$  at 2<sup>nd</sup> 00:00.

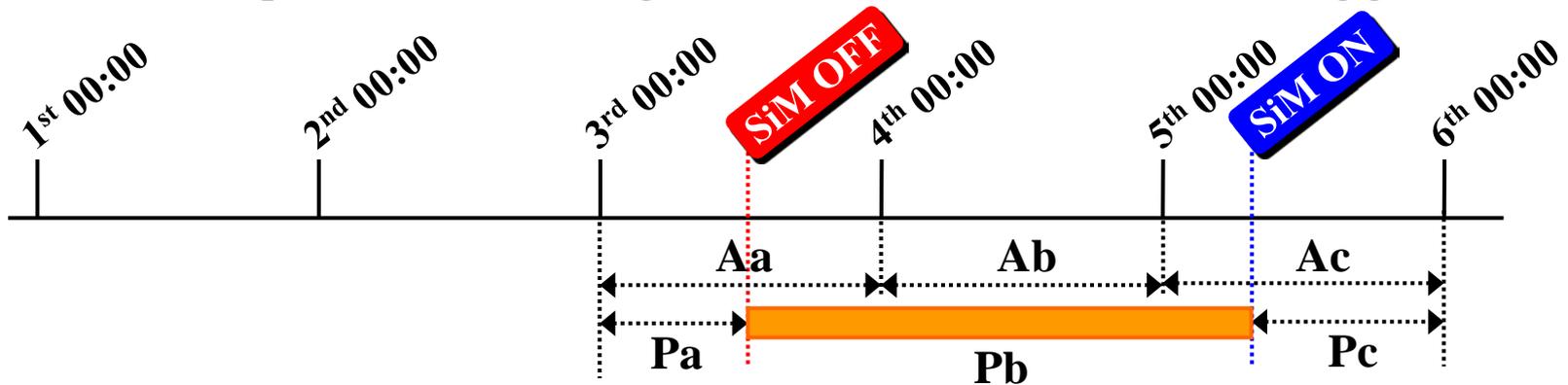
$P_a$  only is distributed with  $A_a$  at 5<sup>th</sup> 00:00.  
 $P_c$  only is distributed with  $A_b$  at 6<sup>th</sup> 00:00.

**Time reference - 00:00 (for Section 1)**

## Communication error on SiM or watt-hour meter for over 1 day



1) When SiM was powered off and on again with other communication working good,



Pa only is distributed with Aa at 4<sup>th</sup> 00:00.

Pb is not distributed at 5<sup>th</sup> 00:00 since Pb is not delivered to DMS

-> Power distribution result during 4<sup>th</sup> 00:00 ~ 5<sup>th</sup> 00:00 : 0kWh

Pc only is distributed with Ac at 6<sup>th</sup> 00:00.

**Time reference - 00:00 (for Section 1)**