InfraCool®

Rack Airflow Control

User Manual

Fan Unit & ICM-02 Air Flow management software

Designed and manufactured by Austin Hughes

Legal Information

First English printing, September 2020

Information in this document has been carefully checked for accuracy; however, no guarantee is given to the correctness of the contents. The information in this document is subject to change without notice. We are not liable for any injury or loss that results from the use of this equipment.

Safety Instructions

Please read all of these instructions carefully before you use the device. Save this manual for future reference.

- Unplug equipment before cleaning. Don't use liquid or spray detergent; use a moist cloth.
- Keep equipment away from excessive humidity and heat. Preferably, keep it in an air-conditioned environment with temperatures not exceeding 40º Celsius (104º Fahrenheit).
- When installing, place the equipment on a sturdy, level surface to prevent it from accidentally falling and causing damage to other equipment or injury to persons nearby.
- When the equipment is in an open position, do not cover, block or in any way obstruct the gap between it and the power supply. Proper air convection is necessary to keep it from overheating.
- Arrange the equipment's power cord in such a way that others won't trip or fall over it.
- If you are using a power cord that didn't ship with the equipment, ensure that it is rated for the voltage and current labeled on the equipment's electrical ratings label. The voltage rating on the cord should be higher than the one listed on the equipment's ratings label.
- Observe all precautions and warnings attached to the equipment.
- If you don't intend on using the equipment for a long time, disconnect it from the power outlet to prevent being damaged by transient over-voltage.
- Keep all liquids away from the equipment to minimize the risk of accidental spillage. Liquid spilled on to the power supply or on other hardware may cause damage, fire or electrical shock.
- Only qualified service personnel should open the chassis. Opening it yourself could damage the equipment and invalidate its warranty.
- If any part of the equipment becomes damaged or stops functioning, have it checked by qualified service personnel.

What the warranty does not cover

- Any product, on which the serial number has been defaced, modified or removed.
- Damage, deterioration or malfunction resulting from:
  - ☐ Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
  - ☐ Repair or attempted repair by anyone not authorized by us.
  - ☐ Any damage of the product due to shipment.
  - ☐ Removal or installation of the product.
  - ☐ Causes external to the product, such as electric power fluctuation or failure.
  - ☐ Use of supplies or parts not meeting our specifications.
  - ☐ Normal wear and tear.
  - ☐ Any other causes which does not relate to a product defect.
- Removal, installation, and set-up service charges.

Regulatory Notices Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

Any changes or modifications made to this equipment may void the user's authority to operate this equipment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-position or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Unpacking

The equipment comes with the standard parts shown on the package contents. Check and make sure they are included and in good condition. If anything is missing, or damage, contact the supplier immediately.

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< Part I > Installation

< 1.1 > 1U Fan Tray

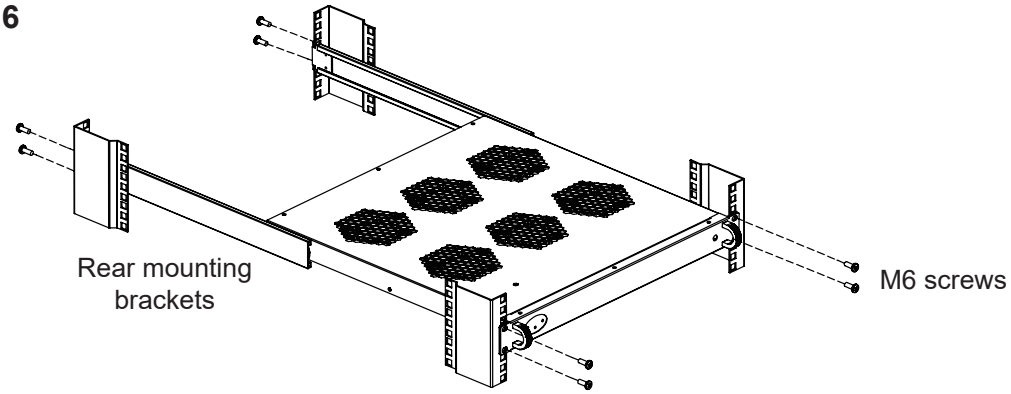
Package Content

- 1U rackmount fan tray x 1 pc
- Temp. sensor x 1 pc
- 6 ft power cord x 1 pc
- Rear mounting bracket x 1 pair

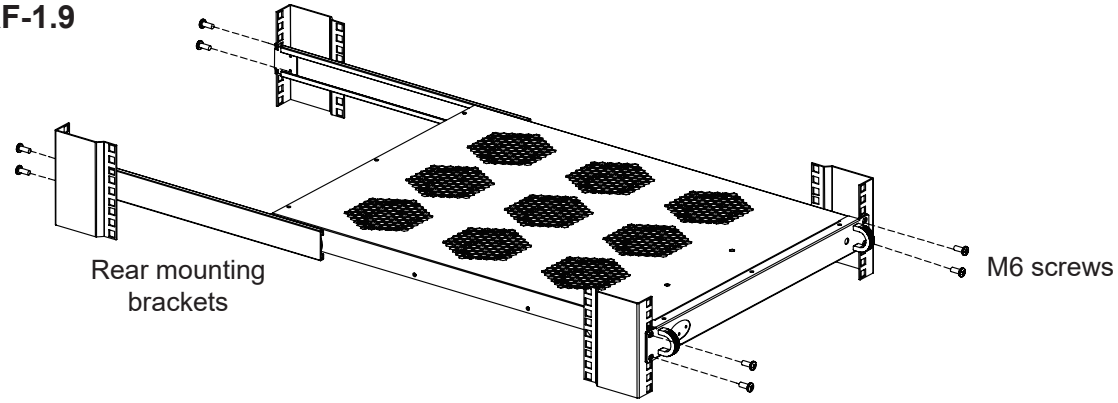
  * M6 screws for fixing are not included

Installation

MRF-1.6 / RF-1.6



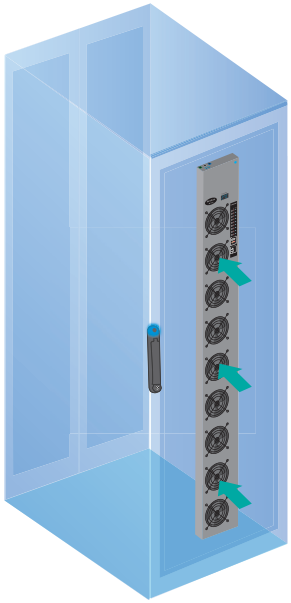
MRF-1.9 / RF-1.9



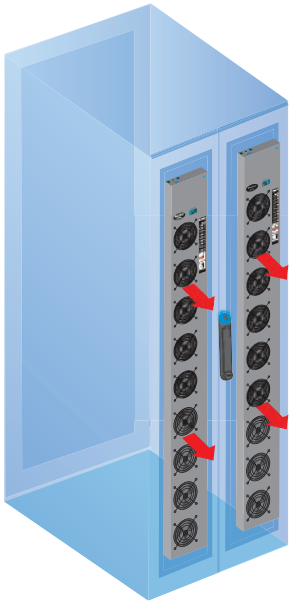
< 1.2 > 33U Door Mount Fan Panel

MRF-33.9 & RF-33.9 Door mount Fan Panel are typically installed on the outside of a rack's rear perforated door to improve extraction of heat from high density rack.

The unit can be attached to most 42U or taller racks. If aisle is relatively narrow for exterior mounting, the unit may be installed on the inside of the perforated door. For details, please refer to the model table below :



Front Door
Cool Air In



Rear Door
Hot Air Out

Model	Installation	Airflow	Purpose
MRF-33.9A **RF-33.9A**	Rear door outside Front door inside	Extract airflow Intake airflow	Exhaust air out from rack Cool air in from aisle
MRF-33.9B **RF-33.9B**	Front door outside Rear door inside	Intake airflow Extract airflow	Cool air in from aisle Exhaust air out from rack

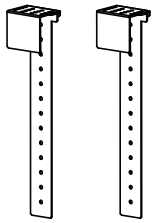
Package Content

- 33U door mount fan panel x 1 pc
- Temp. sensor x 1 pc
- 6 ft power cord x 1 pc
- User Manual x 1 pc
- Mounting screw x 6 pcs (attached with the unit)
- Air blocking material x 1 pc

Optional mounting kit

Hanging bracket kit

Part no. : F-HBK
- Hanging bracket x 2 pcs
- M4*6mm screw with nut x 4 sets
- M4*10mm screw x 2 pcs



* For installation, please refer to p.5

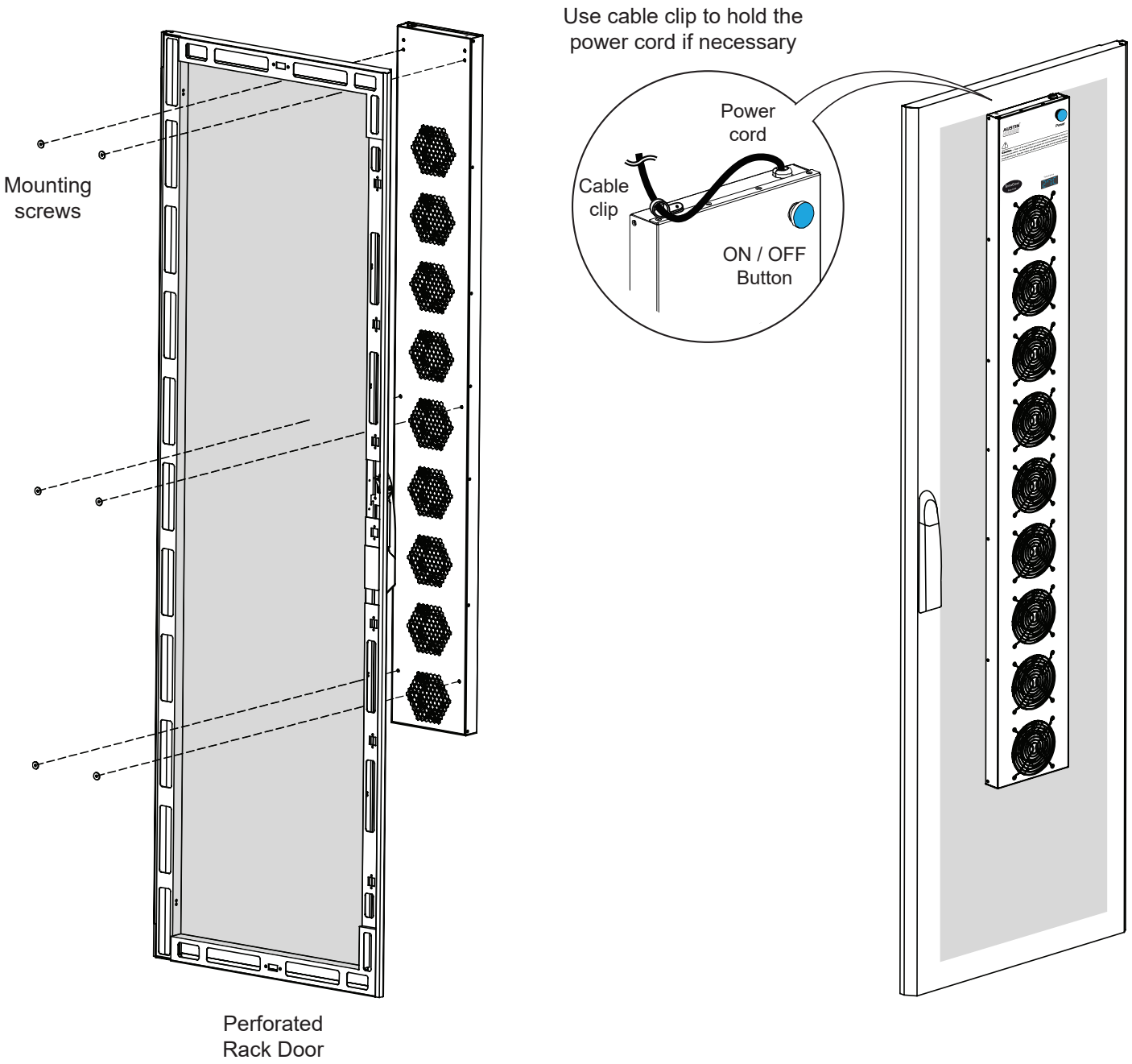
< 1.2 > 33U Door Mount Fan Panel

Caution - Power off the fans if the door is to be opened for maintenence or service of items within the rack. The fans have finger guards but care must be excerised when working around spinning fans. Keep hair, fingers and other small objects away from the spinning blades.

Installation steps

The weight of the unit is less than 5.5 kg, so in most cases, holes in perforated rack doors can be used to mount the unit.

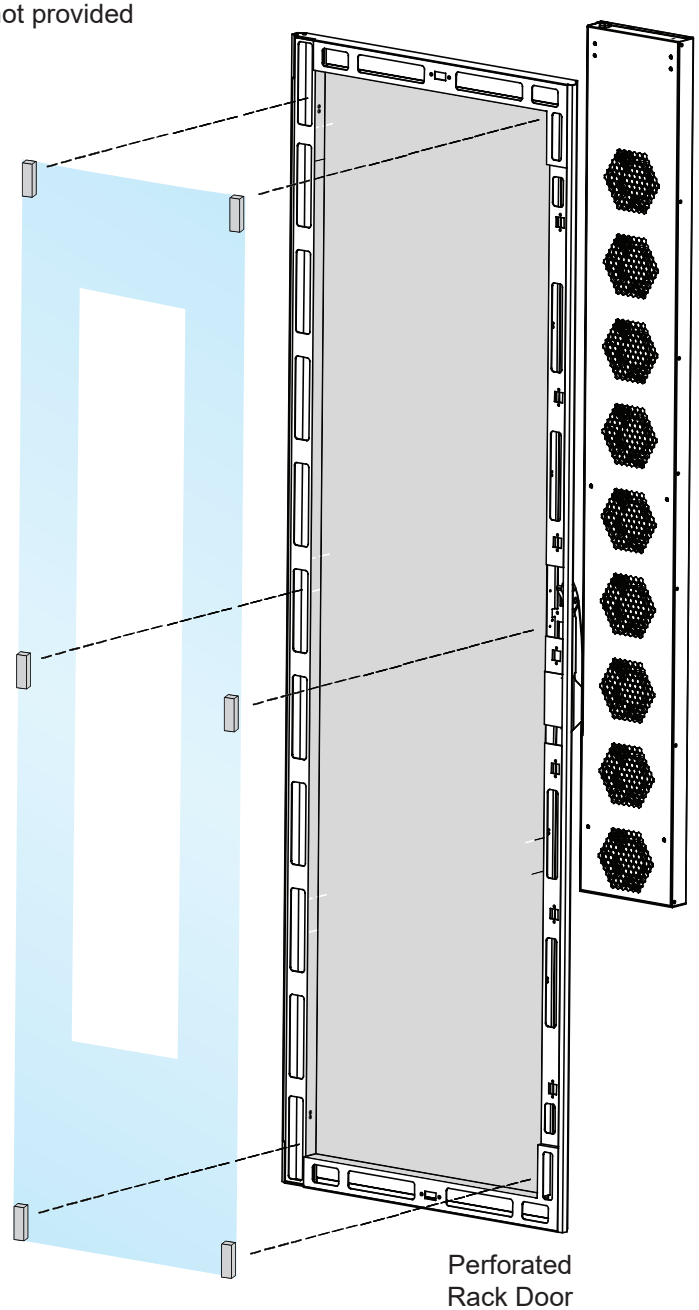
1. Lift the unit to the desired position.
2. Place attached 6 screws then through the door and tighten them.
3. Connect the power cord to the PDU of the rack through the cable entry hole on the rear top of the rack.
4. If no cable entry on the top, the unit may be installed on the inside but the model need to be changed. Please refer to P.2 .



Air Blocking Material

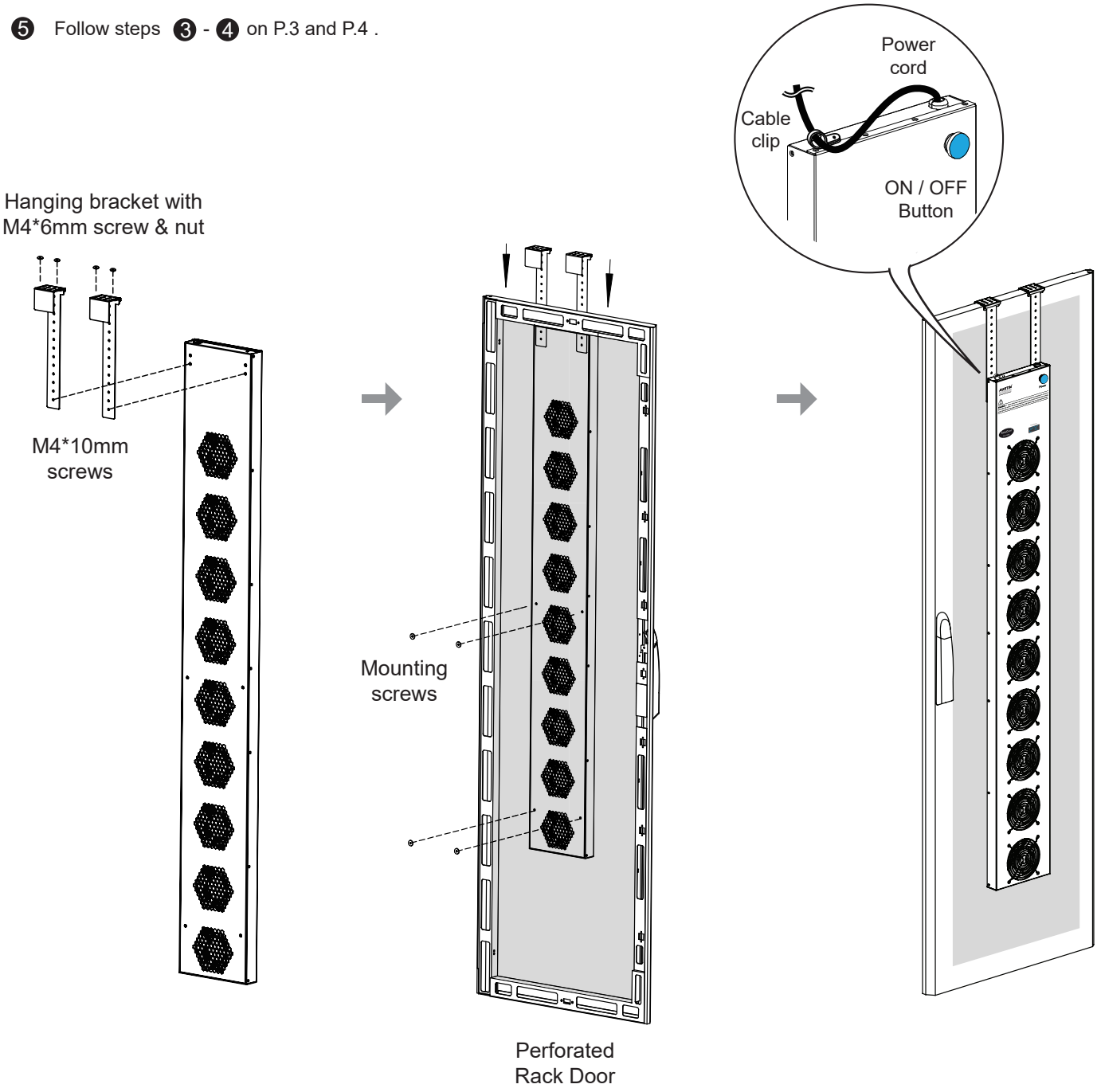
To eliminate bypass air to maximize heat removal from the rack, cut the air blocking material to the size necessary with cutter or scissors, and then apply the material to the inside surface of the door with magnets or double sided adhesive tapes. Ensure all open perforations are covered by the material.

Fix the air blocking material with magnets or double sided adhesive tapes
Magnets & adhesive tapes not provided



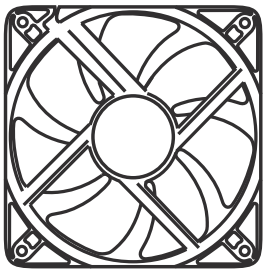
Hanging bracket installation

1. Assemble & adjust the hanging bracket with M4*6mm screw & nut, to fit the thickness of the door.
2. Install the hanging bracket kit on the rear side of the fan panel with M4*10mm screw.
3. Hang the unit on the door.
4. Place attached 4 screws then through the door and tighten them.
5. Follow steps 3 - 4 on P.3 and P.4 .



	Intelligen Master IP Fan Unit	Intelligent Expansion Serial Fan Unit
Daisy Chain Position	**1st Level**	**2nd - 16th Level**
IP Port	✓	
Daisy Chain Port - LINK		✓
Daisy Chain Port - OUT	✓	✓
Temp. Port	✓	✓
Temp. Sensor	✓	✓
Control Panel :		
- Individual Fan On / Off	✓	✓
- Alarm Temp. Setting	✓	✓
- Unit CFM (fan speed) Setting	✓	✓
- Temperature LED	✓	✓
- Fan Status LED	✓	✓
- CFM Status LED	✓	✓
1U Fan Tray	**6 / 9 fans**	**6 / 9 fans**
Door Mount Fan Panel	**9 fans**	**9 fans**

< 2.2 > Fan Kit Specification



Air Delivery :	108 CFM
Rated Speed :	3000 rpm, +/-10%
Rated Voltage :	12V DC
Rated Current :	350 mA
Noise Level :	41 dB
Dimension :	120 x 120 x 25 mm
Bearing System :	Dual ball bearing

< 2.3 > Master IP Fan Unit Model

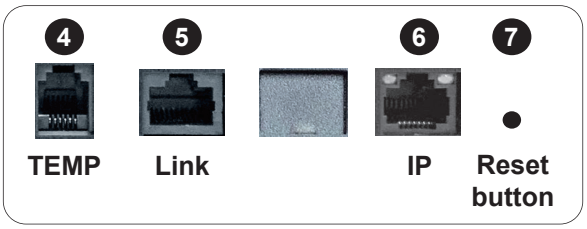
Model : MRF-1.6

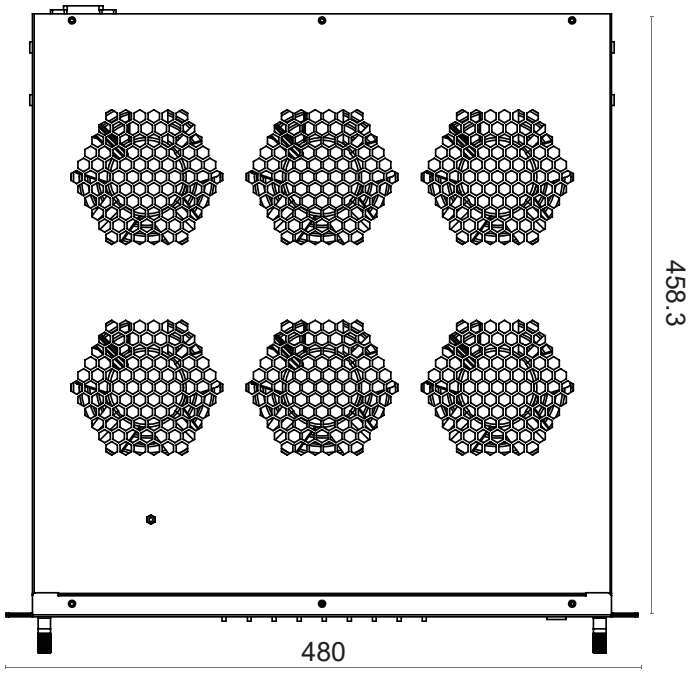
1U Fan Tray with 6 fans

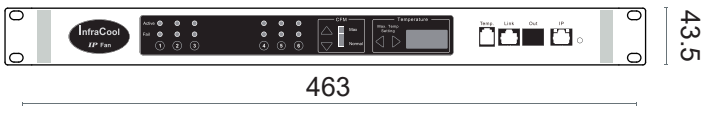
❷ - Unit CFM Status LED
- Unit CFM Setting

❶
- Individual fan status
- Individual fan On / Off buttons

❸
- Buttons for Alarm Temp. Setting
- Temp. LED display







④ - Temp. port bundled w/ a temp. sensor

⑤ - Daisy chain port for connecting to the Out port of the 2nd level fan unit

⑥ - 1000Base-T (Gigabit) IP port for remote access
- Enterprise level IP authentication : AD & LDAPv3 / LDAPS
- Only Master IP fan unit provides an IP port
- 1 x IP port allows access to 16 levels

⑦ - Press the reset button and release instantly to reboot build-in IP dongle
- Press and hold the reset button until Orange LED off to reset build-in IP dongle to factory default

< 2.3 > Master IP Fan Unit Model

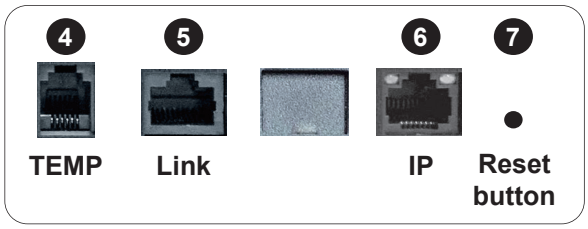
Model : MRF-1.9

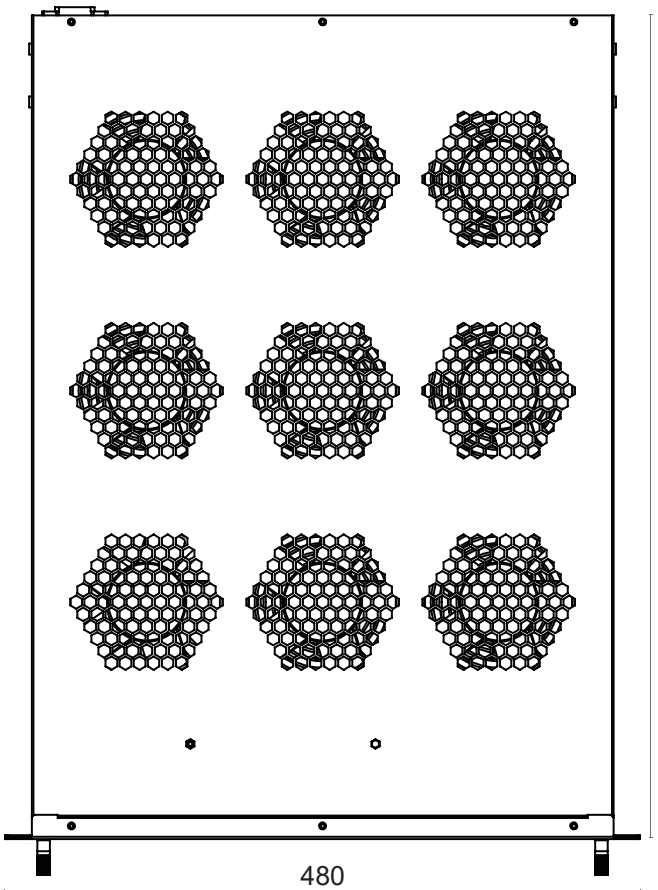
1U Fan Tray with 9 fans

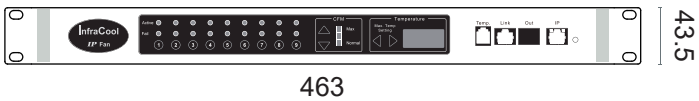
❷ - Unit CFM Status LED
- Unit CFM Setting

❶
- Individual fan status
- Individual fan On / Off buttons

❸
- Buttons for Alarm Temp. Setting
- Temp. LED display







❹ - Temp. port bundled w/ a temp. sensor

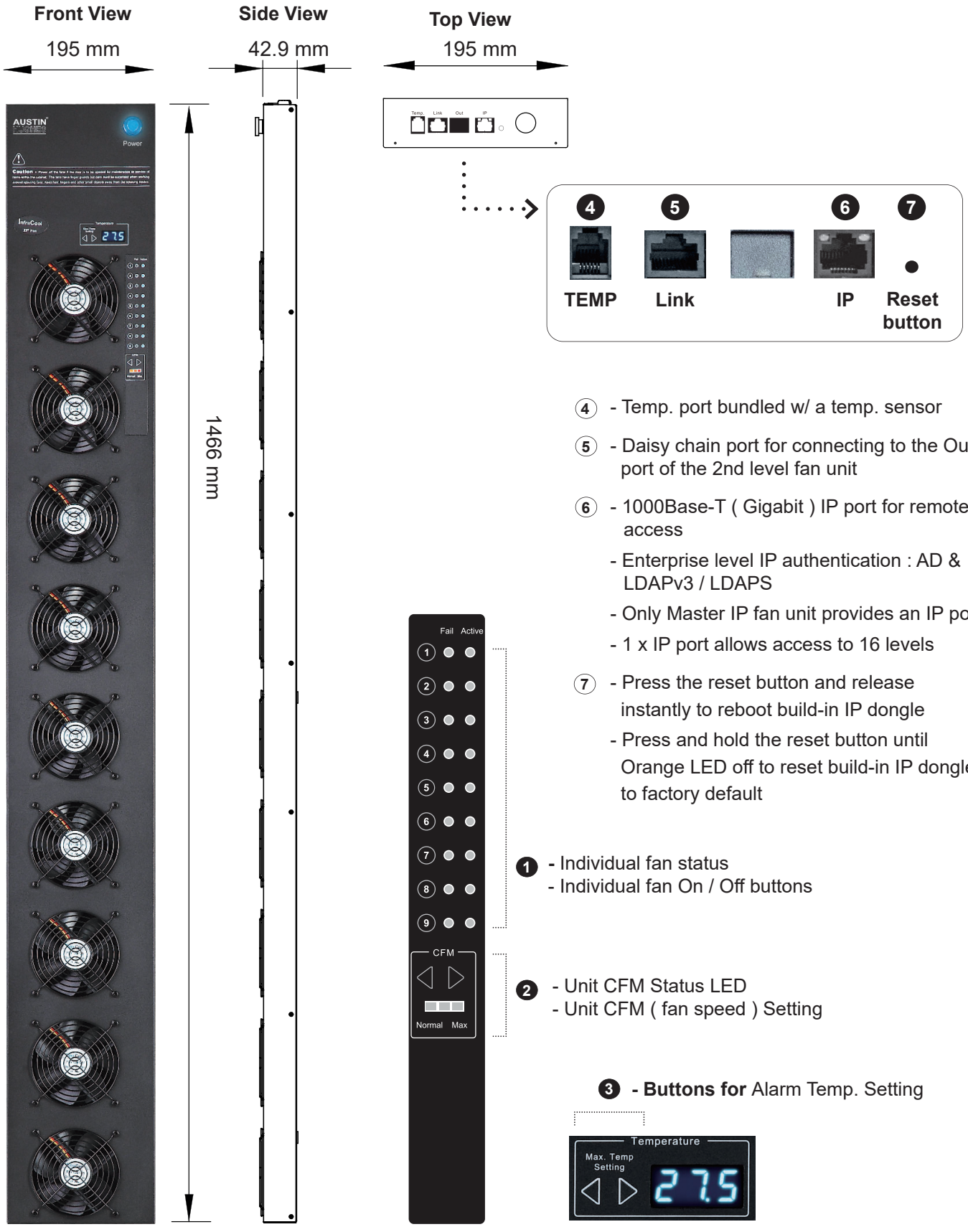
❺ - Daisy chain port for connecting to the Out port of the 2nd level fan unit

❻ - 1000Base-T (Gigabit) IP port for remote access
- Enterprise level IP authentication : AD & LDAPv3 / LDAPS
- Only Master IP fan unit provides an IP port
- 1 x IP port allows access to 16 levels

❼ - Press the reset button and release instantly to reboot build-in IP dongle
- Press and hold the reset button until Orange LED off to reset build-in IP dongle to factory default

unit : mm

Model : MRF-33.9 33U Door Mount Fan Panel with 9 fans



④ - Temp. port bundled w/ a temp. sensor

⑤ - Daisy chain port for connecting to the Out port of the 2nd level fan unit

⑥ - 1000Base-T (Gigabit) IP port for remote access

- Enterprise level IP authentication : AD & LDAPv3 / LDAPS
- Only Master IP fan unit provides an IP port
- 1 x IP port allows access to 16 levels

⑦ - Press the reset button and release instantly to reboot build-in IP dongle

- Press and hold the reset button until Orange LED off to reset build-in IP dongle to factory default

① - Individual fan status
- Individual fan On / Off buttons

② - Unit CFM Status LED
- Unit CFM (fan speed) Setting

③ - **Buttons for** Alarm Temp. Setting

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< 2.4 > Master IP Fan Unit Specification Table

Master IP Fan	Model	**MRF-1.6 / 1.9**	**MRF-33.9**
	No. of Fan	6 / 9	9
	Mounting	1U	Door mount
	CFM Level	Normal / High / Max.	
	Individual Fan ON / OFF	Yes	
	Individual Fan CFM	108 CFM	
	Unit CFM (Approximately)	324 / 648 / 972 CFM	972 CFM
	IP Remote Access	Yes	
	Daisy Chain Level	1st level, Expansion Serial fan for level 2 - 16	
	MTBF	50,000 hrs	
	Individual Fan Noise Level	41 dB	

Temperature Sensor	Temperature Port	1 x temperature sensor port (sensor bundled)
	Measurement Range	0 to 99.9°C
	Measurement Accuracy	+/- 1.5%
	Temperature Alarm	Yes

Power	Input	Auto sensing, 100V or 240V AC at 50 or 60Hz via IEC cord	
	Consumption	20W / 40W / 60W	60W

Environmental Conditions	Operating	0 to 50°C
	Storage	-5 to 60°C
	Relative Humidity	90%, non-condensing
	Shock	50G peak acceleration (11ms, half-sine wave)
	Vibration	58~100Hz / 0.98G (11ms / cycle)

Dimensions	**Model**	Product Dimension	Packing Dimension
	MRF-1.6	480 x 458.3 x 43.5 mm 18.9 x 18 x 1.71 inch	550 x 550 x 120 mm 21.7 x 21.7 x 4.7 inch
	MRF-1.9	480 x 623.3 x 43.5 mm 18.9 x 24.5 x 1.71 inch	550 x 730 x 120 mm 21.7 x 28.7 x 4.7 inch
	MRF-33.9	195 x 42.9 x 1466 mm 7.7 x 1.7 x 57.7 inch	263 x 106 x 1650 mm 10.4 x 4.2 x 65.0 inch

Weight	**Model**	Net Weight	Gross Weight
	MRF-1.6	6.8 kgs / 15 lbs	8 kgs / 17.6 lbs
	MRF-1.9	9 kgs / 19.8 lbs	11 kgs / 24.2 lbs
	MRF-33.9	5 kgs / 11 lbs	7.4 kgs / 16.3 lbs

Casing Color	Black

Regulatory	FCC & CE

Environmental	RoHS3 & REACH compliant by SGS

< 2.5 > Expansion Serial Fan Unit Model

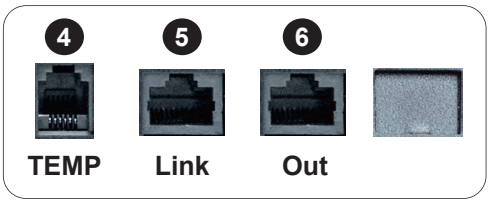
Model : RF-1.6

1U Fan Tray with 6 fans

❷ - Unit CFM Status LED
- Unit CFM Setting

❶
- Individual fan status
- Individual fan On / Off buttons

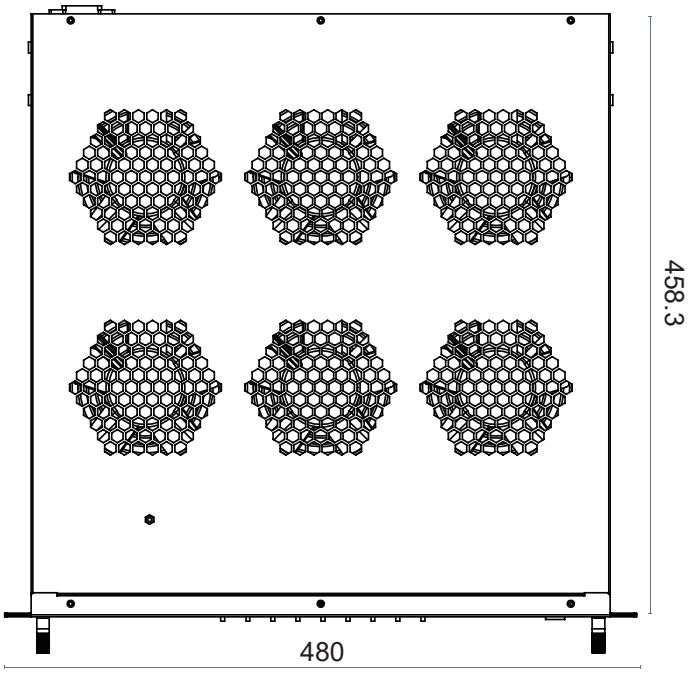
❸
- Buttons for Alarm Temp. Setting
- Temp. LED display

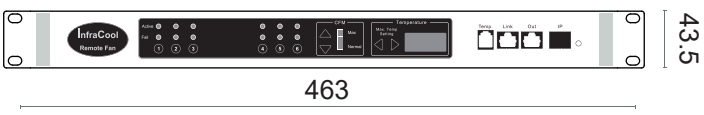


④ - Temp. port bundled w/ a temp. sensor

⑤ - Daisy chain Link port for connecting to the Out port of the 2nd level fan unit

⑥ - Daisy chain Out port for connecting to the Link port of the next level fan unit





< 2.5 > Expansion Serial Fan Unit Model

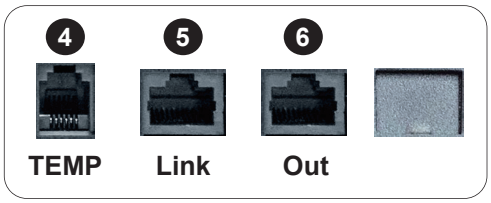
Model : RF-1.9

1U Fan Tray with 9 fans

② - Unit CFM Status LED
- Unit CFM Setting

① - Individual fan status
- Individual fan On / Off buttons

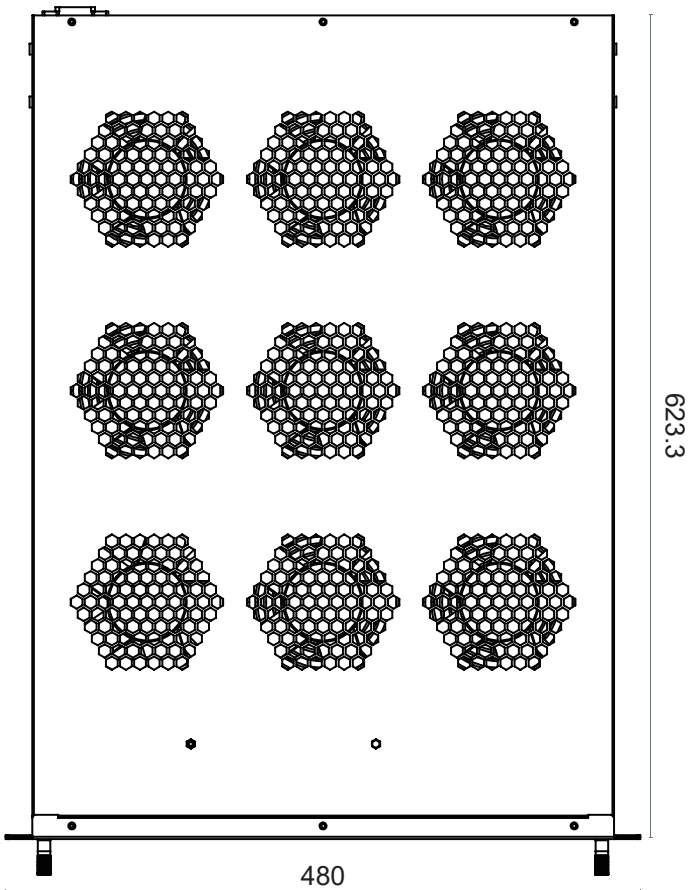
③ - Buttons for Alarm Temp. Setting
- Temp. LED display

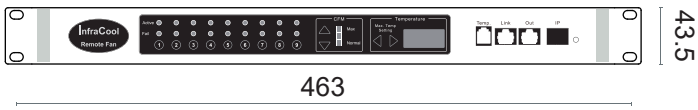


④ - Temp. port bundled w/ a temp. sensor

⑤ - Daisy chain Link port for connecting to the Out port of the 2nd level fan unit

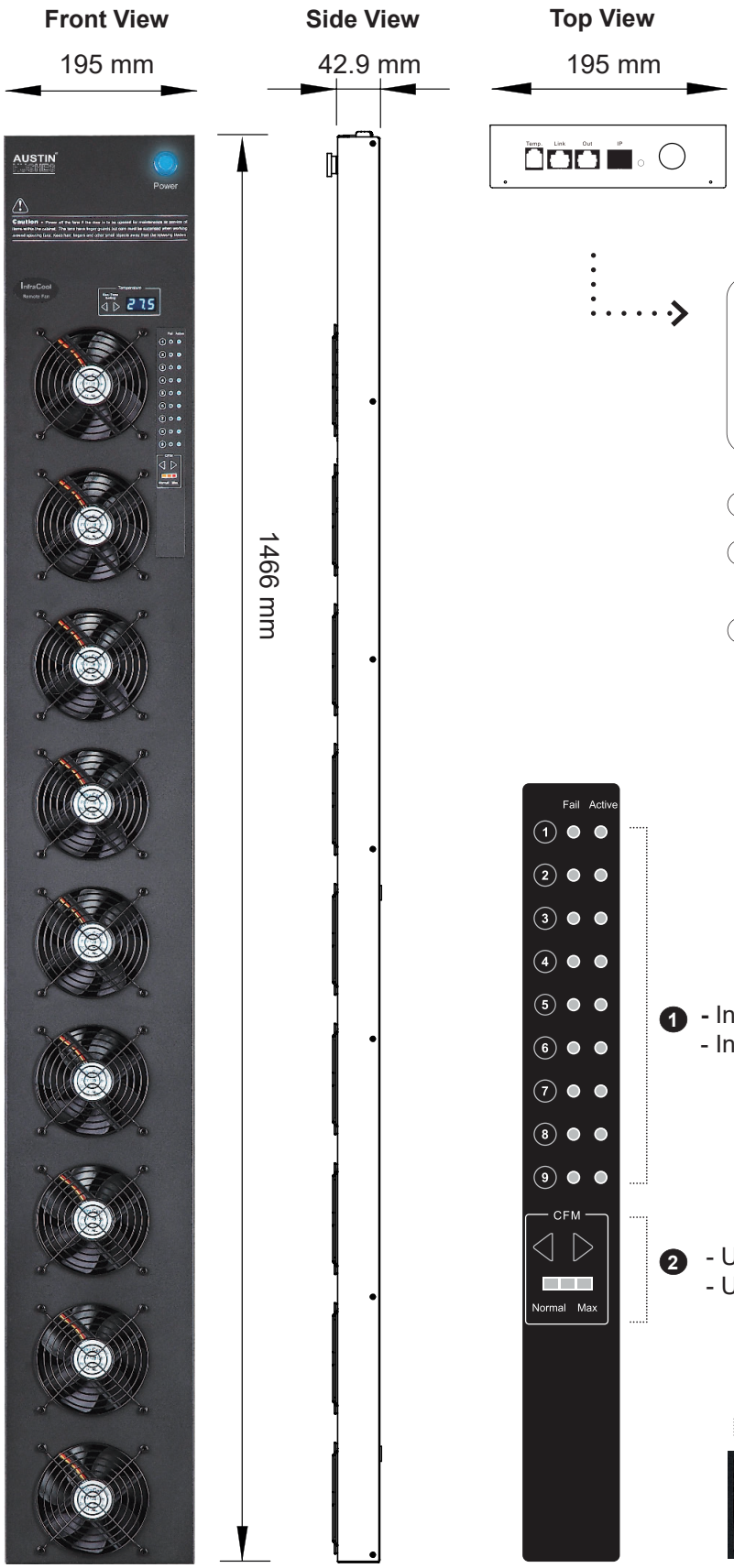
⑥ - Daisy chain Out port for connecting to the Link port of the next level fan unit

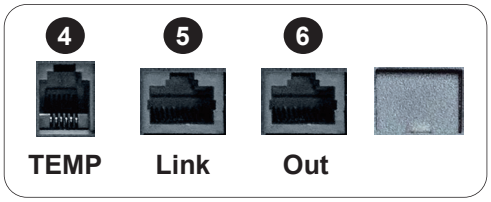




< 2.5 > Expansion Serial Fan Unit Model

Model : RF-33.9 33U Door Mount Fan Panel with 9 fans





④ - Temp. port bundled w/ a temp. sensor

⑤ - Daisy chain Link port for connecting to the Out port of the 2nd level fan unit

⑥ - Daisy chain Out port for connecting to the Link port of the next level fan unit

① - Individual fan status
- Individual fan On / Off buttons

② - Unit CFM Status LED
- Unit CFM (fan speed) Setting

③ - **Buttons for** Alarm Temp. Setting

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< 2.6 > Expansion Serial Fan Unit Specification Table

Expansion Serial Fan	Model	**RF-1.6 / 1.9**	**RF-33.9**
	No. of Fan	6 / 9	9
	Mounting	1U	Door mount
	CFM Level	Normal / High / Max.	
	Individual Fan ON / OFF	Yes	
	Individual Fan CFM	108 CFM	
	Unit CFM (Approximately)	324 / 648 / 972 CFM	972 CFM
	IP Remote Access	Not available, must be via Master IP fan on the 1st level	
	Daisy Chain Level	For Level 2 - 16	
	MTBF	50,000 hrs	
	Individual Fan Noise Level	41 dB	

Temperature Sensor	Temperature Port	1 x temperature sensor port (sensor bundled)	
	Measurement Range	0 to 99.9°C	
	Measurement Accuracy	+/- 1.5%	
	Temperature Alarm	Yes	

Power	Input	Auto sensing, 100V or 240V AC at 50 or 60Hz via IEC cord	
	Consumption	20W / 40W / 60W	60W

Environmental Conditions	Operating	0 to 50°C
	Storage	-5 to 60°C
	Relative Humidity	90%, non-condensing
	Shock	50G peak acceleration (11ms, half-sine wave)
	Vibration	58~100Hz / 0.98G (11ms / cycle)

Dimensions	**Model**	Product Dimension	Packing Dimension
	RF-1.6	480 x 458.3 x 43.5 mm 18.9 x 18 x 1.71 inch	550 x 550 x 120 mm 21.7 x 21.7 x 4.7 inch
	RF-1.9	480 x 623.3 x 43.5 mm 18.9 x 24.5 x 1.71 inch	550 x 730 x 120 mm 21.7 x 28.7 x 4.7 inch
	RF-33.9	195 x 42.9 x 1466 mm 7.7 x 1.7 x 57.7 inch	263 x 106 x 1650 mm 10.4 x 4.2 x 65.0 inch

Weight	**Model**	Net Weight	Gross Weight
	RF-1.6	6.8 kgs / 15 lbs	8 kgs / 17.6 lbs
	RF-1.9	9 kgs / 19.8 lbs	11 kgs / 24.2 lbs
	RF-33.9	5 kgs / 11 lbs	7.4 kgs / 16.3 lbs

Casing Color	Black

Regulatory	FCC & CE

Environmental	RoHS3 & REACH compliant by SGS

< 2.7 > Daisy Chain Connection

■ Only Master IP Fan Unit built-in IP remote access module

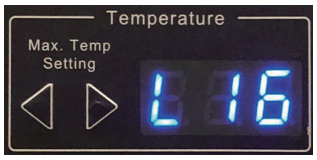
■ Master IP Fan unit MUST be set on the 1st daisy chain level

■ Please follow the steps below the set the daisy chain level for Master IP Fan unit & expansion fan units

■ For the cabling connection, please refer to next page.

Step 1. Press and hold the “ ① “ button for 5 seconds.

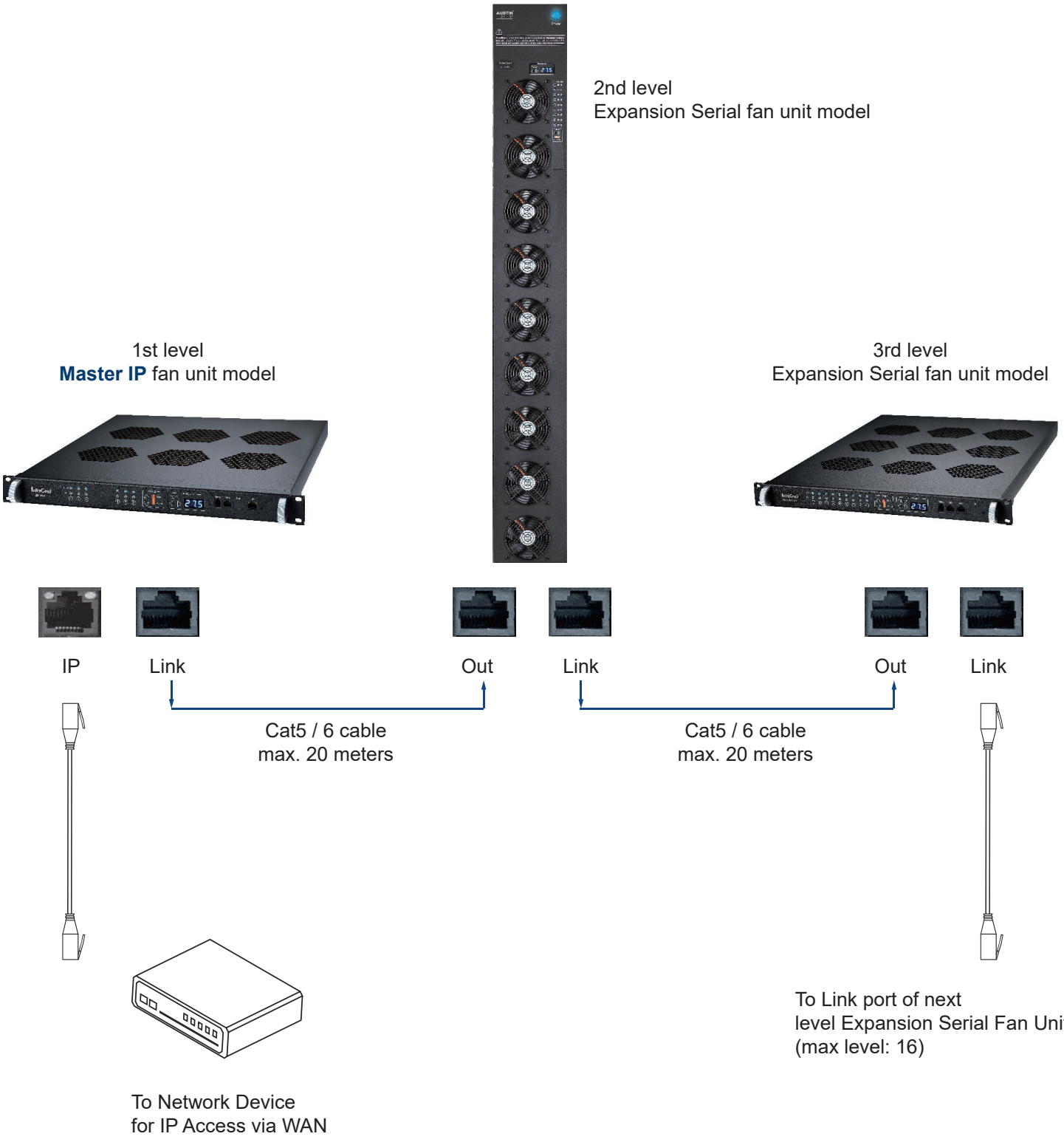
Step 2. Press ◁ or ▷ arrow button to set the daisy chain level



< 2.7 > Daisy Chain Connection

Remarks :

- Each Master IP group supports 16 daisy chain levels.
- The 1st level fan unit must be one of the Master IP fan unit models.
- 1 x Master IP fan unit allows access to 16 levels.
- For IP fan unit access, simply connect 1 x Master IP fan unit.
- The 2nd – 16th level fan unit must be one of the Expansion fan unit models.

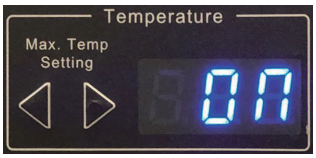


< 2.8 > Audio Temperature Alarm Setting

Please follow the steps below to setup each FAN unit audio alarm

Step 1. Press and hold the " (2) " button for 5 seconds.

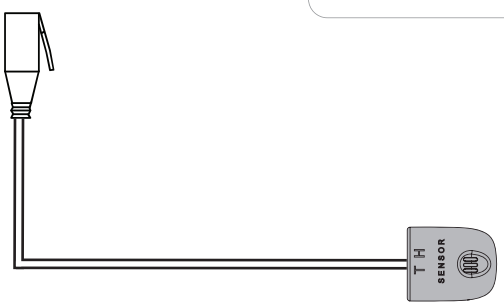
Step 2. Press ◁ or ▷ arrow button to enable / disable the audio alarm



If enable the audio alarm, the buzzer will sound when the outside temperature is over the preset alarm temperature.

< 2.9 > Temperature Sensor

TEMP



Bundled Temp. Sensor

Part no. : **IG - T01 - 2M**

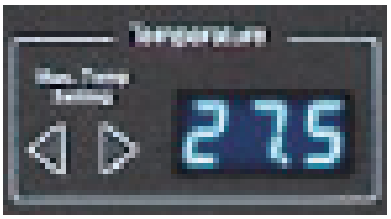
- Plug & Play
- External sensor with 2M cord
- Low profile design with magnetic base for easy affixing to the rack

Optional 4M cord for Temp. Sensor

< 2.10 > Temperature Sensor

		Temp. Sensor
Part no.		**IG-T01**
Temperature Sensitivity	Range	0 to 80°C (32 to 176°F)
	Accuracy	±1°C (±2°F)
	Resolution	0.1°C (0.2°F)
	Response Time	5 to 30 sec
Power Requirement	Voltage	12VDC, powered by sensor port
	Current Consumption	20mA
	Power consumption	0.24 Watt
	Power on indicator	Green
Housing	Chassis & Cover	Plastic
	Color	Dark gray
	Installation	Magnetic base for unrestricted installation
Connection	Cable Length	T sensor w/ 2m cable (standard) T sensor w/ 4m cable (option)
	Cable Specification	4-wired 3.5mm to RJ11
	Cable Color	Beige
Environmental	Operating	0 to 80°C Degree
	Storage	-5 to 80°C Degree
	Humidity	0~100%, non-condensing
Dimensions	Product	30L x 25W x 18H mm
Weight	Net	66g
Supply includes	1	Temperature Sensor
	2	4-wired 3.5mm to RJ11 cable (2m, black color)
Compatibility	InfraPower	W / WS / Wi / WSi series PDU
	InfraSolution	X-2000 series
	InfraGuard	EC-300M & EC-300
Safety Regulatory	FCC & CE certified	
Environmental	RoHS3 & REACH compliant	

< 2.11 > Alarm Temperature Setting



How to set alarm temperature :

- Hold ▷ for 5 seconds.
- Press ◁ ▷ button to set the alaram temperature.

The alarm temp. can be set either by these buttons or software.

How to set temp. unit (Celsius or Fahrenheit) :

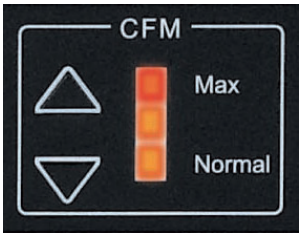
- Hold ◁ for 5 seconds.
- Press ◁ ▷ button to set the temp. unit.

The above steps are only for local LED temp. display.
Users need to set the temp. unit (°C or °F) in the software GUI separately.

< 2.12 > Fan Unit CFM Setting

To save the energy, the fan unit provides a CFM setting by three levels :
- Normal (Approx. 60% of the unit CFM)
- High (Approx. 75% of the unit CFM)
- Max. (Approx. 100% of the unit CFM)

Please set the CFM according to the environmental conditions.



How to set unit CFM :

- Press △ ▽ button to change the fan unit CFM setting.

However, if the outside temperature is over alarm temperature, the unit CFM will be automatically changed to Max. level. Under this condition, all fan kits will be turned on.

< Part 3 > Software
< 3.1 > Key Features

InfraCool Manager ICM-02 is a FREE Air Flow management software to remote & monitor up to 30 Master Groups (max. 16 fan unit levels in each Master Group), total 480 fan units.

5 concurrent user access are bundled for achieving the demand of multi-user / multi-tasking in nowadays' time sharing data center operation.

InfraCool ICM-02

	Features	
Capacity	Master Group (Just 1 IP for 16 fan unit levels)	30
	Fan unit number	480
	Concurrent user	5
Features	Unit CFM (fan speed) Setting	✔
	Auto CFM Control Setting	✔
	Individual Fan ON / OFF	✔
	Fan Unit ON / OFF	✔
	Temp. Monitoring	✔
	Alarm Temp. Setting	✔
	Reporting	✔
	Graphical User Interface	✔
	Remote Access via Web Browser	✔
Software Platform	Windows	✔
Fan Unit Models Support	Master IP Fan Unit (IP dongle built-in)	✔
	Expansion Serial Fan unit	✔

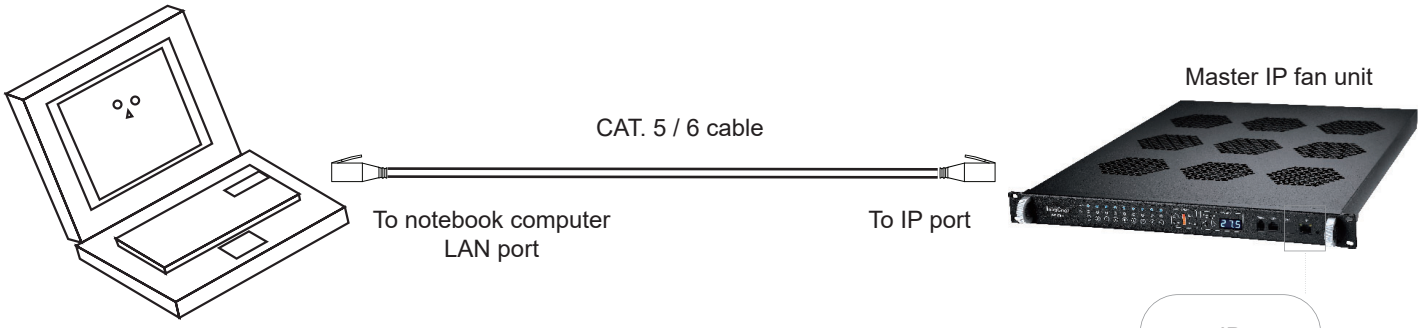
< 3.2 > Master IP Configuration

Please take the following steps to configure the Master IP fan unit :

1. Prepare a notebook computer to download the IP setup utilities from the link :
   http://www.austin-hughes.com/support/utilities/infracool/IPSetupUtilities.msi

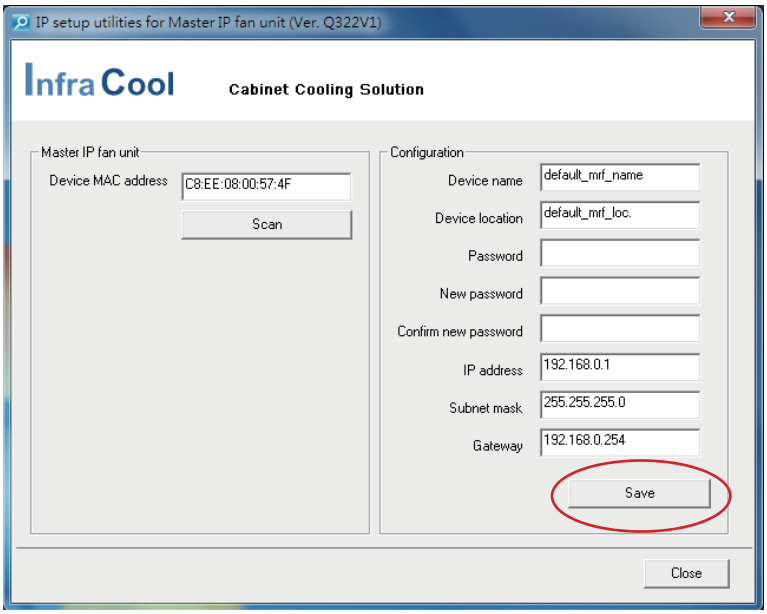
2. Double click the IPSetupUtilities.msi and follow the instruction to complete the installation.

3. Go to each Master IP fan unit with the notebook computer & a piece of CAT. 5 / 6 cable to set up the configuration by IP setup utilities as below. Please take the procedure for all Master IP fan unit **ONE BY ONE**.



Reconnect the Master IP fan unit with the network device (router or hub), after finish the configuration.

Ensure the FAN unit in power ON status



Write down the new IP address & password for < Setup > purpose, refer to P.29

4. Click **Scan** to search the connected Master IP fan unit.
5. Enter the device name in the **" Device name "** field (min. 4 char. / max. 16 char.).
   The default is default_cms_name.
6. Enter the device location in the **" Device location "** field (min. 4 char. / max. 16 char.).
   The default is default_cms_loc.
7. Enter the password in the **" Password "** field for authentication (min. 8 char. / max. 16 char.).
   The default is 00000000.
8. Enter the new password in the **" New password "** field (min. 8 char. / max. 16 char.).
9. Re-enter the new password in the **" Confirm new password "** field.
10. Change the desired **" IP address / Subnet mask / Gateway "**, then click **" Save "** to confirm the setting to Master IP fan unit.
11. The default IP address is as below:
    IP address : 192.168.0.1
    Subnet mask : 255.255.255.0
    Gateway : 192.168.0.254

< 3.3 > Hardware Requirement of the Management PC

Please prepare a management PC with the hardware requirements as below for InfraCool Manager - ICM-02

Recommended hardware requirements :

- Processor: Dual Core 2GHz or above
- Memory: 2GB RAM
- Available Disk Space: 500GB
- Drive: DVD ROM drive
- Display: 1440 x 900 or higher resolution monitor

- The default service port of web server is 80.

- A dedicated PC to run InfraCool Manager - ICM-02 is recommended.

- Make sure the management PC is POWER ON & ICM-02 is under operation. Otherwise, daily data backup will NOT be proceeded.

< 3.4 > Supported OS Platform & Language

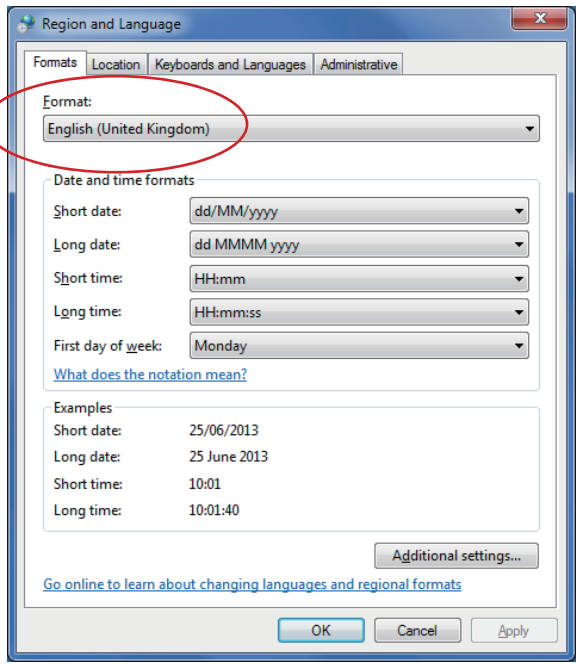
InfraCool Manager - ICM-02 supports the OS platforms & languages as below:

- MS Windows XP Professional with SP3 (32bit only)
- MS Windows 7 Professional with SP1
- MS Windows 7 Ultimate with SP1
- MS Windows Server 2003 R2 Standard Edition with SP2
- MS Windows Server 2008 Standard Edition SP2
- MS Windows Server 2008 R2 Standard Edition SP1

Ensure the user logins in the management PC as a member of "Administrators" Group before ICM-02 Installation and execution.

User can select the following languages under Control Panel > Region and Language in English Edition OS:

1) Arabic (Saudi Arabia)
2) Chinese (Traditional, Hong Kong S.A.R.)
3) Dutch (Netherlands)
4) English (Australia)
5) English (United Kingdom)
6) English (United States)
7) French (France)
8) German (Germany)
9) German (Switzerland)
10) Italian (Italy)
11) Japanese (Japan)
12) Korean (Korea)
13) Norwegian (Norway)
14) Portuguese (Portugal)
15) Russian (Russia)
16) Spanish (Spain)
17) Turkish (Turkey)



< 3.5 > Software Download

InfraCool Manager, ICM-02, is a **AIR FLOW** management software to monitor the temperature change by providing a centralized and remote management platform, and total reporting with detailed logs & event occurrences.

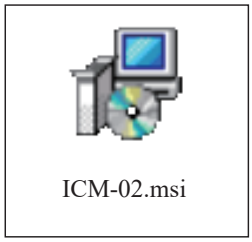
InfraCool Manager ICM-02 can support max. 5 concurrent login users and manage multi- Master group max. 30, hence the concurrent login users can access & Expansion Serial FAN units max. 480 (30 Master groups x 16 level fan units).

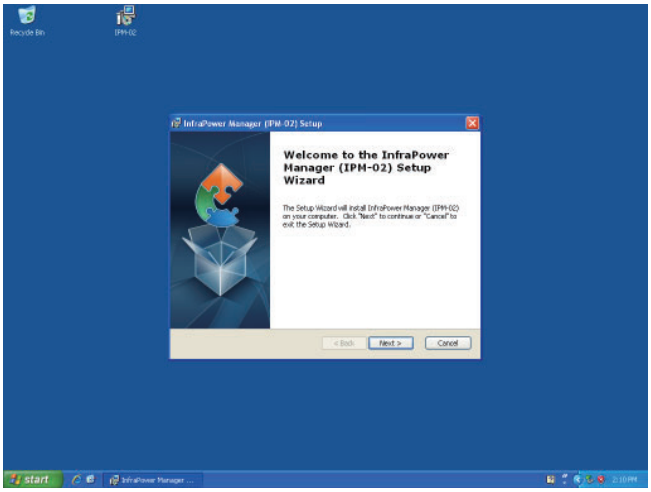
Software download

Please download the InfraCool Manager - ICM-02 to the management PC

from the link **http://www.austin-hughes.com/support/software/infracool/ICM-02.msi**

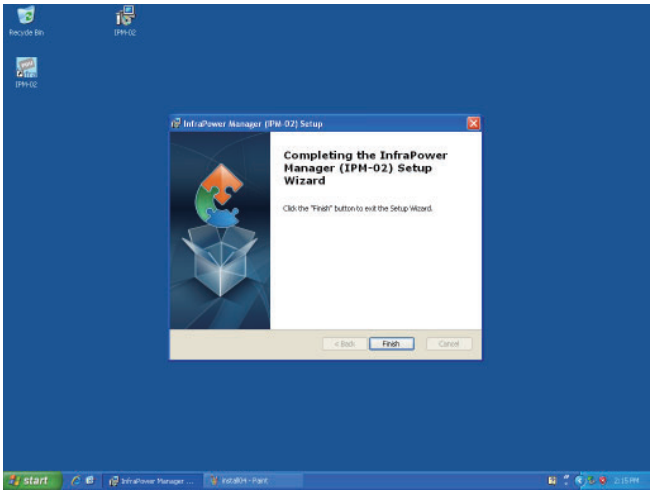
Double click the ICM-02.msi and follow the instruction to complete the installation.





click " **Next** "

click " **Install** "



click " **Finish** "

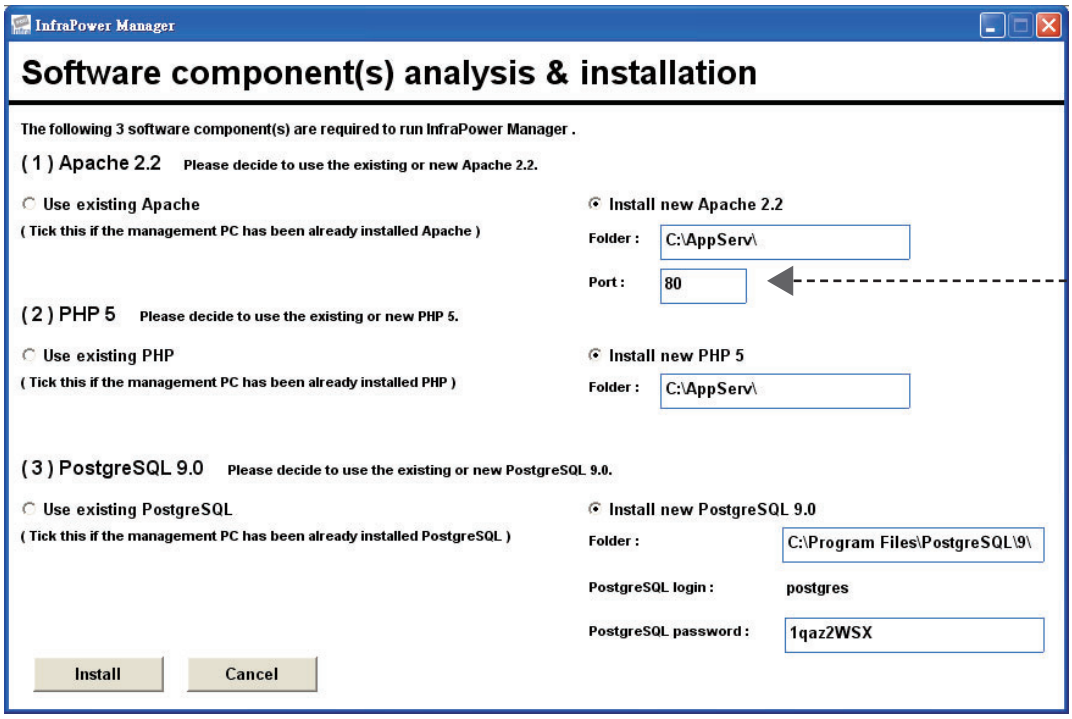
Complete

< 3.6 > First Time Start-up Setting

Step 1. Double click the InfraCool Manager - ICM-02
and follow the instruction to complete start-up setting.

Step 2. Click " **Next** " in " **InfraCool Manager start-up setting** " box

Step 3. Input the fields of the following window & Click " **Install** "



If the port of web server is not 80, please input the appropriate no. here and follow the instruction in " Change port no. of web server" on next page to make the change effective.

PostgreSQL password can be changed by user.
The password **MUST** contain at least three of the following four character groups:

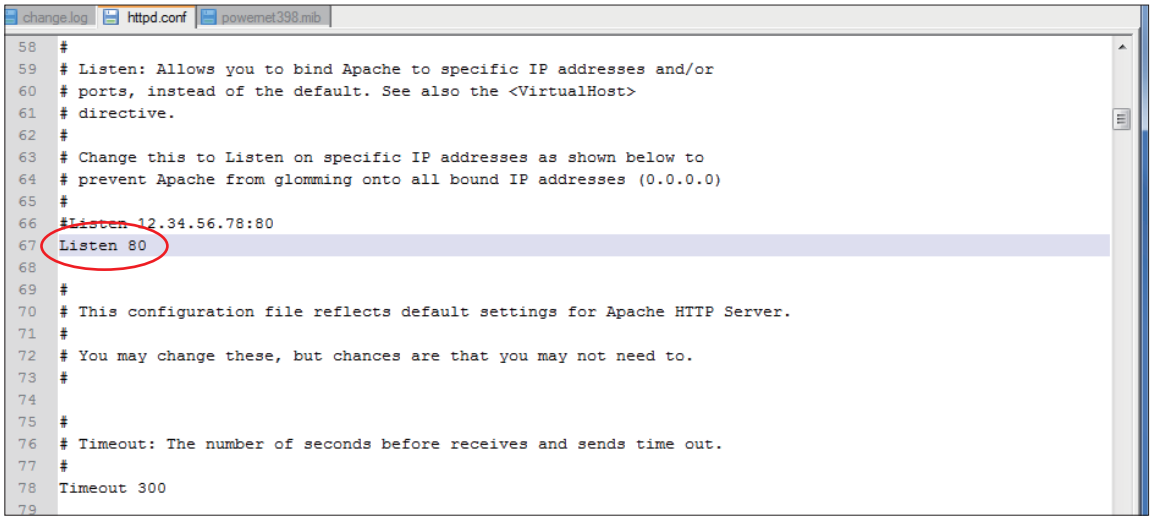
- English uppercase characters (A through Z)
- English lowercase characters (a through z)
- Numerals (0 through 9)
- Non-alphabetic characters (such as !, $, #, %)

Change port no. of web server.

If users want to use another port no. instead of 80, please take the following steps after InfraCool Manager ICM-02 " **First time start-up setting** " is completed.

Step 1. Go to the path of web server being installed. (Default: C:\AppServ\Apache2.2\conf\ )

Step 2. Open " **httpd.conf** " & change " **Listen 80** " to " **Listen xx** " where xx means the port users want to use save the change



Step 3. Restart Apache services.
Go to Control Panel > Administrative Tools > Services > Apache2.2 & Click " **Restart** "

Complete

< Part 4 > System Setup & Remote Access

< 4.1 > System setup

Users can follow below step 1 - 3 to access the management PC and InfraCool Manager ICM-02

Step 1. Open Internet Explorer (I.E.), version 8.0 or above

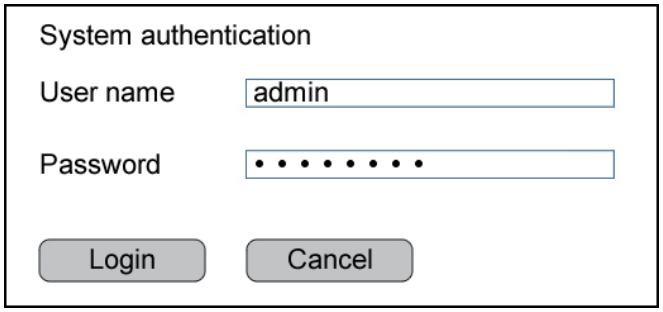
Step 2. Enter the URL of management PC into the address bar

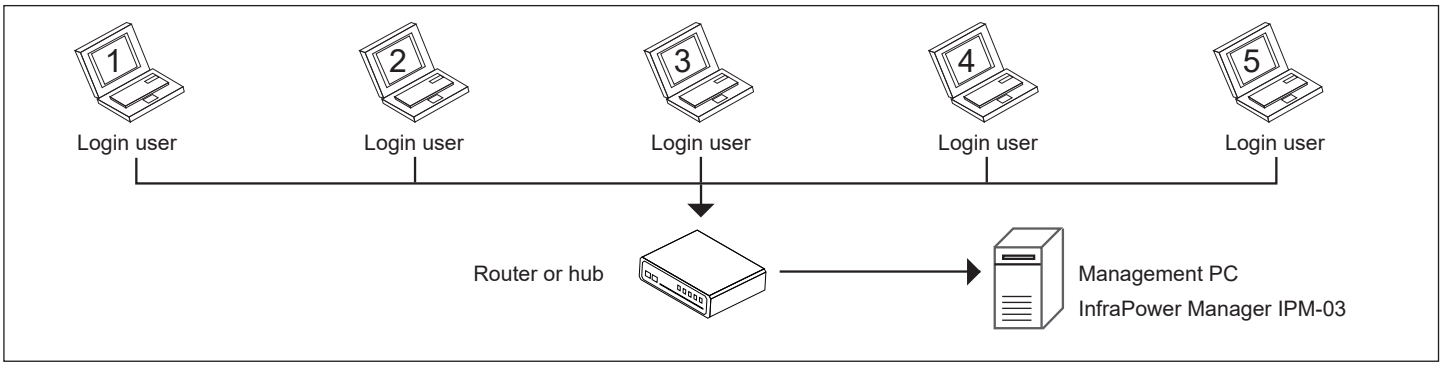
(If fail to access, please ask MIS to check if the port for web server is enable. Default port : 80)

e.g. http://192.168.0.1/ICM-02/

Step 3. Enter " **User name** " . Default is " **admin** "

Enter " **Password** " . Default is " **00000000** "





Then users should go to < **User** >, < **Setup** >, < **Alarm** >, < **General** > & < **Backup** > for initial system setup

Only Administrator is authorised to access < **User** >, < **Setup** >, < **Alarm** >, < **General** > & < **Backup** >

< 4.1 > System setup

In < **User** > page, administrator can create 4 more operators.

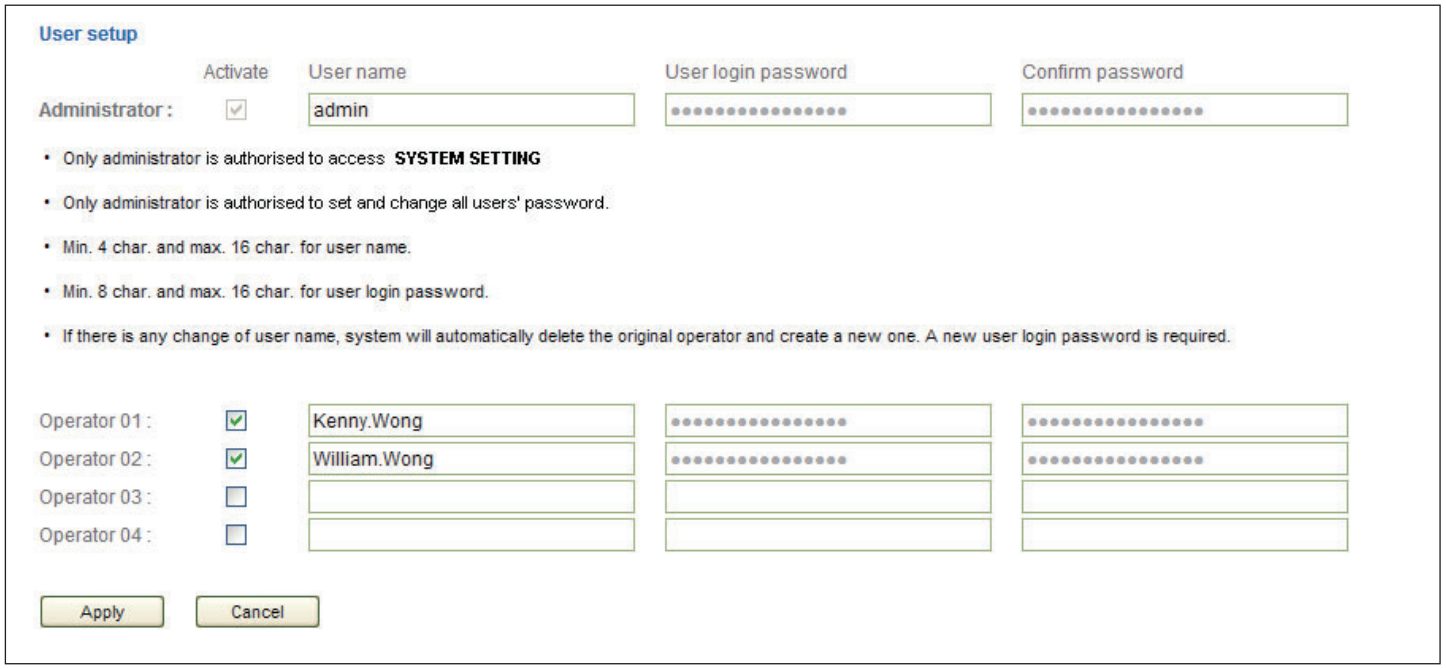
Step 1. Tick " **Operator 1:** "

Step 2. Input " **User name** " & " **User login password** "

Step 3. Input user login password in " **Confirm password** " again

Step 4. Repeat Step 1 to 3 for other operators if necessary

Step 5. Click " **Apply** " to finish the user setup



< 4.1 > System setup

In **< Setup >** page, administrator can activate max. 30 Master groups & set the group command password

Step 1. " Activate " Master IP group 01

Step 2. Input **" IP address "** & **" password "** of the Master IP group 01

Please refer to Step. 10 & 7 of < 3.2 > Master IP Configuration respectively.

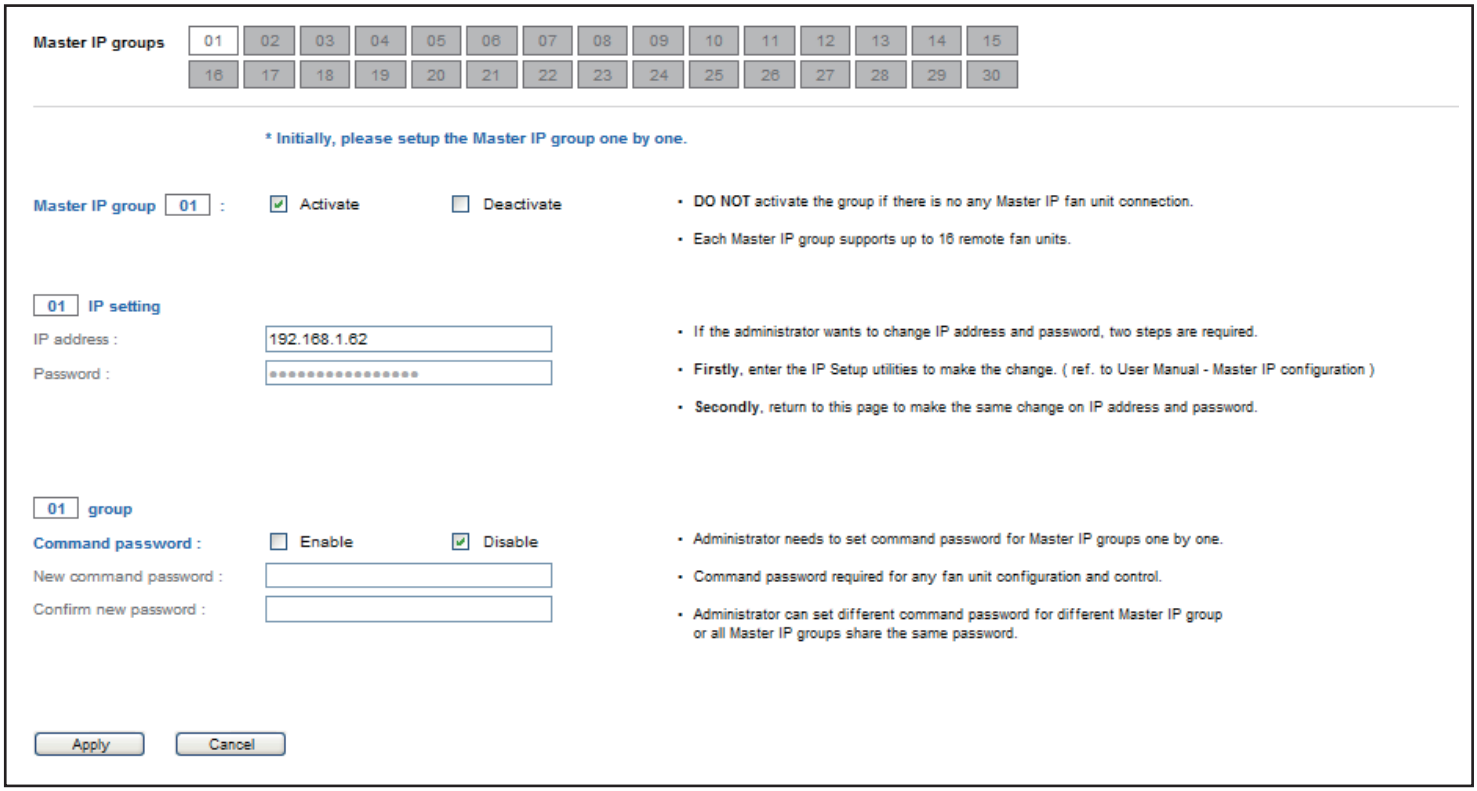
Step 3. " **Enable** " Command password

Step 4. Input " **New command password** ". Default is " **00000000** "

Step 5. Input new command password in " **Confirm new password** " again.

Step 6. Click " **Apply** " to finish the Master IP group setup

Step 7. Repeat step 1 to 6 for other Master IP groups if necessary



< 4.1 > System setup

In < **Alarm** > , administrator can configure the alarm email server & max. 5 email recipients to receive alarm notifications from the software

Step 1. “ **Enable** “ alarm email

Step 2. Input “ **SMTP server** “ , “ **SMTP port** “

Step 3. Input sender email account in “ **User email** “

Step 4. **“ Enable “** or **“ Disable “** the **“ SMTP authentication “**

Step 5. Input **“ User name “** and **“ Password “**

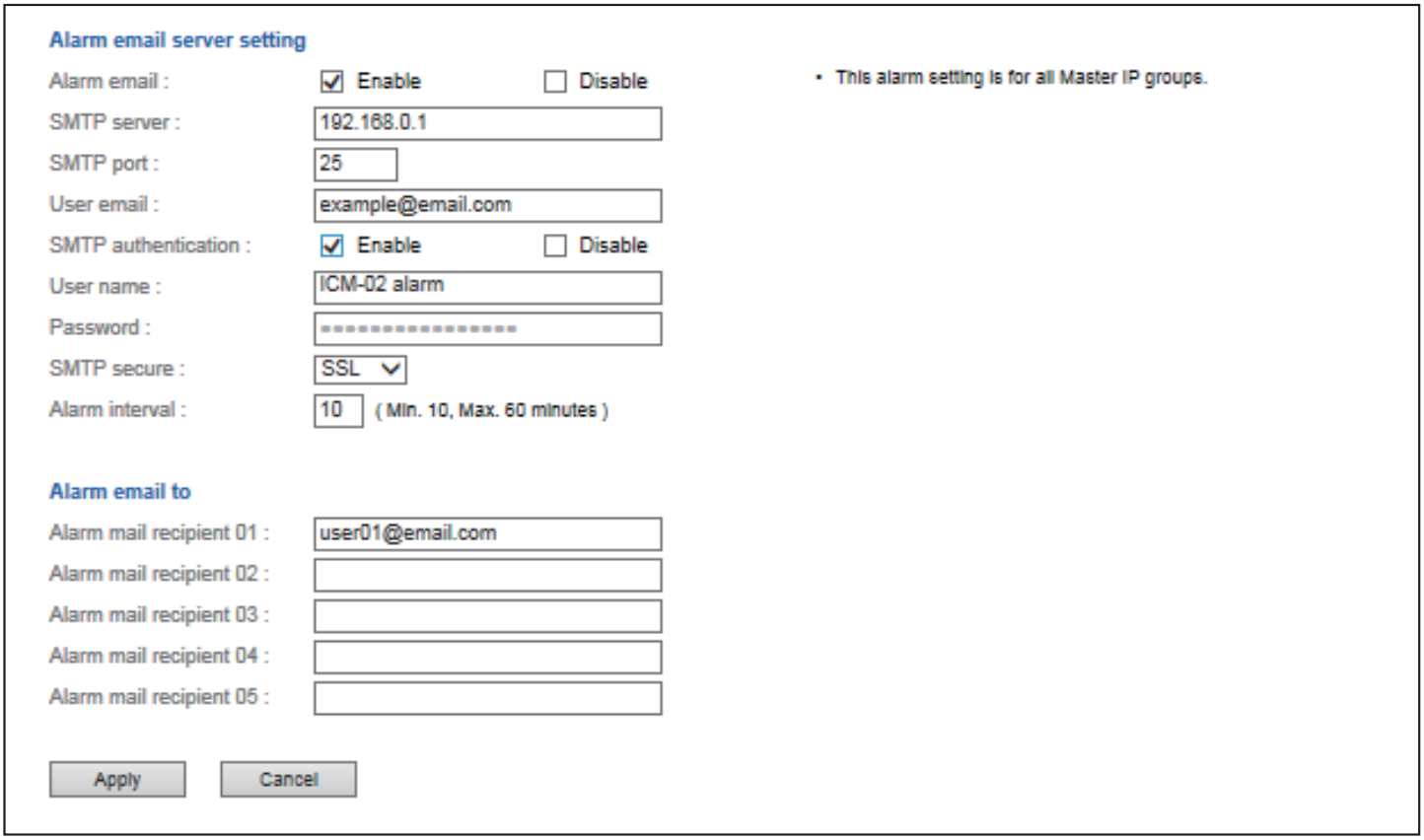
Step 6. Select the **“ SMTP secure “** (None / SSL / TLS)

Step 7. Input the **“ Alarm interval “**

Step 8. Input the alarm recipient email account in **“ Alarm mail recipient 01 “**

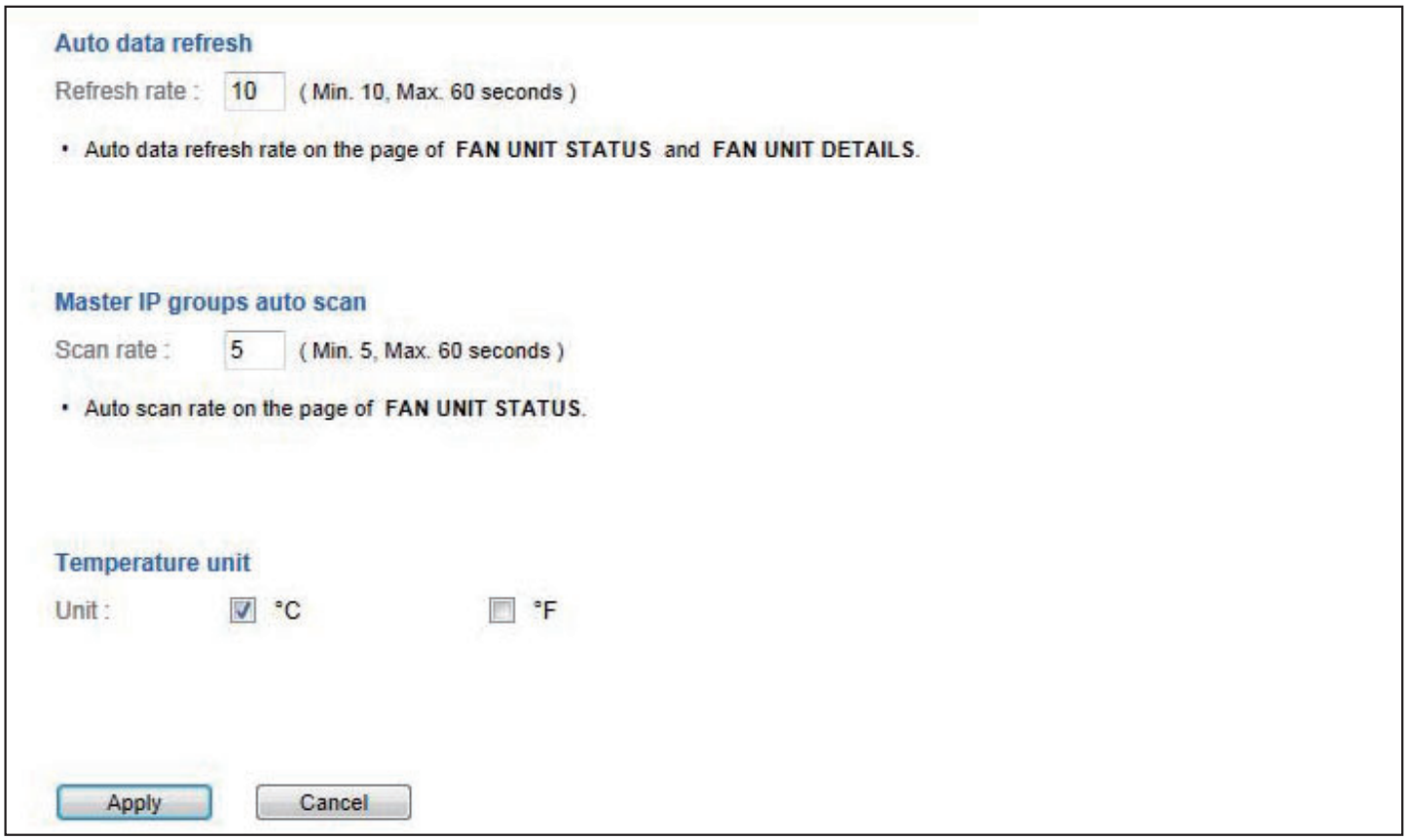
Step 9. Repeat step 8 for other alarm recipients

Step 10. Click **“ Apply “** to fi nish the alarm email server setting

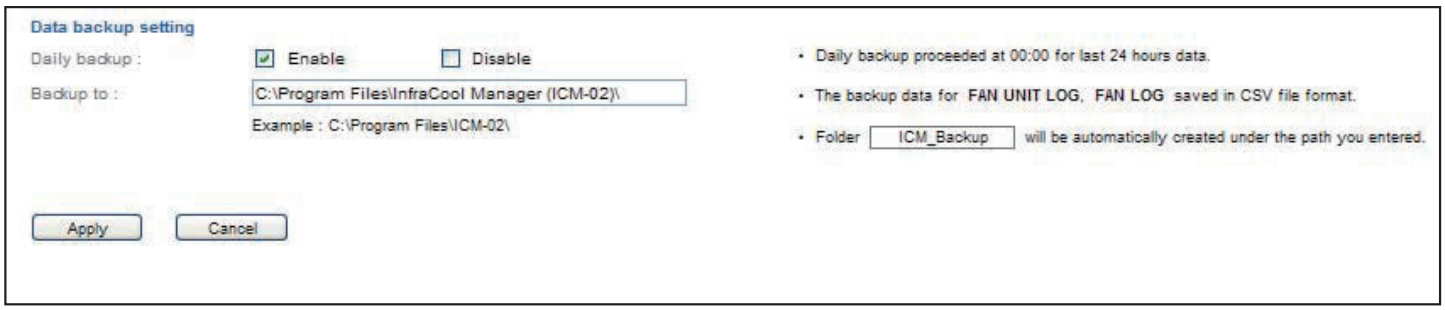


< 4.1 > System setup

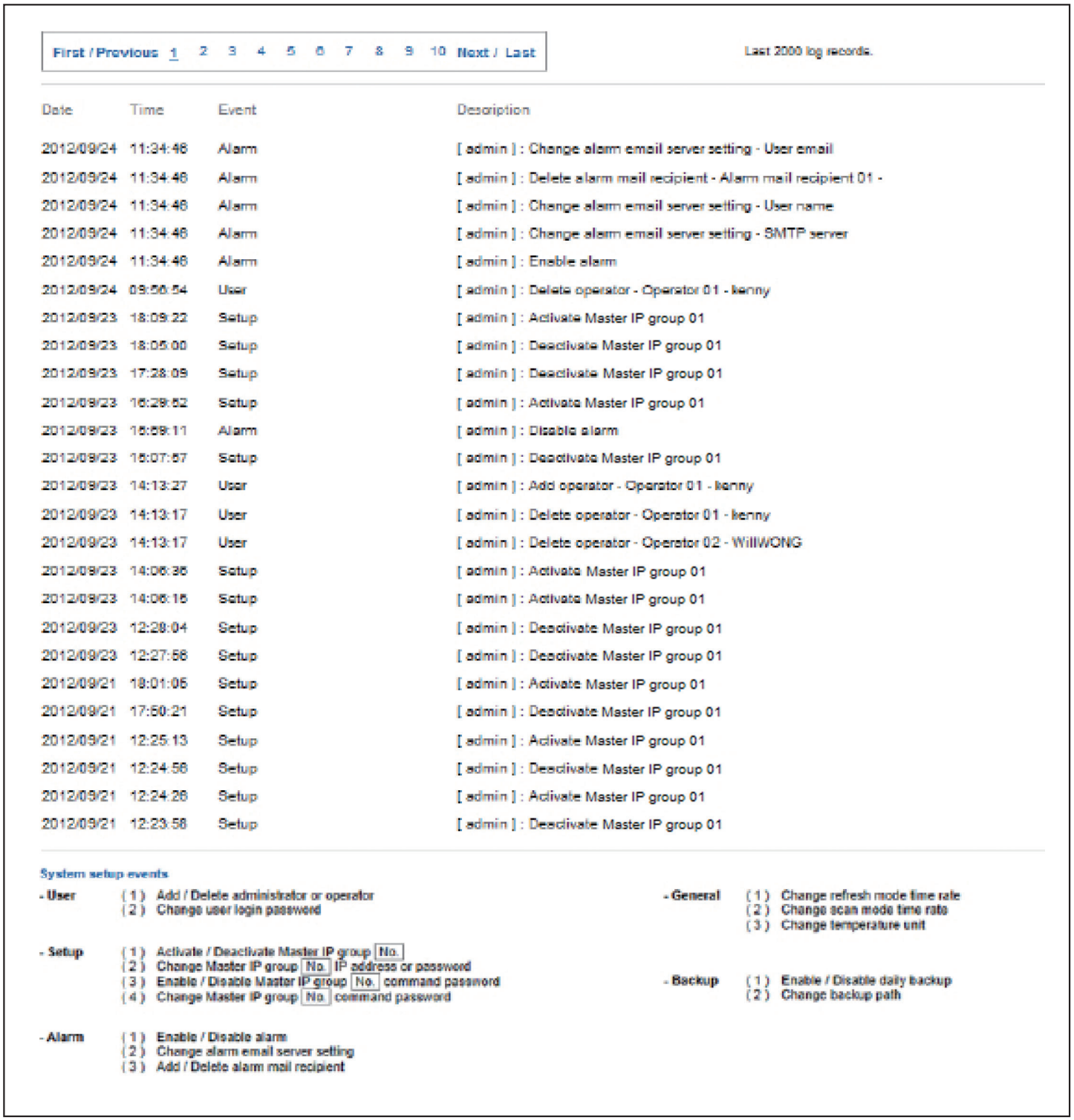
In < **General** > , administrator can change the “ **Refresh rate** “ , “ **Scan rate** “ & “ **Temperature unit** “ across all Master groups



In < **Backup** > , administrator can “ **Enable** “ or “ **Disable** “ the daily data backup. When “ **Enable** “, the backup path can be changed



< Sys log > provides last 2000 events in < User >, < Setup >, < Alarm >, < General > & < Backup > .



First / Previous 1 2 3 4 5 6 7 8 9 10 Next / Last

Last 2000 log records.

Date	Time	Event	Description
2012/09/24	11:34:46	Alarm	[admin] : Change alarm email server setting - User email
2012/09/24	11:34:46	Alarm	[admin] : Delete alarm mail recipient - Alarm mail recipient 01 -
2012/09/24	11:34:46	Alarm	[admin] : Change alarm email server setting - User name
2012/09/24	11:34:46	Alarm	[admin] : Change alarm email server setting - SMTP server
2012/09/24	11:34:46	Alarm	[admin] : Enable alarm
2012/09/24	09:56:54	User	[admin] : Delete operator - Operator 01 - kenny
2012/09/23	18:09:22	Setup	[admin] : Activate Master IP group 01
2012/09/23	18:05:00	Setup	[admin] : Deactivate Master IP group 01
2012/09/23	17:28:09	Setup	[admin] : Deactivate Master IP group 01
2012/09/23	16:29:52	Setup	[admin] : Activate Master IP group 01
2012/09/23	15:59:11	Alarm	[admin] : Disable alarm
2012/09/23	15:07:57	Setup	[admin] : Deactivate Master IP group 01
2012/09/23	14:13:27	User	[admin] : Add operator - Operator 01 - kenny
2012/09/23	14:13:17	User	[admin] : Delete operator - Operator 01 - kenny
2012/09/23	14:13:17	User	[admin] : Delete operator - Operator 02 - WillWONG
2012/09/23	14:06:36	Setup	[admin] : Activate Master IP group 01
2012/09/23	14:06:16	Setup	[admin] : Activate Master IP group 01
2012/09/23	12:28:04	Setup	[admin] : Deactivate Master IP group 01
2012/09/23	12:27:58	Setup	[admin] : Deactivate Master IP group 01
2012/09/21	18:01:05	Setup	[admin] : Activate Master IP group 01
2012/09/21	17:50:21	Setup	[admin] : Deactivate Master IP group 01
2012/09/21	12:25:13	Setup	[admin] : Activate Master IP group 01
2012/09/21	12:24:58	Setup	[admin] : Deactivate Master IP group 01
2012/09/21	12:24:26	Setup	[admin] : Activate Master IP group 01
2012/09/21	12:23:58	Setup	[admin] : Deactivate Master IP group 01

System setup events

- User
  - (1) Add / Delete administrator or operator
  - (2) Change user login password
- Setup
  - (1) Activate / Deactivate Master IP group No.
  - (2) Change Master IP group No. IP address or password
  - (3) Enable / Disable Master IP group No. command password
  - (4) Change Master IP group No. command password
- Alarm
  - (1) Enable / Disable alarm
  - (2) Change alarm email server setting
  - (3) Add / Delete alarm mail recipient
- General
  - (1) Change refresh mode time rate
  - (2) Change scan mode time rate
  - (3) Change temperature unit
- Backup
  - (1) Enable / Disable daily backup
  - (2) Change backup path

< 4.2 > Remote Access

After administrator completes < System Setup >, up to 4 additional users can access the management PC remotely. User can follow the steps below to access management PC & InfraCool Manager ICM-02

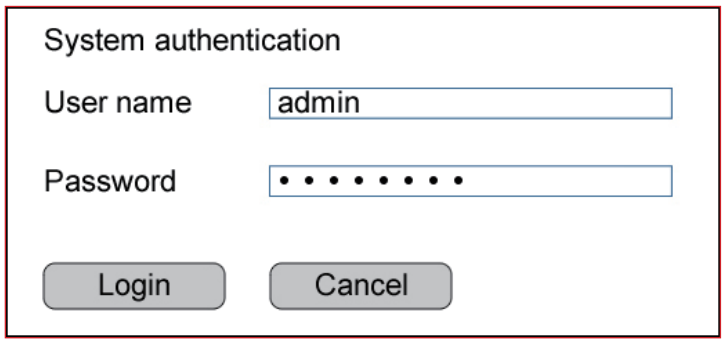
Step 1. Add the port of web server in the firewall settings of the management PC.
- Open " **Control Panel** "
- Select " **Windows Firewall** "
- Select " **Advanced settings** "
- Right Click " **Inbound Rules** " & select " **New Rule…** "
- Select " **Port** " & Click " **Next>** "
- Select " **TCP** " then " **All local port**s " & Click " **Next>** "
- Select " **Allow the connection** " & Click " **Next>** "
- Tick all three options & Click " **Next>** "
- Input the " **Name** " & " **Description** " of the port & Click " **Finish** "

Step 2. Open the web browser of remote client PC

Step 3. Input the URL of InfraCool Manager ICM-02 in the address bar
e.g. http://192.168.0.1/ICM-02/

If the port no. of web server is not 80, please enter the appropriate port no. follow the IP address e.g. http://192.168.0.1:81/ICM-02/

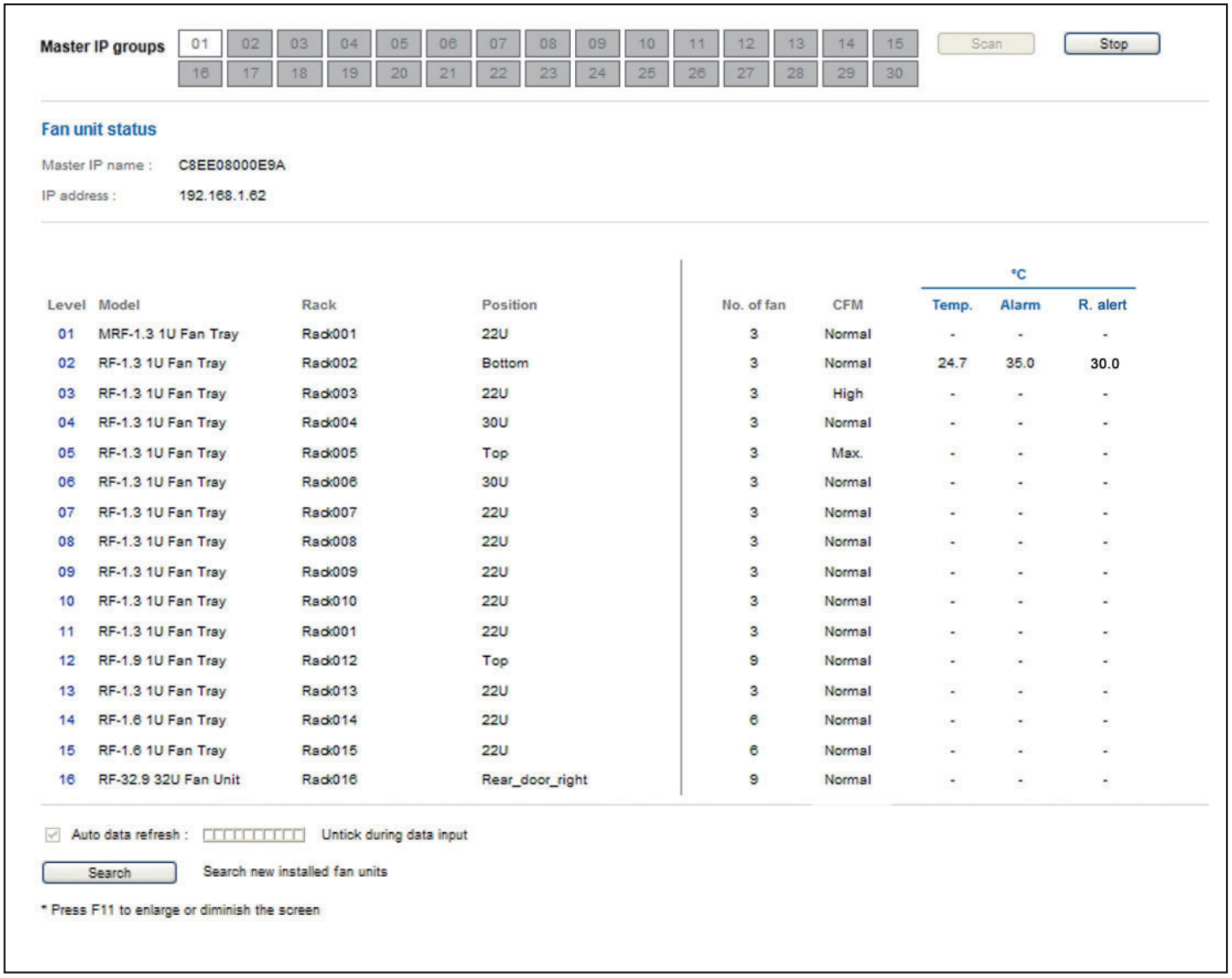
Step 4. System authentication page pops up automatically.
Input " **User name** ", " **Password** " & Click " **Login** "



< Part 5 > Software Usage & Operation
< 5.1 > Status

< Status > provides

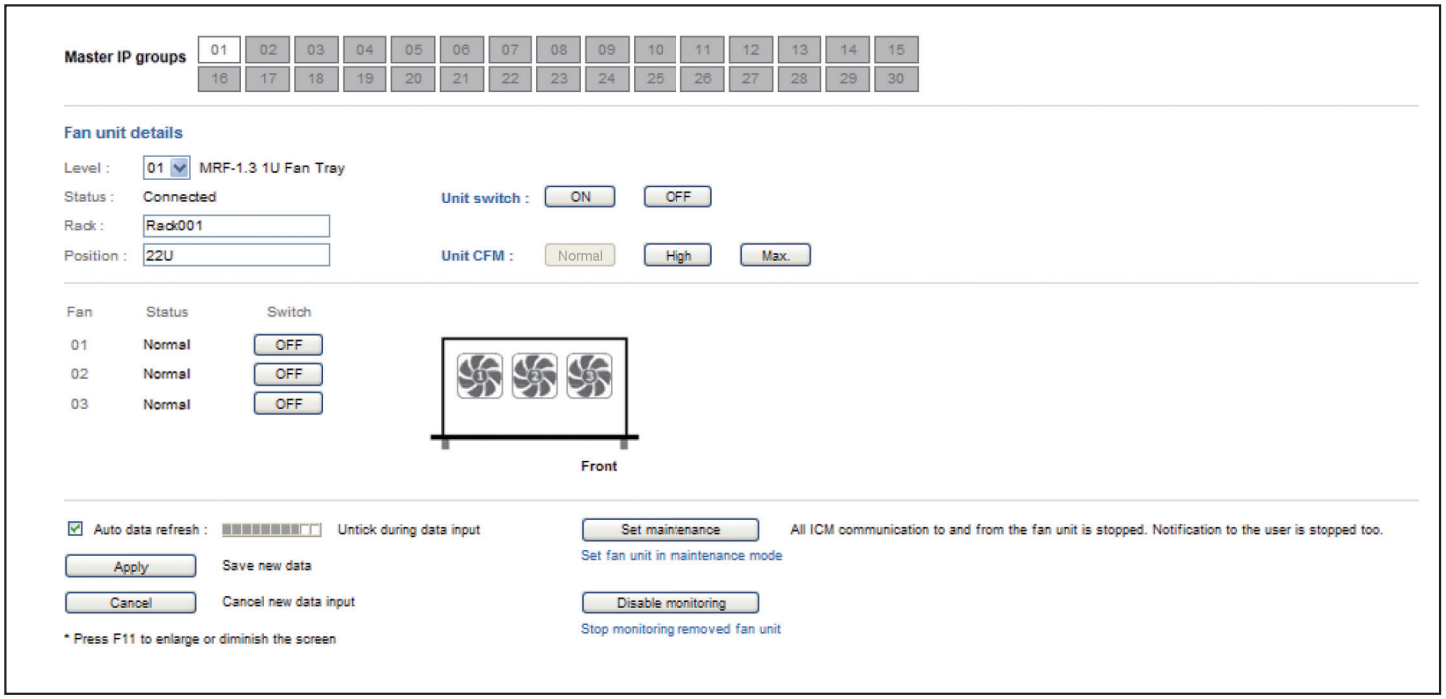
- **< Search >** function to search new installed fan units in each Master group.
- Scan function to monitor the fan units' status of each Master group **ONE by ONE**



< 5.2 > Details

In **< Details >**,

- Change " Rack " and " **Position** " of Fan unit
- Switch ON / OFF fan unit
- Change fan unit CFM
- Switch ON / OFF individual fan
- Click " **Apply** " to finish the above settings



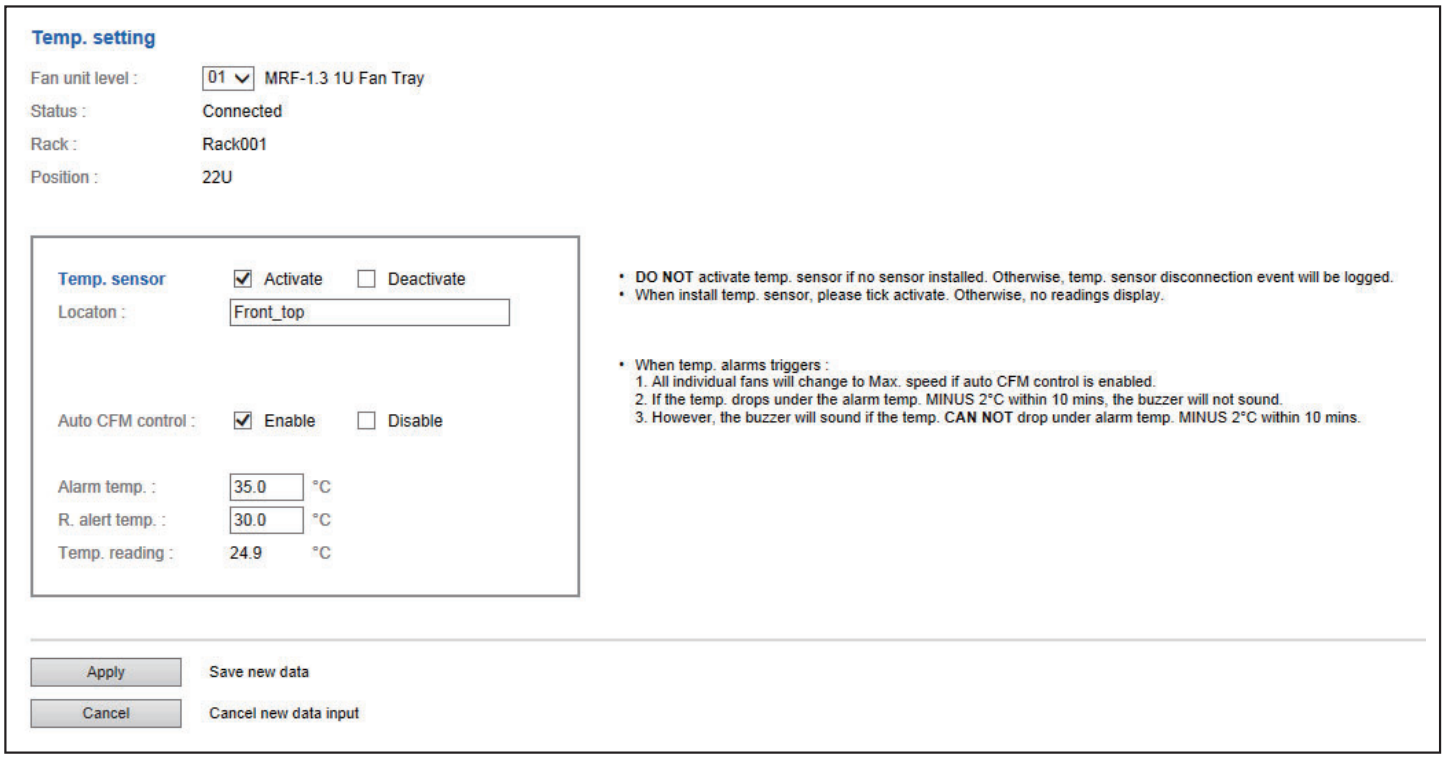
< 5.3 > Temp setting

In < **Temp setting** >,

- " **Activate** " or " **Deactivate** " Temp sensor
- Change " **Location** ", "**Alarm Setting** " & " **R. alert setting** " of Temp sensor
- " **Enable** " or " **Deactivate** " auto CFM control
- Click " **Apply** " to finish the above settings

The default Temp setting is Deactivate .

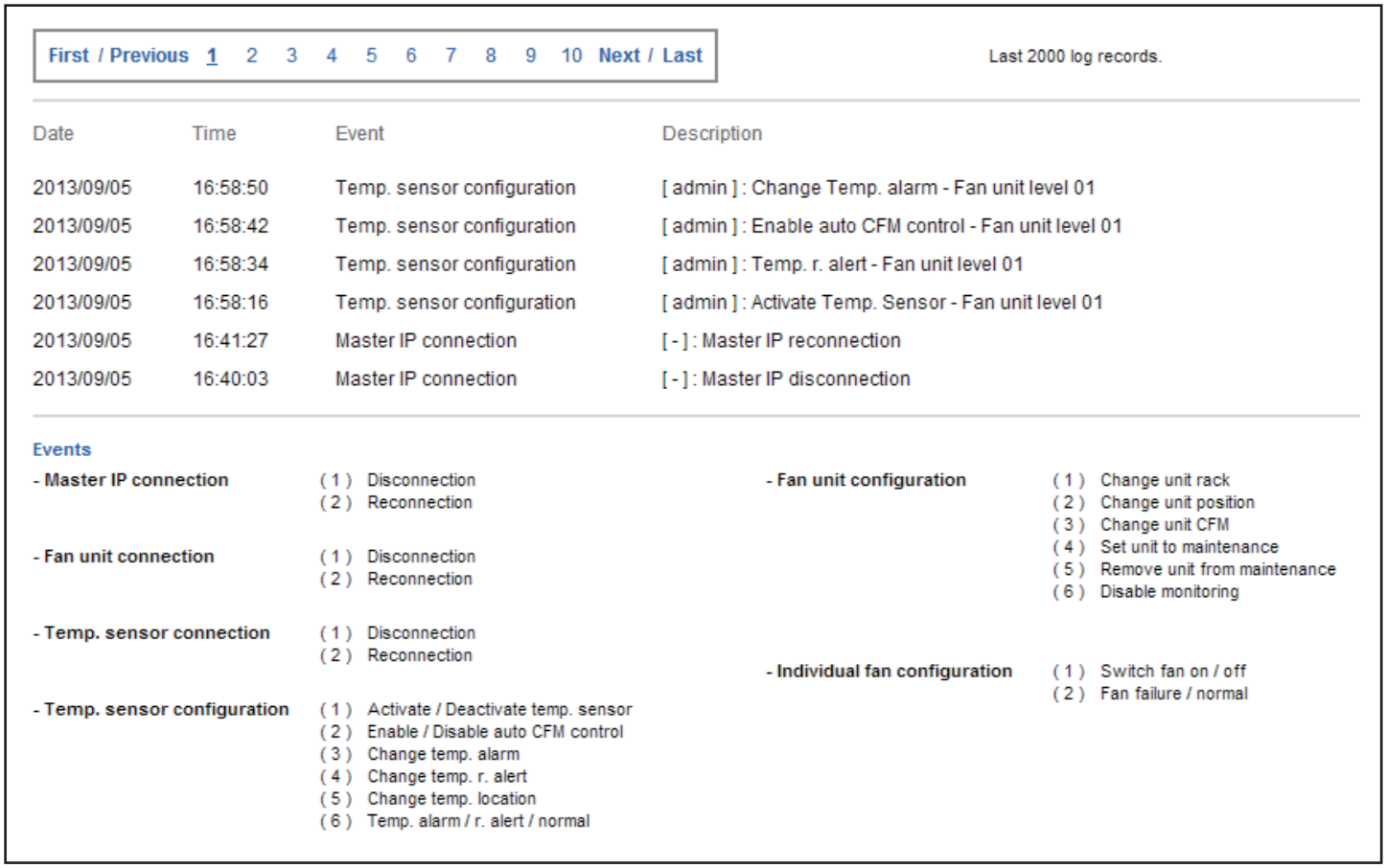
- When install Temp sensor, please tick Activate . Otherwise, no readings display.
- DON'T activate Temp sensor if no sensor installed.



< Part 6 > Events / Log / Report

< 6.1 > Event

< Event > provides past 2000 events about FAN unit's configuration & connection in a certain Master Group.



First / Previous 1 2 3 4 5 6 7 8 9 10 Next / Last

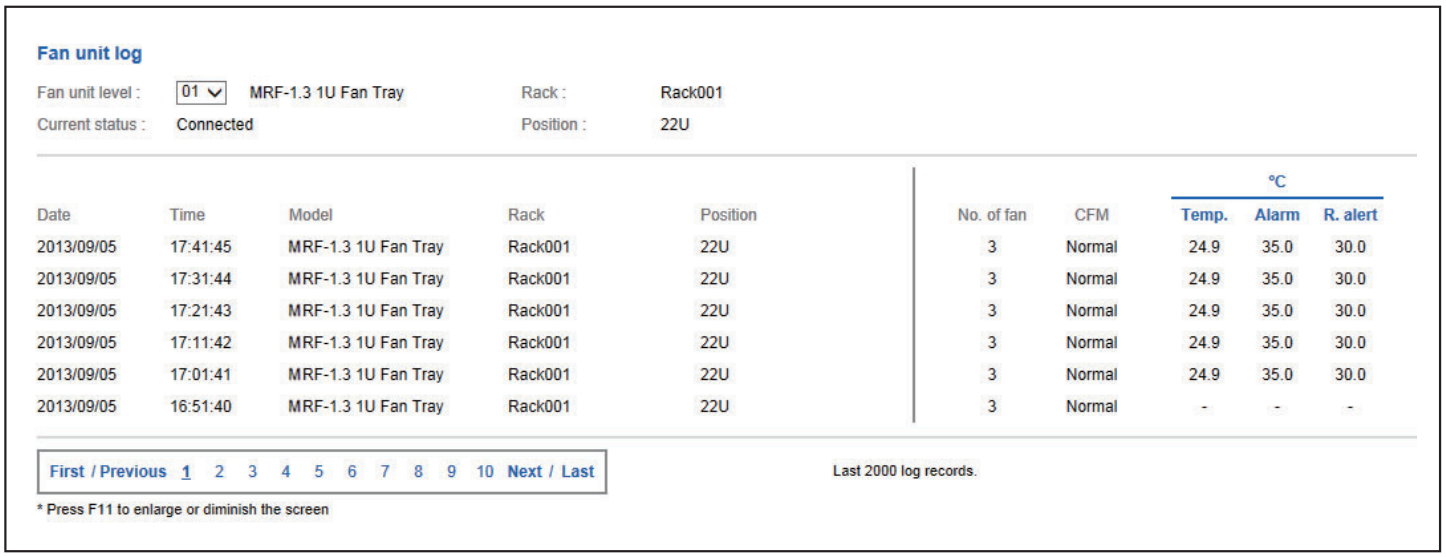
Last 2000 log records.

Date	Time	Event	Description
2013/09/05	16:58:50	Temp. sensor configuration	[admin] : Change Temp. alarm - Fan unit level 01
2013/09/05	16:58:42	Temp. sensor configuration	[admin] : Enable auto CFM control - Fan unit level 01
2013/09/05	16:58:34	Temp. sensor configuration	[admin] : Temp. r. alert - Fan unit level 01
2013/09/05	16:58:16	Temp. sensor configuration	[admin] : Activate Temp. Sensor - Fan unit level 01
2013/09/05	16:41:27	Master IP connection	[-] : Master IP reconnection
2013/09/05	16:40:03	Master IP connection	[-] : Master IP disconnection

Events

- **Master IP connection**
  - (1) Disconnection
  - (2) Reconnection
- **Fan unit connection**
  - (1) Disconnection
  - (2) Reconnection
- **Temp. sensor connection**
  - (1) Disconnection
  - (2) Reconnection
- **Temp. sensor configuration**
  - (1) Activate / Deactivate temp. sensor
  - (2) Enable / Disable auto CFM control
  - (3) Change temp. alarm
  - (4) Change temp. r. alert
  - (5) Change temp. location
  - (6) Temp. alarm / r. alert / normal
- **Fan unit configuration**
  - (1) Change unit rack
  - (2) Change unit position
  - (3) Change unit CFM
  - (4) Set unit to maintenance
  - (5) Remove unit from maintenance
  - (6) Disable monitoring
- **Individual fan configuration**
  - (1) Switch fan on / off
  - (2) Fan failure / normal

< FAN unit log > provides past 2000 FAN unit log records about a certain FAN unit by the user's selection. The software will generate a FAN unit log record in every 10 mins.



Fan unit log

Fan unit level : 01 MRF-1.3 1U Fan Tray Rack : Rack001

Current status : Connected Position : 22U

Date	Time	Model	Rack	Position	No. of fan	CFM	°C Temp.	°C Alarm	°C R. alert
2013/09/05	17:41:45	MRF-1.3 1U Fan Tray	Rack001	22U	3	Normal	24.9	35.0	30.0
2013/09/05	17:31:44	MRF-1.3 1U Fan Tray	Rack001	22U	3	Normal	24.9	35.0	30.0
2013/09/05	17:21:43	MRF-1.3 1U Fan Tray	Rack001	22U	3	Normal	24.9	35.0	30.0
2013/09/05	17:11:42	MRF-1.3 1U Fan Tray	Rack001	22U	3	Normal	24.9	35.0	30.0
2013/09/05	17:01:41	MRF-1.3 1U Fan Tray	Rack001	22U	3	Normal	24.9	35.0	30.0
2013/09/05	16:51:40	MRF-1.3 1U Fan Tray	Rack001	22U	3	Normal	-	-	-

First / Previous 1 2 3 4 5 6 7 8 9 10 Next / Last

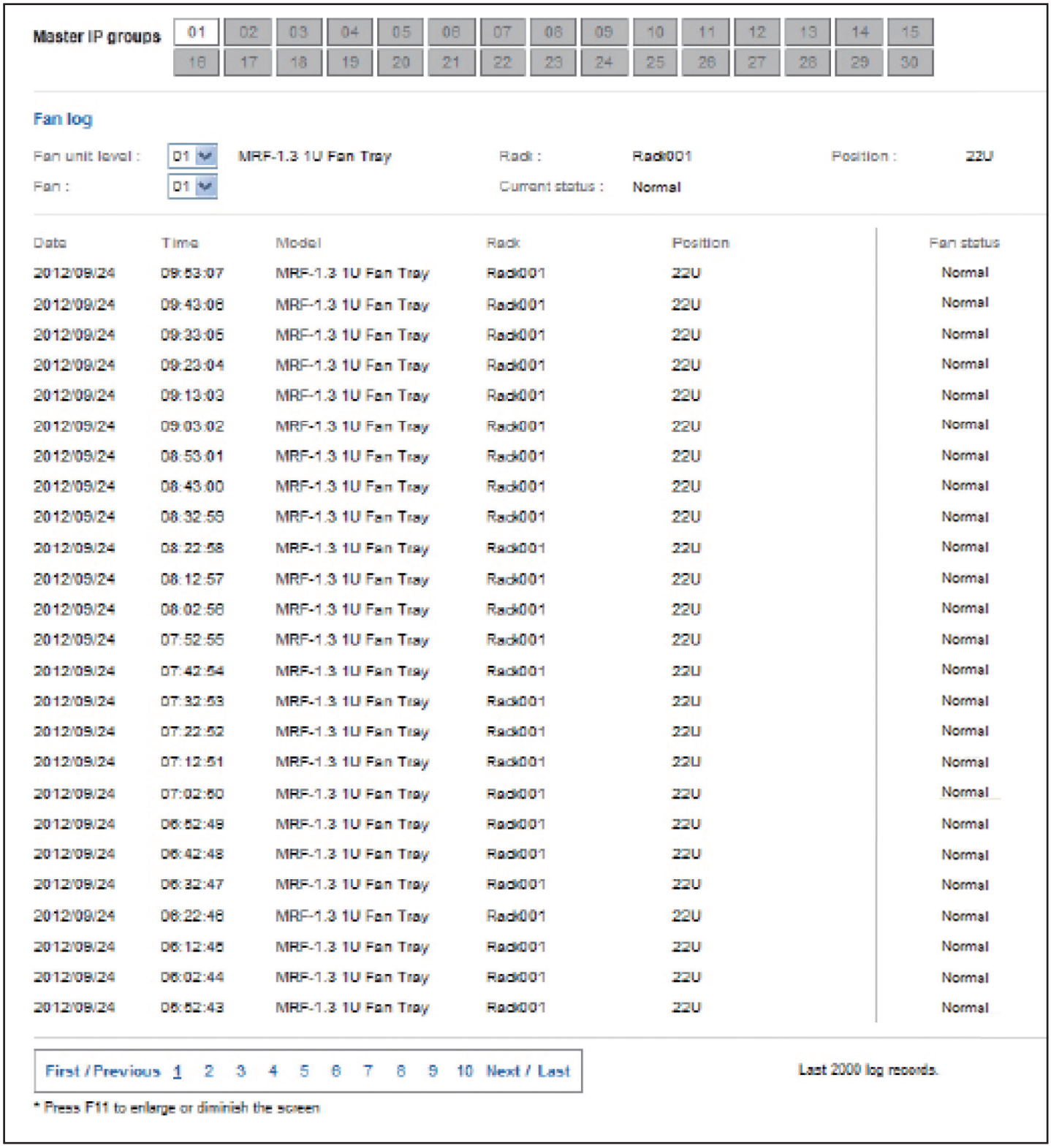
Last 2000 log records.

* Press F11 to enlarge or diminish the screen

< 6.2 > FAN log

< FAN log > provides past 2000 FAN log records about an individual fan of specific fan unit by the user's selection.

The software will generate a FAN log record in every 10 mins.



Master IP groups: 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Fan log

Fan unit level : 01 MRF-1.3 1U Fan Tray Rack : Rack001 Position : 22U

Fan : 01 Current status : Normal

Date	Time	Model	Rack	Position	Fan status
2012/09/24	09:53:07	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	09:43:06	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	09:33:05	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	09:23:04	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	09:13:03	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	09:03:02	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	08:53:01	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	08:43:00	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	08:32:59	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	08:22:58	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	08:12:57	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	08:02:56	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	07:52:55	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	07:42:54	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	07:32:53	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	07:22:52	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	07:12:51	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	07:02:50	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	06:52:49	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	06:42:48	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	06:32:47	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	06:22:46	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	06:12:45	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	06:02:44	MRF-1.3 1U Fan Tray	Rack001	22U	Normal
2012/09/24	05:52:43	MRF-1.3 1U Fan Tray	Rack001	22U	Normal

First / Previous 1 2 3 4 5 6 7 8 9 10 Next / Last Last 2000 log records.

* Press F11 to enlarge or diminish the screen

< 6.3 > Report

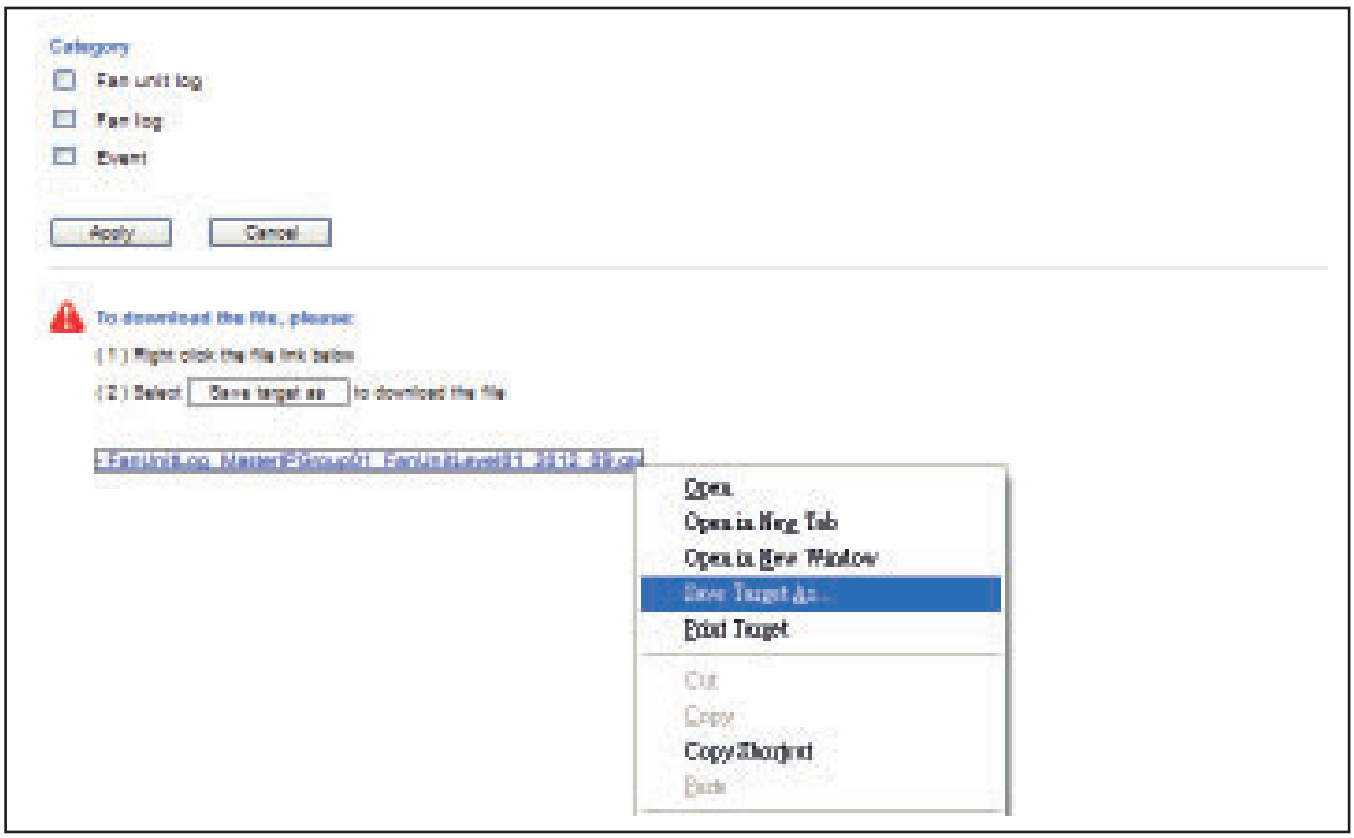
< Report > provides monthly report for Fan unit log, Fan log & Event log which can be export to csv format.

Please follow the steps below to export the log category you want :

Step 1. Select the category, period & target.

Step 2. Click " **Apply** " & Click " **OK** " from the pop up window

Step 3. Right click the file name below & select Save target as to download the log file.



Step 4. Click " **Close** " to complete or " **Open** " to view the content of log file

Complete

< Part 7 > SNMP

< 7.1 > SNMP Management

The Master IP Fan unit WEBUI (CMS-03-S) can manage the connected Intelligent Expansion Fan Unit in a single daisy chain up to 16 levels via SNMP v1/v2 or v3
(Simple Network Management Protocol)

Only for Master IP fan unit with built-in IPD-03-S

(I). Accessing MIB Files

Step 1. Click the following link to go to the mangement software download page :
http://www.austin-hughes.com/resources/infracool/software

Step 2. Select the appropriate MIB file of the Fan Unit series

(II). Enabling SNMP Support

The following procedure summarizes how to enable the Master IP fan unit for SNMP support.

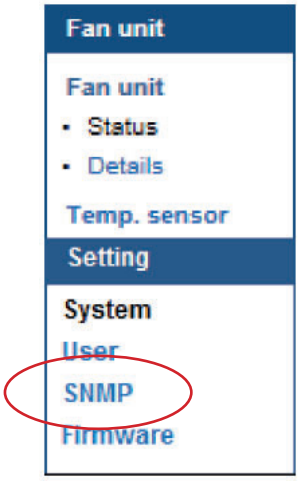
Step 1. Connect the Master IP Fan Unit to a computer.
(Please refer to < 3.2 > Master IP Configuration)

Step 2. Open the Internet Explorer (I.E.) version 11.0

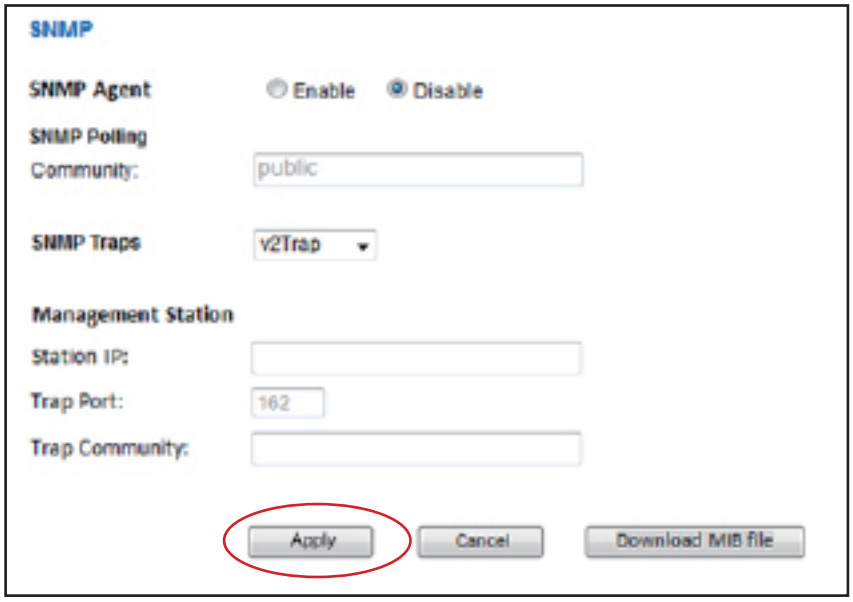
Step 3. Enter the configured Master IP Fan Unit address into the I.E. address bar.
Default IP address is " **192.168.0.1** "

Step 4. Enter " **Login name** " & " **Password** ". Default login name : **" 00000000 "**
To change Login name of Master IP Fan unit WEBUI (CMS-03-S),
please refer to CMS-03-S user manual P.28 < Login > for details.
Password: the one you set in Step 7 of < 3.2 > Master IP Configurationt

Step 5. Select the SNMP from the left navigation



Step 6. The SNMP Settings window appears as below:



Step 7. Click " **Enable** " in " **SNMP Agent** " to start the SNMP agent service

Step 8. Input " **Read Community** ". Default is " **public** "

Step 9. Input " **Write Community** ". Default is " **private** "

Step 10. Select " **disabled** " or " **V2Trap** " in " **SNMP Traps** "

If select " **V2Trap** " , please input IP address of the SNMP management station in " **Station IP:** "

Step 11. Click " **Apply** " to finish the SNMP settings

< Part 8 > FAQ

< 8.1 > InfraCool Manager - ICM-02

1. What is InfraCool Manager?

The InfraCool Manager is a Windows based system to consolidate management of max. 480 FAN units via 30 Master groups, using a simple web interface which monitors temp. status of racks in the data center. It also provides the detailed FAN unit and event logged records, and sends alarm email once temp. over alarm level.
Please find the link below:

http://www.austin-hughes.com/support/software/infracool/ICM-02.msi

2. Which OS platform does ICM-02 support?

- MS Windows XP Professional with SP3 (32bit only)
- MS Windows 7 Professional with SP1
- MS Windows 7 Ultimate with SP1
- MS Windows Server 2003 R2 Standard Edition with SP2
- MS Windows Server 2008 Standard Edition SP2
- MS Windows Server 2008 R2 Standard Edition SP1

Ensure the user logins in the management PC as a member of "Administrators" Group before ICM-02 Installation and execution.

3. Which database does the ICM-02 support?

PostgreSQL

4. What is the PostgreSQL default password for ICM-02?

1qaz2WSX

5. How can I receive alarm email and get full log report?

Ensure that ICM-02 is executed and the alarm server is configured properly and being enabled.

6. What is the default login name & password of ICM-02?

Default login name "admin" & password "00000000"

7. What is the command password of ICM-02?

Each Master Group has its command password. It will be requested for any FAN unit configuration and control. The administrator can set different command password for different Master Group or all Master Groups use the same password.

8. The FAN units can't be found by ICM-02?

Please double check the cable connection and the level setting of each FAN unit. If a cascade chain has duplicate the level FAN units, it will cause this problem.

9. Is it possible to manage the FAN units from different workstations?

Yes, the InfraCool manager supports 5 concurrent login users from different workstations.

Master IP fan unit

1. What is the Master IP fan unit?
The Master IP fan unit has a built-in IP dongle which provides a simple and economical way to consolidate management of max. 16 Expansion Serial FAN units, by a single IP connection to the network.

2. What is the IP setup utilities?
This is a windows application used to assign the IP address of Master IP fan unit. You can download the IP setup utilities from the link below:

http://www.austin-hughes.com/support/utilities/infracool/IPSetupUtilities.msi

3. Does the Master IP fan unit support DHCP (Dynamic Host Configuration Protocol)?
No, the Master IP fan unit only works with static IP-address.

Temp. sensor

1. How accurate is the Temp. sensor?
It is accurate to ± 1.5°C (typical).

2. How to install the Temp. sensor ?
Plug in the Temp. sensor to the temp. port of the FAN unit at any time.

Others

1. Where can I find the Catalogue / User manual /Model list / Wire diagram of InfraCool FAN units?
Please visit the www.austin-hughes.com

2. How can we get a further support?
Please send the email to support@austin-hughes.com or sales@austin-hughes.com

< Part 9 > Troubleshooting

< 9.1 > FAN unit disconnection

1. GUI shows a certain level Expansion Serial fan unit disconnected (Except Master IP fan unit)

Step 1 - Expansion Serial fan unit power off ?

Check the Expansion Serial fan unit is power ON or not.

Step 2 - Fan unit level setting duplicated in the same Master group?

Check and make sure fan unit level is unique and not duplicated in the same Master group.

(Please refer to user manual < 2.5 > for the fan unit level setting)

2. GUI shows from a certain level Expansion Serial fan unit to the last one disconnected (Except Master IP fan unit)

Step 1 - Cable disconnected, loose or defective ?

Check the Cat. 5 / 6 cable connection between Expansion Serial fan units. Make sure the connectors are firmly attached. And check if any defects on your cables or not. If yes, replace a new one.

Step 2 - The first disconnected Expansion Serial fan unit failed ?

Unplug the Cat. 5 / 6 cable on the first disconnected Expansion Serial fan unit, then plug it to the second disconnected Expansion Serial fan unit to check if the problem caused by the first disconnected Expansion Serial fan unit.

3. GUI shows the whole group of Expansion Serial fan unit(s) disconnected

Step 1 - Cable disconnected, loose or defective ?

Check the Cat. 5 / 6 cable connection to Expansion Serial fan units and network de vices.Make sure the connectors are firmly attached. And check if any defects on your cable or not. If yes, replace a new one.

Step 2 - Master IP fan unit failed ?

i. Check if the network setting of the Master IP fan unit is correct or not. If duplicate IP address is in the network, it may cause such problem.

ii. Disconnect the Master IP fan unit from the network and try to direct connect the Cat. 5 / 6 cable from the **<IP>** port to a computer network port and use IP Setup utilities to check if the Master IP fan unit can be found or not. If it cannot be found, the Master IP fan unit may be failed.

< 9.2 > Replacement, removal or addition for Expansion Serial FAN unit

1. How to replace the failed Master IP fan unit with a new one ?

Step 1 - Prepare a new Master IP fan unit and set it to 1st level.
(Please refer to user manual < 2.5 > for the fan unit level setting)

Step 2 - Disable alarm email in **<Alarm>** page.

Step 3 - Power off & remove the failed Master IP fan unit from connection.

Step 4 - Install the new Master IP fan unit to the connection & power it on.

Step 5 - Click Start Connection in **<Status>** page for the relevant Master Group.

Step 6 - Configure the new Master IP fan unit in **<Details>** & **<Temp. sensor>** page such as **Rack**, **Position**, **Alarm Temp**...

Step 7 - Enable alarm email in **<Alarm>** page.

2. How to replace a failed certain level Expansion Serial fan unit with a new one ?

Step 1 - Prepare a new Expansion Serial fan unit and set the Expansion Serial fan unit level accordingly.
(Please refer to user manual < 2.5 > for the fan unit level setting)

Step 2 - Prepare an appropriate length Cat. 5 / 6 cable.

Step 3 - Click Set maintenance in **<Details>** page for the failed Expansion Serial fan unit.

Step 4 - Use a Cat. 5 / 6 cable to bridge over the failed Expansion Serial fan unit which will be replaced to minimize log / data loss.

Step 5 - Power off & remove the failed Expansion Serial fan unit from connection.

Step 6 - Install the new Expansion Serial fan unit, cancel the cable-bridging and reconnect the Expansion Serial fan unit to the last and next one.

Step 7 - Power on the new Expansion Serial fan unit.

Step 8 - Click Remove maintenance in **<Details>** page for the new Expansion Serial fan unit.

Step 9 - Configure the new Expansion Serial fan unit in **<Details>** & **<Temp. sensor>** page such as **Rack**, **Position**, **Alarm Temp**...

Ignore step 2 & 4 if the failed Expansion Serial fan unit is in the last level.

< 9.2 > Replacement, removal or addition for Expansion Serial FAN unit

3. How to move out a Expansion Serial fan unit (without a replacement) ?

Step 1 - Prepare an appropriate length Cat. 5 / 6 cable.

Step 2 - Click Disable monitoring in **<Details>** page to stop monitoring the removed Expansion Serial fan unit.

Step 3 - Use the Cat. 5 / 6 cable to bridge over the removed Expansion Serial fan unit to minimize log / data loss.

Step 4 - Power off & remove the fan unit from connection.

If the removed Expansion Serial fan unit NOT in the last level, you MUST reconfigure and reset the level for the affected Expansion Serial fan unit(s) which next to the removed Expansion Serial fan unit.

Ignore step 1 & 3 if the removed fan unit is in the last level.

4. How to add an extra Expansion Serial fan unit to an existing fan unit group ?

Step 1 - Prepare a new Expansion Serial fan unit and set the Expansion Serial fan unit level accordingly.

(Please refer to user manual < 2.5 > for the fan unit level setting)

Step 2 - Prepare an appropriate length Cat. 5 / 6 cable.

Step 3 - Click Set maintenance in **<Details>** page for the affected Expansion Serial fan unit(s) which next to the added Expansion Serial fan unit.

Step 4 - Install, connect and power on the new Expansion Serial fan unit.

Step 5 - Reconfigure & reset the level for the affected Expansion Serial fan unit(s) which next to the added Expansion Serial fan unit.

Step 6 - Click Remove maintenance in **<Details>** page for the affected Expansion Serial fan unit(s).

Step 7 - Click Search in **<Status>** page to search the new installed Expansion Serial fan unit.

Step 8 - Configure the new Expansion Serial fan unit in **<Details>** & **<Temp. sensor>** page such as **Rack**, **Position**, **Alarm Temp**...

Ignore step 3, 5 & 6 if the added Expansion Serial Serial fan unit is in the last level.

< 9.3 > InfraCool Manager ICM-02

1. Try to login InfraCool Manager ICM-02 but the web browser only shows " HTTP 404 Not Found "

Step 1 - Services for Web server in management PC started ?

Make sure the services is started. Go to Control Panel -> Administrative Tools -> Services -> Apache2.2 and make sure the status is " Started ".

Step 2 - Port for web server in management PC is occupied by other service ?

Check if the port for web server is used by other service. If yes, please release the port of that particular service and assign another port for it.

Step 3 - Port for web server is added in the firewall of management PC ?

Check if the port is added in the firewall. If not, please add and enable the connection in the firewall. Please refer to user manual < 4.2 > for details.

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