

## User Manual

X-2000  
X-1000

FC CE  REACH



**X-800**  
**Smartcard Handle**

Designed and manufactured by Austin Hughes

## Legal Information

First English printing, October 2002

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 40° Celsius (104° 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.

Notice : The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

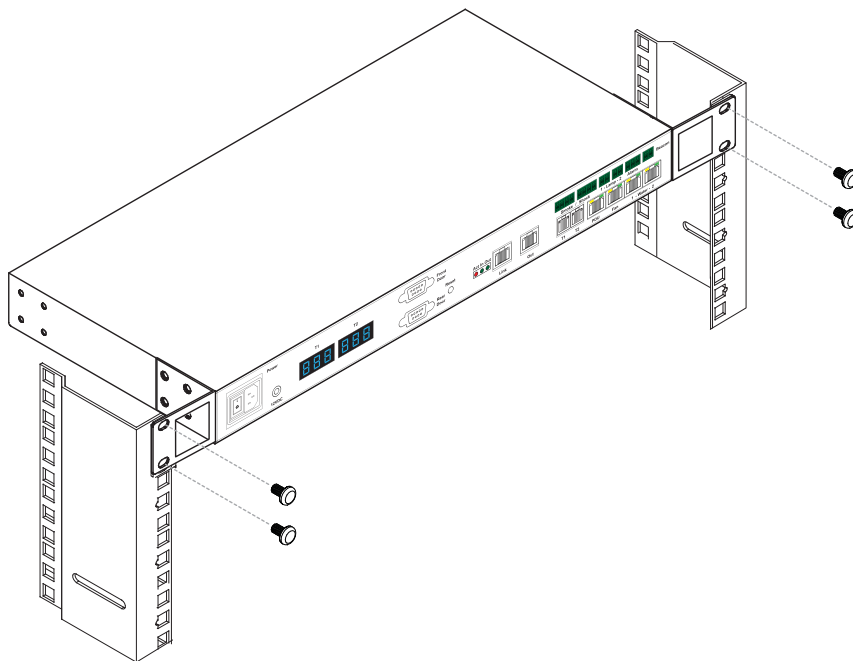
**IMPORTANT NOTE:** To comply with the FCC RF exposure compliance requirements, no change to the antenna or the device is permitted. Any change to the antenna or the device could result in the device exceeding the RF exposure requirements and void user's authority to operate the device.

## Before Installation

- It is very important to locate the equipment in a suitable environment.
- The surface for placing and fixing the equipment should be stable and level or mounted into a suitable cabinet.
- Make sure the place has good ventilation, is out of direct sunlight, away from sources of excessive dust, dirt, heat, water, moisture and vibration.
- Position the equipment with respect to related facilities.

## InfraBox Installation

- Suggest the installation at the rear top mounting of cabinet
- M6 screws set not provided.



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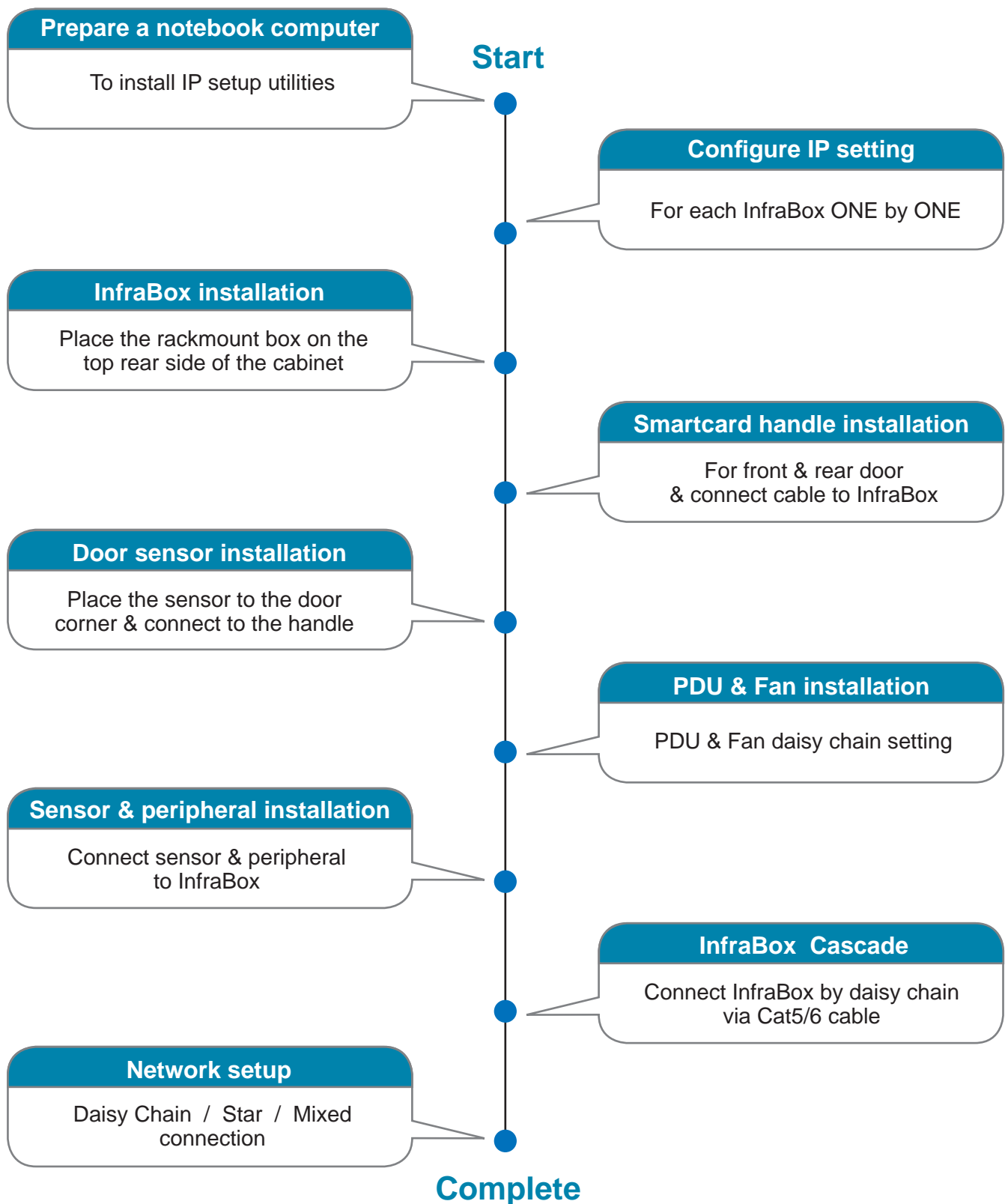
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## < 1.1 > Tips for hardware



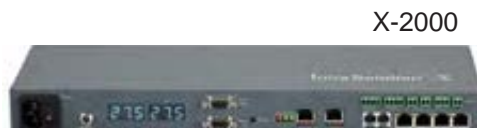
## Key Hardware

### < 2.1 > Package Contents

#### 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.

- X-2000 **OR** X-1000 InfraBox, 1 pc
- 800 MiFARE **OR** Proximity smart card handle, pair
- Inductive **OR** Mechanical door sensor, pair
- Front door cable, 2-section with joint connector, 1 pc ( 3150mm )
- Rear door cable, 2-section with joint connector, 1 pc ( 2350mm )
- 6' Power cord, 1 pc
- Activated smartcard, 1 pc
- Key, 1 pc
- Cable clip, 8 pcs



X-2000

**OR**



X-1000



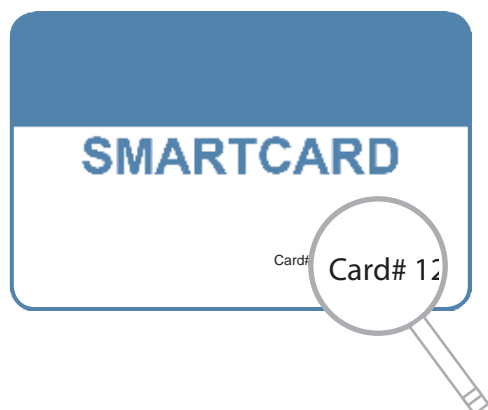
Patented and Worldwide  
Patents Pending

X-800P **OR** X-800M



#### Handle mounting screw set :

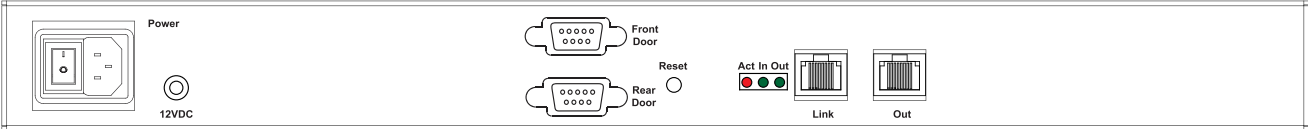
- Handle mounting bracket, 2 pcs
- U bracket x 2
- M3 x 10mm screw, 4 pcs
- M4 x 9mm screw, 4 pcs
- M5 x 10mm screw, 2 pcs
- Circle hole washer, 2 pcs
- Square hole washer, 6 pcs



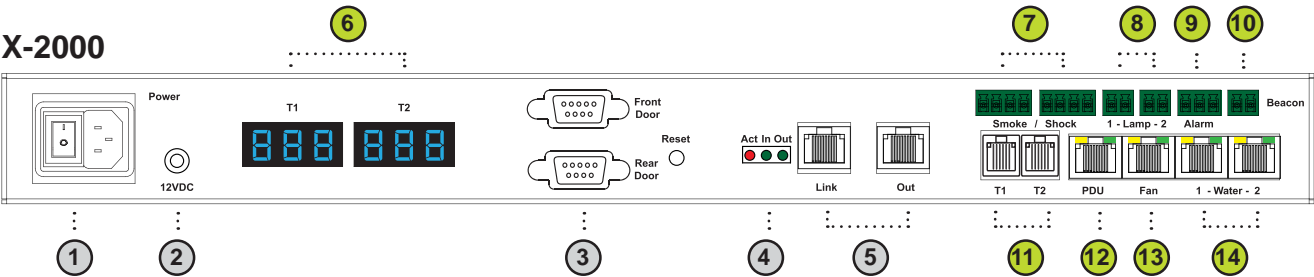
Each package bundled with smartcard x 1. The card on the bottom right shows card number information :

< 2.2 > InfraBox X-1000 / X-2000

X-1000



X-2000



- 1

Power input
- 2

Dual power input ( option )
- 3

Door cable DB-9 connector x 2  
Connect to the front and rear handle
- 4

“Act in Out” LED
- 5

Daisy chain RJ45 port x 2  
( Link & Out )
- 6

Temp. LED display x 2
- 7

Smoke / Shock sensor port x 2
- 8

LED Light Bar port x 2
- 9

Port for 3rd party alarm board x 1
- 10

LED beacon port x 1
- 11

Temp. & Humid. sensor port x 2
- 12

PDU port x 1 ( RJ-45, up to PDU daisy chain level x 4 )
- 13

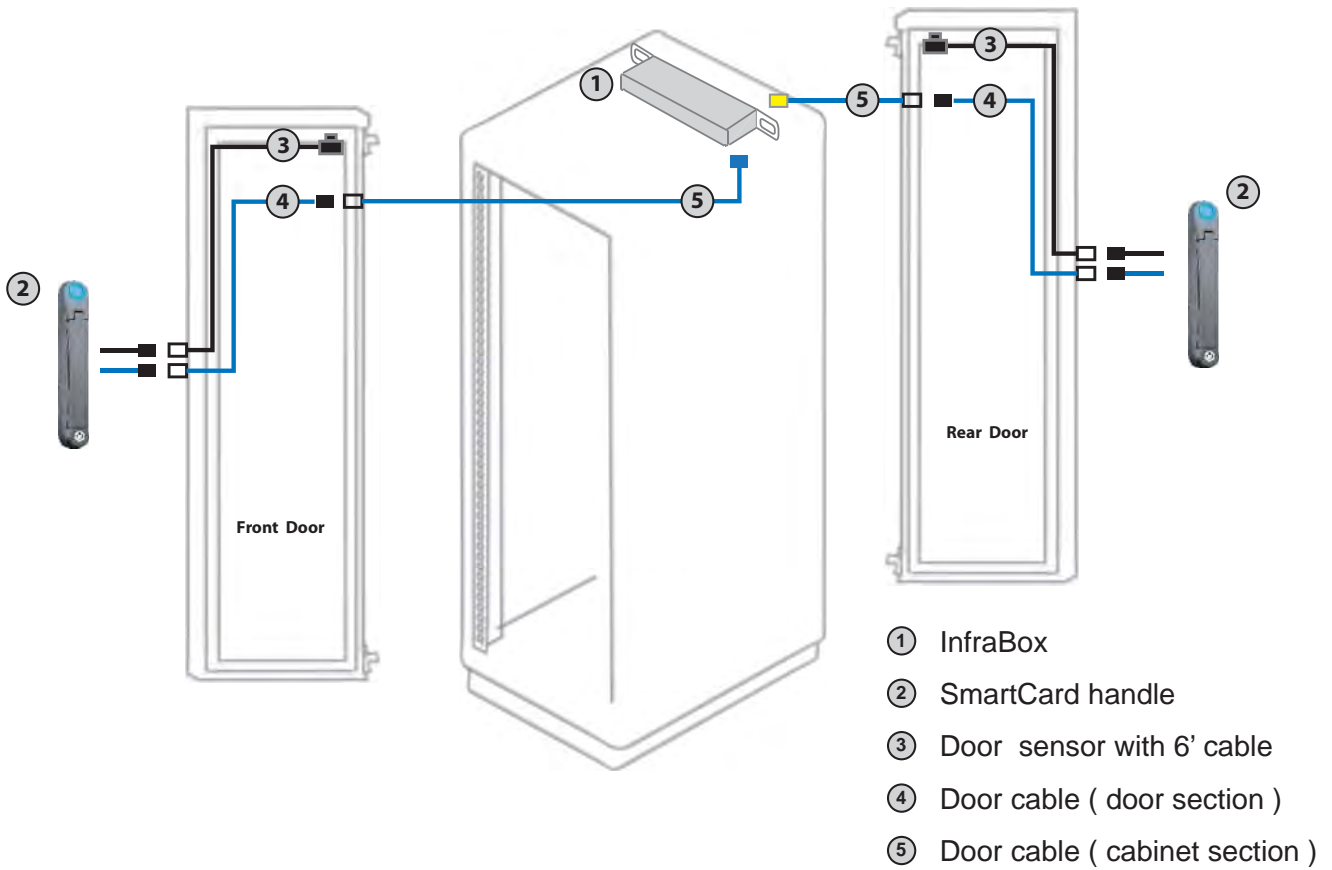
Fan unit port x 1 ( RJ-45, up to fan unit daisy chain level x 2 )
- 14

Water sensor port x 2

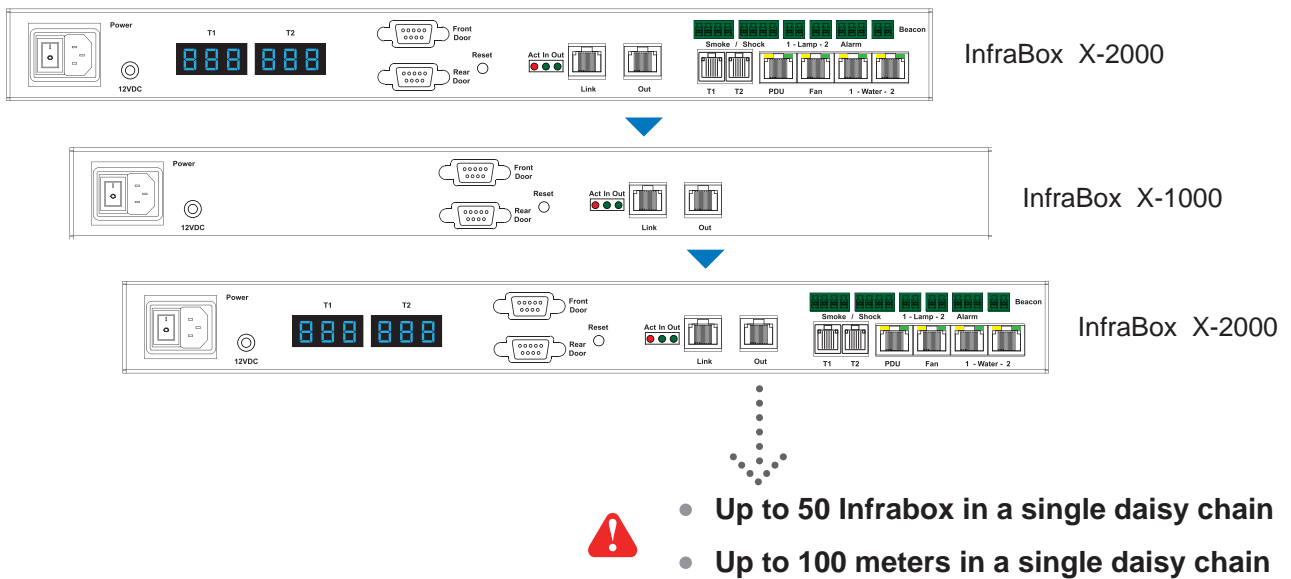
X-1000 / X-2000 Specification

Product Dimension ( W x D x H )	400 x 135 x 39.7 mm / 15.7 x 5.3 x 1.6 inch
Packing Dimension ( W x D x H )	557 x 367 x 98 mm / 21.9 x 14.4 x 3.9 inch
Net / Gross Weight	1.06 kgs ( 2.3 lbs ) / 2.2 kgs ( 4.8 lbs )
Power Consumption	Auto-sensing 100~240VAC, 50 / 60Hz 0.5A, Max. 48 Watt
Operating Temperature	0° to 55°C Degree
Storage Temperature	-5° to 60 °C Degree
Relative Humidity	5~90%, non-condensing
Mounting	1U Rackmount
Safety Regulatory	FCC & CE certified
Environmental	RoHS2 & REACH compliant by SGS

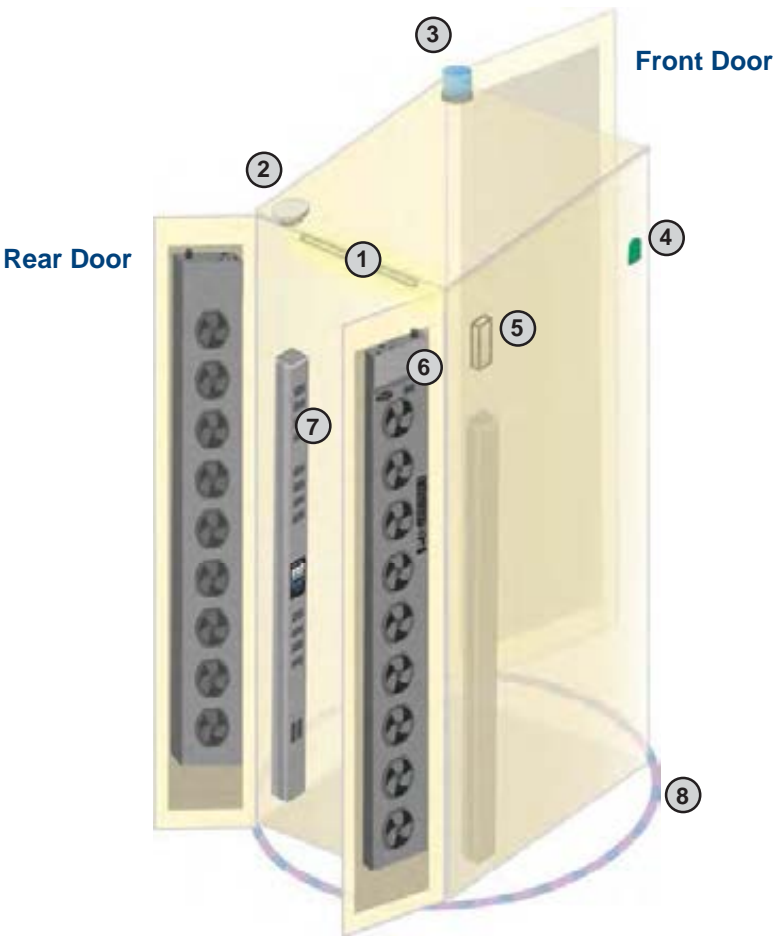
## Key hardware Installation Diagram - InfraBox / Handle / Door Sensor



## InfraBox Daisy Chain Connection



Installation Diagram - PDU / Fan / Sensor / Peripheral



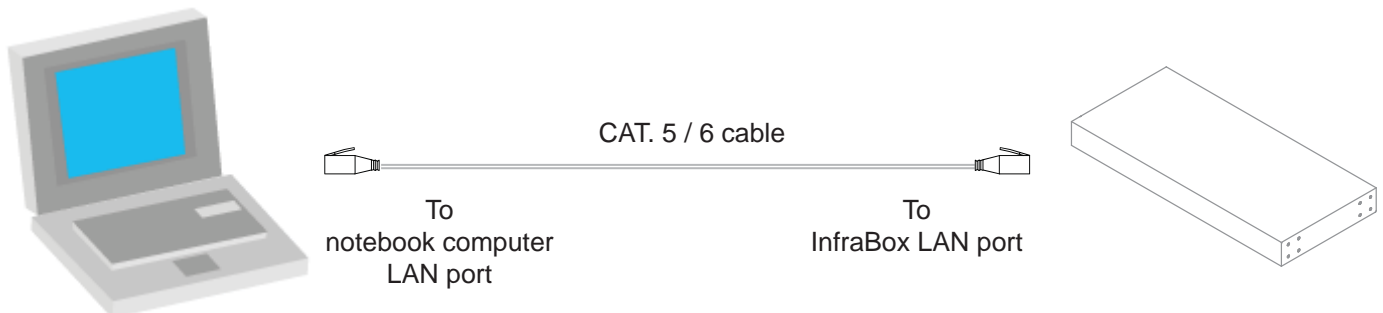
Item	Qty.	Location
① LED Light Bar	2	front & rear top inside
② Smoke Sensor	1	rear inside top
③ Flashing LED Beacon	1	front cabinet roof
④ Temp. & Humid. Sensor	2	any inside position
⑤ Shock Sensor	1	upper inside
⑥ Fan Unit	2	door mount or rackmount
⑦ PDU	4	vertical or rackmount
⑧ Water Sensor	1	surrounding cabinet on floor

## IP Setup for InfraBox



Before place the InfraBox to the cabinet, user **MUST** configure the IP setting for the InfraBox. It takes around 1-2 minutes to complete :

1. Prepare a notebook computer to download the **IP setup utilities** from the link below :  
<http://www.austin-hughes.com/support/utilities/infrasolutionX/InfraBoxSetup.msi>
2. Double click the **InfraBoxSetup.msi** and follow the instruction to complete the utilities installation.
3. Power ON the InfraBox.
4. Go to each InfraBox with the notebook computer & a piece of CAT. 5 / 6 cable to configure the InfraBox as below.



## IP Setup for InfraBox



Write down the new IP address for < 10.2 > MFP - Master Floor Plan

5. Click “ **Scan** ” to search the connected InfraBox.

6. Change the IP address / Subnet mask / Gateway, then Click “ **Save** ” to confirm the setting of InfraBox.

The default IP address is as below :

IP address: 192.168.0.20  
Subnet mask: 255.255.255.0  
Gateway: 192.168.0.254

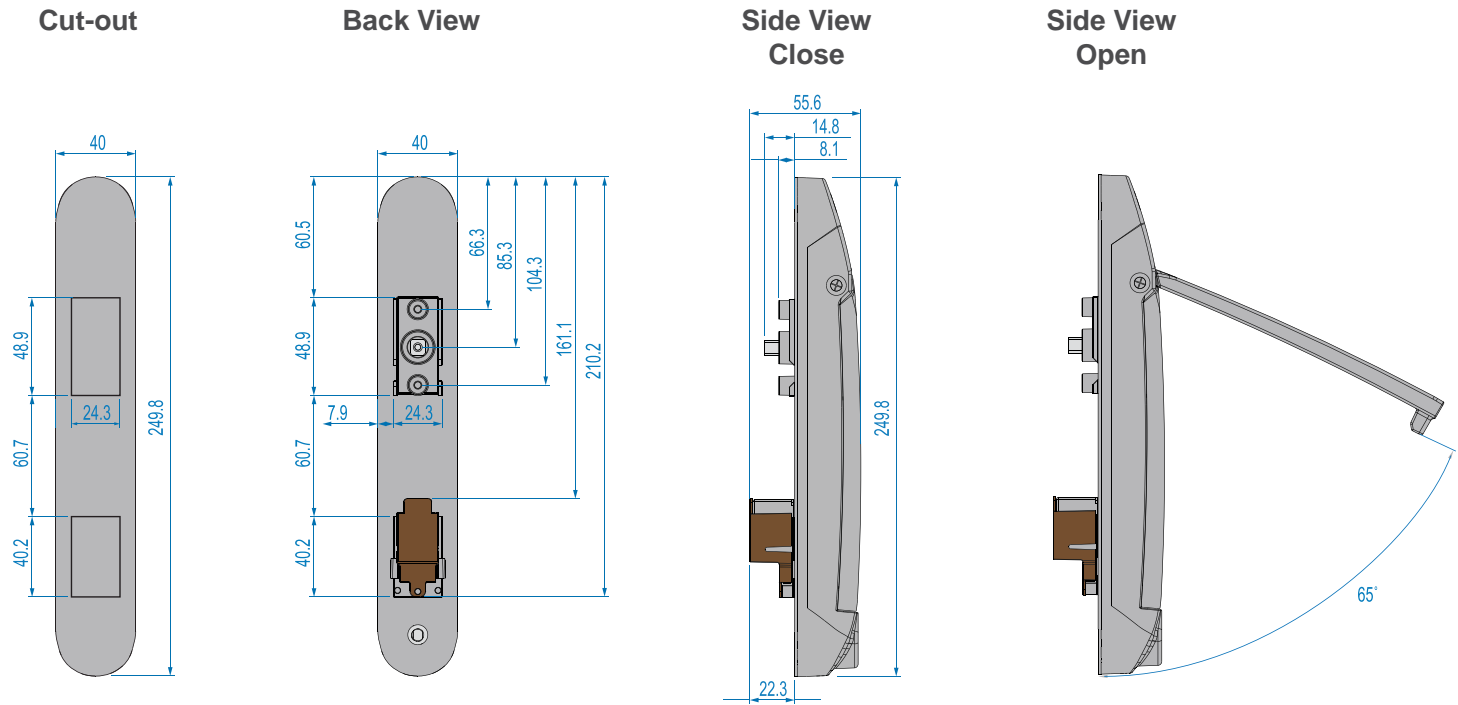


**Please take the procedure no. 3 to 6 for all InfraBoxes ONE BY ONE.**

Universal Mounting Cut-out

To achieve the highest level of interoperability offered in the cabinet industry, the X-800 handle applies the universal mounting cut-out. It avoids costly and complicated door customization for the smartcard handle integration.

Unit : mm



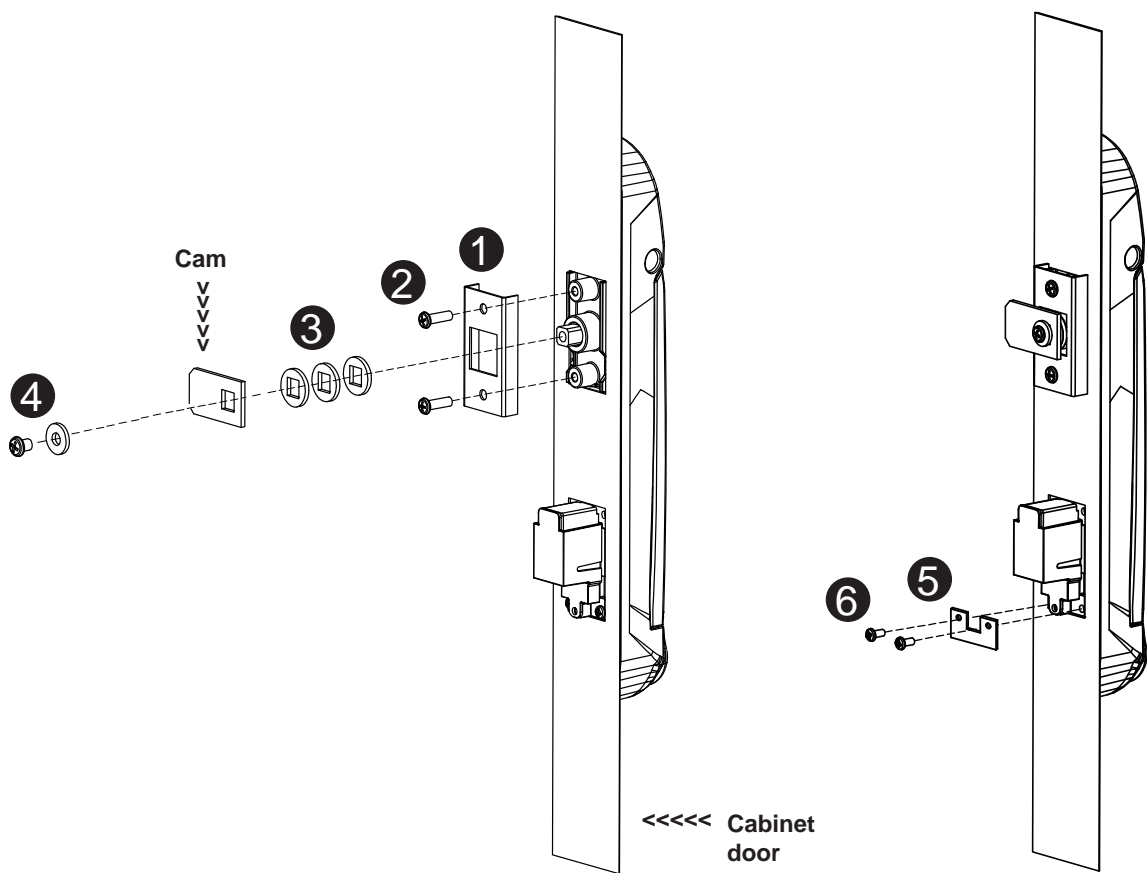
Models of left / right side opening

X-800P / X-800M support left side open. If user requires right side open, please order X-800P-R / X-800M-R.

Model	Left side open	Right side open
X-800P	✓ Proximity	
X-800M	✓ MiFARE	
X-800P - R		✓ Proximity
X-800M - R		✓ MiFARE

Installation for

Single Point Lock



1. Mount the smartcard handle to the universal mounting position.
2. Place the ❶ handle mounting bracket with ❷ M4 x 9mm screw x 2 to secure the handle.
3. Attach the **Cam** with ❸ square hole washer(s) to adjust and to fit the cam locking position.  
Note : - If the cam cannot fit the locking position after adjustment, customization for the cam is required.  
- Cam customization service upon your request, please contact your sales representative
4. Insert the ❹ M5 x 10mm screw x 1 with circle hole washer to secure the **Cam** to the handle.
5. Place the ❺ U bracket with ❻ M3 x 10mm screw x 2 to further secure the handle in place.

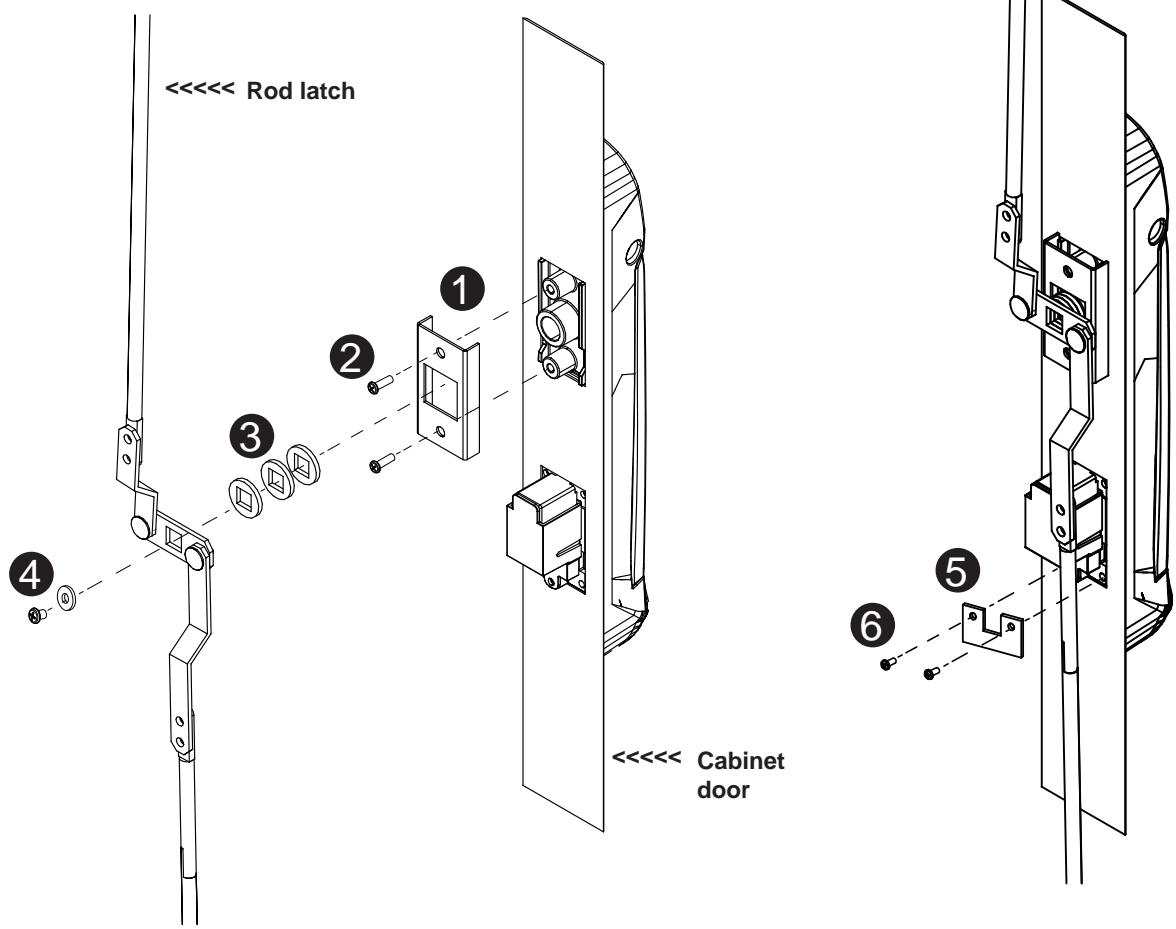
Handle mounting screw set for single point lock

		Qty.	Single Point Lock
❶	Handle mounting bracket	2	✓
❷	M4 x 9mm screw for ❶	4	✓
❸	Square hole washer	6	✓
❹	Circle hole washer w/ M5 x 10mm screw	2	✓
❺	U bracket	2	✓
❻	M3 x 10mm screw for ❺	4	✓

Installation for

2 - point Lock

( light-duty rod-latch )



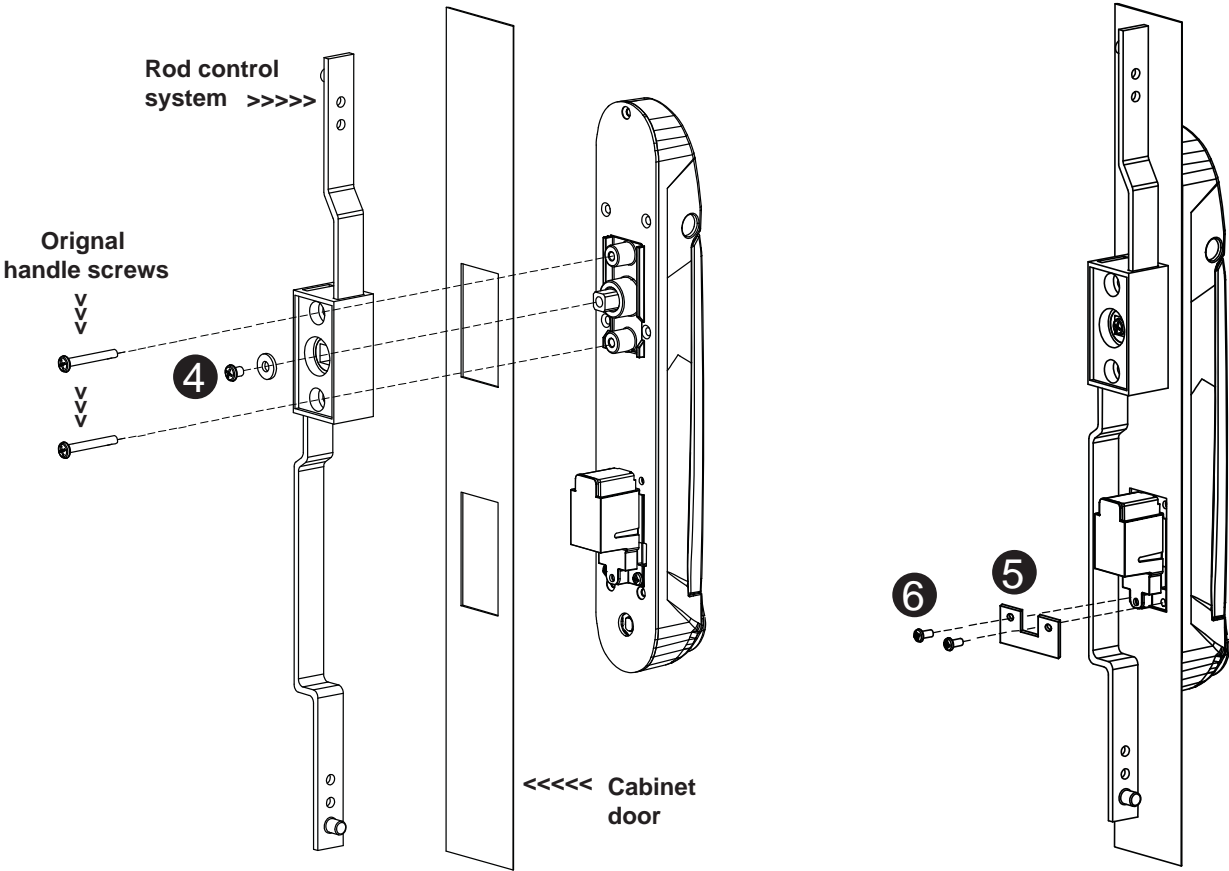
1. Mount the smartcard handle to the universal mounting position.
2. Place the ❶ handle mounting bracket with ❷ M4 x 9mm screw x 2 to secure the handle.
3. Attach the **Rod-latch** with ❸ square hole washer(s) to adjust and to fit the door top & bottom locking position.
4. Insert the ❹ M5 x 10mm screw x 1 with circle hole washer to secure the **Rod-latch** to the handle.
5. Place the ❺ U bracket with ❻ M3 x 10mm screw x 2 to further secure the handle in place.

Handle mounting screw set for 2-point lock ( light-duty )

		Qty.	2-Point Lock ( light-duty )
❶	Handle mounting bracket	2	✓
❷	M4 x 9mm screw for ❶	4	✓
❸	Square hole washer	6	✓
❹	Circle hole washer w/ M5 x 10mm screw	2	✓
❺	U bracket	2	✓
❻	M3 x 10mm screw for ❺	4	✓

< 2.3 > Handle X-800P / X-800M

Installation for **2 - point Lock** ( rod control system )



1. Mount the smartcard handle to the universal mounting position.
2. Attach the **Rod control system** to the handle and insert the **4** M5 x 10mm screw x 1 with circle hole washer to secure the position.
3. Insert **Original handle screws** x 2 through the **Rod control system** and door to the handle to fix it in place.
4. Place the **5** U bracket with **6** M3 x 10mm screw x 2 to further secure the handle in place.

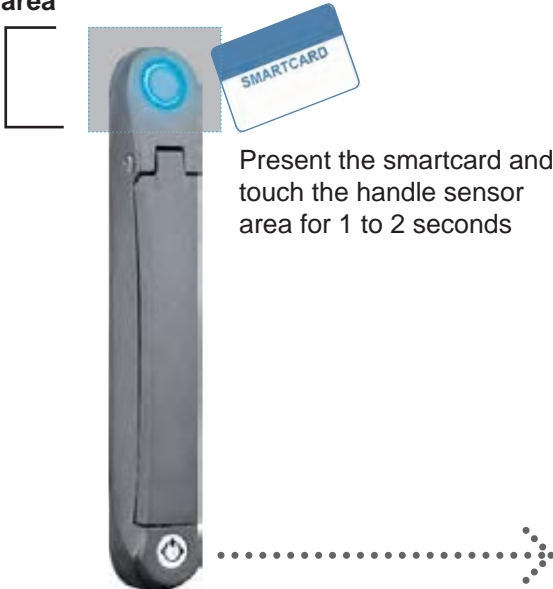
**Handle mounting screw set for 2-Point Lock ( with rod control )**

		Qty.	2-Point Lock ( with rod control )
<b>1</b>	Handle mounting bracket	2	
<b>2</b>	M4 x 9mm screw for <b>1</b>	4	
<b>3</b>	Square hole washer	6	
<b>4</b>	Circle hole washer w/ M5 x 10mm screw	2	✓
<b>5</b>	U bracket	2	✓
<b>6</b>	M3 x 10mm screw for <b>5</b>	4	✓

## Important Note for Key lock

- ⚠ Under Smartcard mode, always keep key cylinder to 12 o'clock direction.

Sensor area



✗		<b>Key lock mode</b> Key cylinder to <b>9 o'clock direction</b> Under key lock mode, even present the smartcard, the handle still keeps locked.
✗		<b>Key unlock mode</b> Key cylinder to <b>3 o'clock direction</b> Under key unlock mode, the handle keeps unlocked.
✓		<b>Smartcard mode</b> ⚠ For smartcard operation, keep key cylinder always to <b>12 o'clock direction</b> .

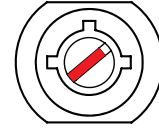


- Unless the smartcard handle is defective, lock / unlock the handle by key is NOT recommended
- Please insert & turn the key with push force



		<b>Key lock mode</b> Key cylinder to <b>9 o'clock direction</b> .
		<b>Key unlock mode</b> Key cylinder to <b>3 o'clock direction</b> .

## Maintenance Key (MK-001)



- Improper key usage may cause the cylinder stuck at abnormal direction 1 to 2 o'clock.
- Under this circumstance, the **maintenance key (MK-001)** is required to solve the problem.
- Please insert the **maintenance key** to the cylinder with push force for turning it to normal direction 9 or 12 or 3 o'clock.

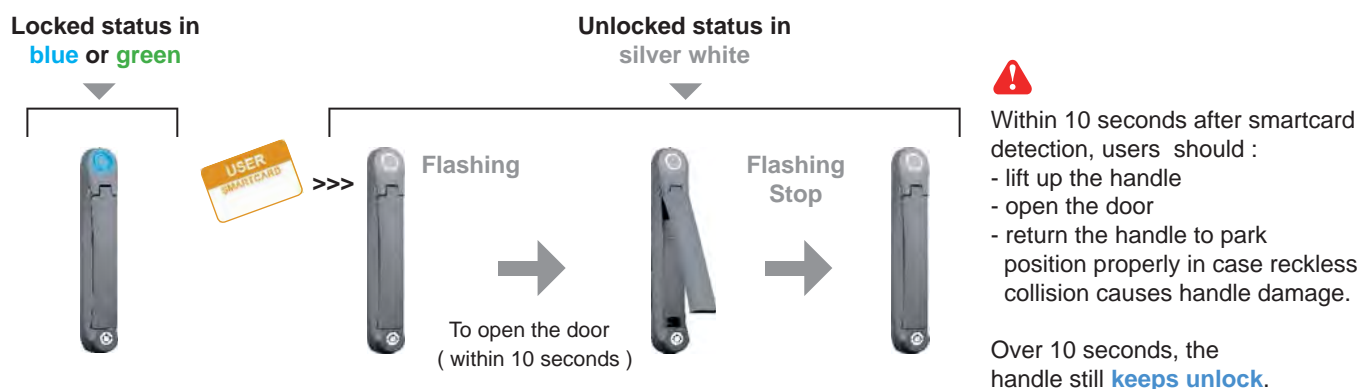


## Important Note for Handle

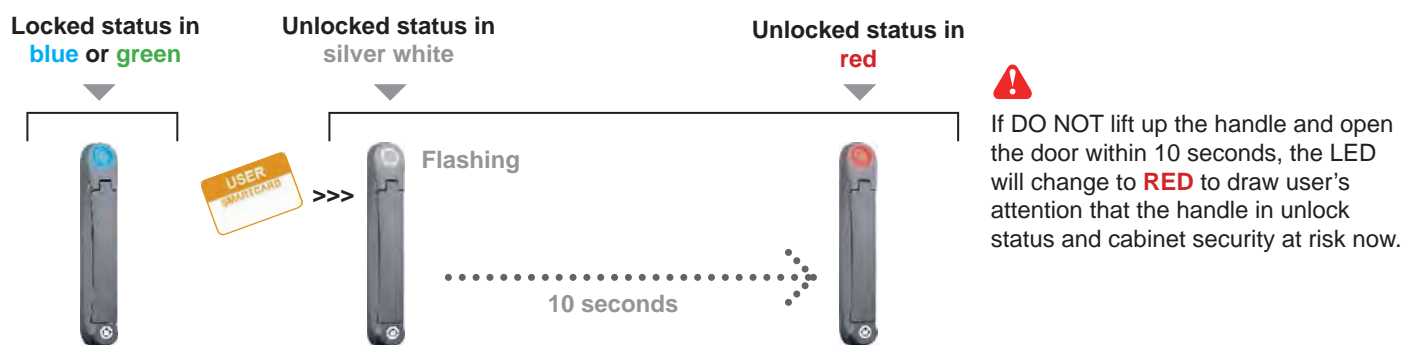
For your own safety, please return the handle to park position properly in case reckless collision.



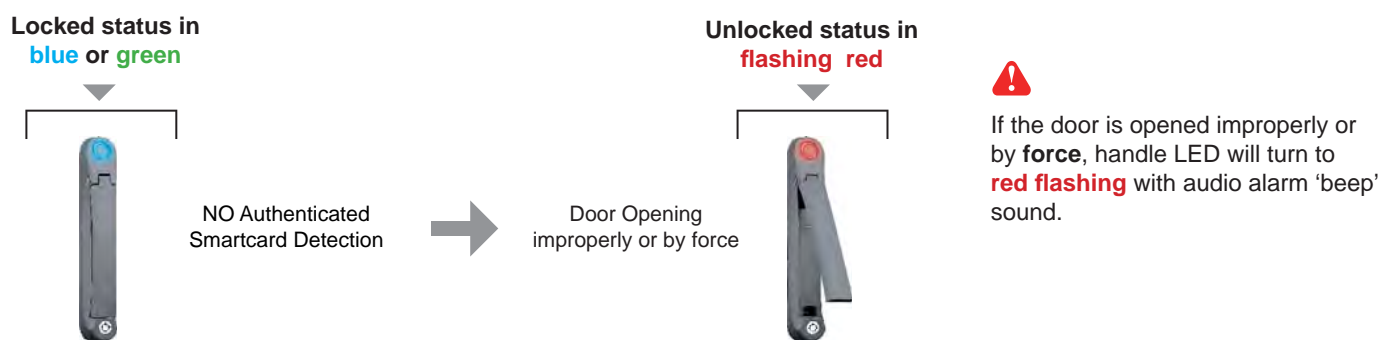
✓ How to unlock the handle & open the door properly



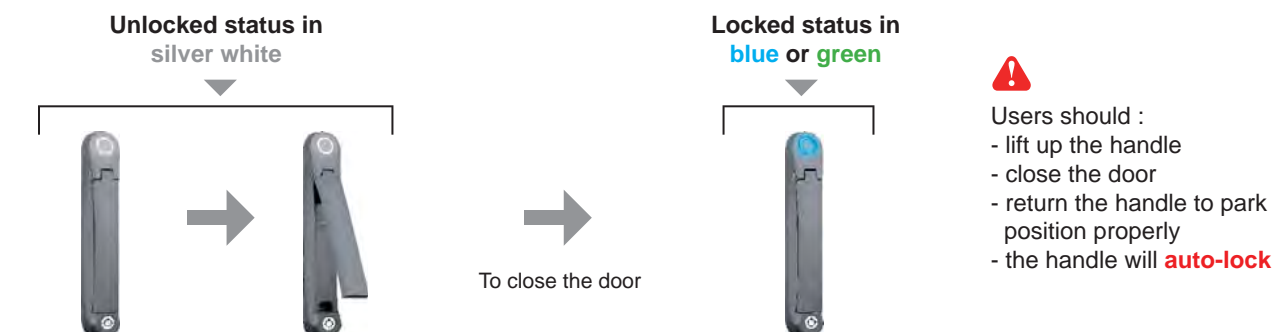
✗ Unlock the handle but NOT open the door



✗ Unauthorized door-open



✓ How to close the door properly

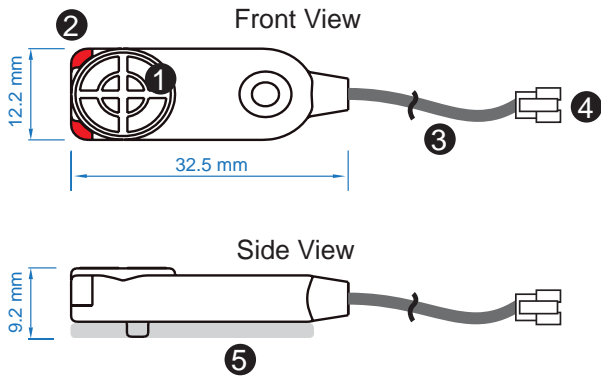


< 2.4 > Door Sensor - Inductive

Inductive Door Sensor, pair ( S-DSI )

Features

- light weight / adhesive
- mini size ( 32.5 x 12.2 x 9.2 mm )
- no custom cutting required on door



①	Sensor area
②	Red LED ( light up while door opening )
③	2m cable
④	Cable jack ( connect to handle )
⑤	2mm adhesive tape

Package content

- Inductive sensor w/ 2m cable x 2
- 2mm adhesive tape x 6



## < 2.4 > Door Sensor - Inductive

### Installation steps

- connect to the handle
- guide & fix the cable with cable clips ( bundle with handle package )
- place the sensor at the top of the door, close to the opening side
- adjust the sensor with adhesive tape to ensure the sensing distance between door to frame within 3mm while door in close status

### Requirements

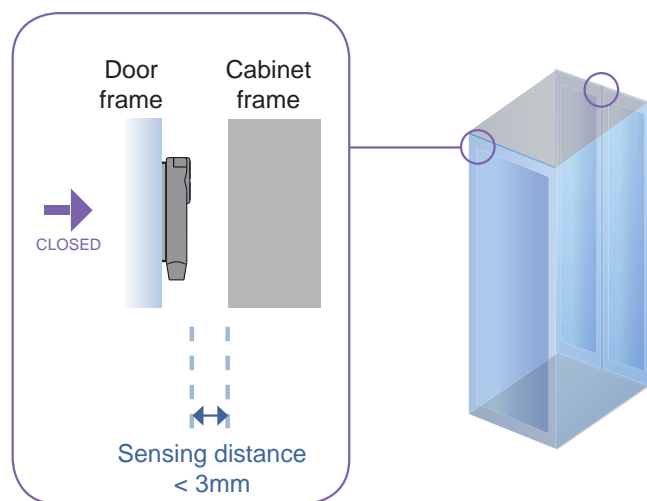
- cabinet frame made of ferrous metal ( iron )
- sensing distance 3mm



### Sensor Operation

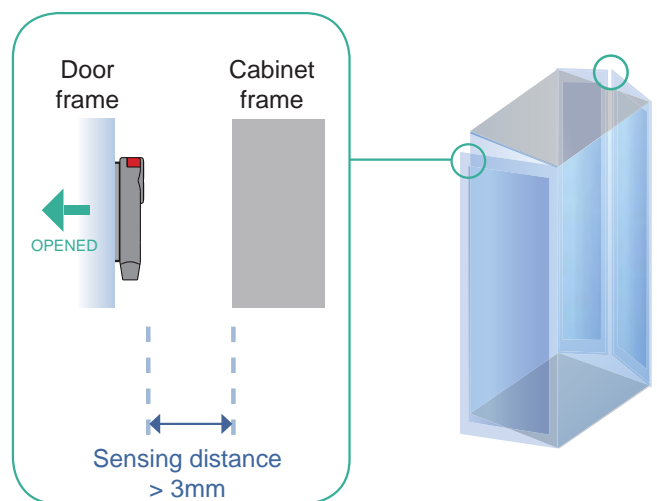
#### DOOR CLOSE

- close door
- inductive sensor detects the cabinet frame
- DOOR CLOSE SIGNAL sends out



#### DOOR OPEN

- open door
- inductive sensor lose detection with cabinet frame
- Red LED of sensor light up
- DOOR OPEN SIGNAL sends out



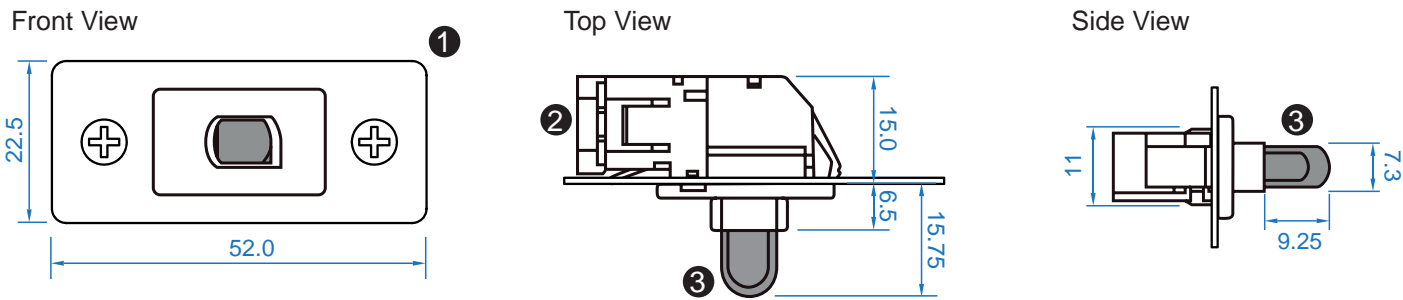
< 2.4 > Door Sensor - Mechanical

Mechanical Door Sensor ( S-DSW )

Features

- low cost / precise
- cost efficient integration to new cabinet

unit : mm



①	Steel mounting plate with 2 screw holes
②	Cable connector
③	Press button ( total travel distance : 9.25 mm ) ( min. actuation distance : 3.00 mm )

Package content

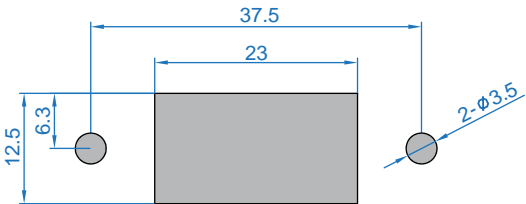
- Mechanical sensor w/ 2m cable x 2
- Mounting screws 6#32x4.5mm x 2



Requirements 

- custom hole cutting required on doors
- ordering a sample for custom cutting is highly suggested
- min. actuation distance : 3.00 mm
- total travel distance : 9.25 mm

unit : mm



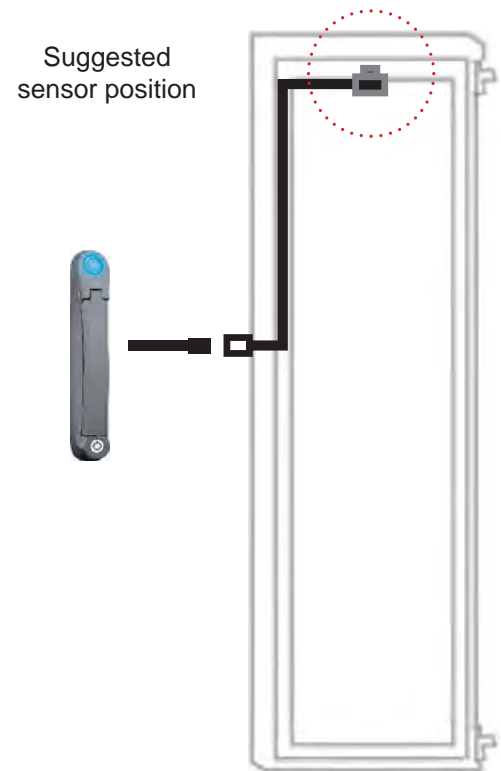
Dimension of door cutting hole

- circle hole x 2 for screw mounting
- rectangle hole x 1 for sensor installation

## < 2.4 > Door Sensor - Mechanical

### Installation steps

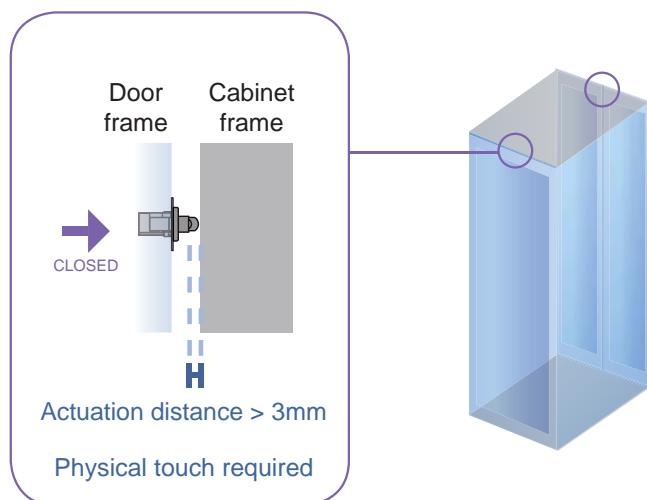
- connect to the handle
- place the sensor at the top middle of the door
- install the sensor in the custom hole
- secure it with bundled mounting screws 6#32x4.5mm x 2



### Sensor Operation

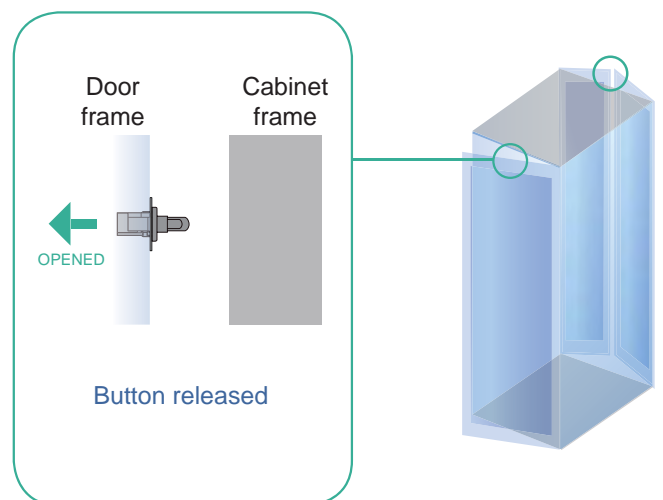
#### DOOR CLOSE

- close door
- Sensor button is pressed on
- DOOR CLOSE SIGNAL sends out



#### DOOR OPEN

- open door
- Sensor button is released
- DOOR OPEN SIGNAL sends out



## < 2.4 > Door Sensor



### Specification

		Inductive Door Sensor	Mechanical Door Sensor
Part no.		S-DSI	S-DSW
Sensitivity	Actuation	/	3.00 mm
	Travelling Distance	/	9.25 mm
	Operating Force	/	3.5±1 N
	Sensing distance	Max. 3mm	/
	Sensing object	Ferrous metal	/
Power Requirement	Voltage	12VDC, powered by sensor port	/
	Current Consumption	100mA	/
Housing	Material	Plastic	
	Color	Black	
Connection	Cable Length	sensor w/ 2m cable	
Environmental	Operating	-20 to 60°C Degree	
	Storage	-20 to 60°C Degree	-30 to 70°C Degree
	Relative Humidity	5~90%, non-condensing	
Dimensions	Product	32.5L x 12.2W x 9.2H mm	52W x 22.5L mm ( with metal plate )
	Packing	/	/
Weight	Net / Gross	6g	14g ( with metal plate )
Supply includes	1	Inductive door sensor with 2m cable	Mechanical door sensor
	2	2mm Adhesive tape	Metal plate
	3	/	2m cable
Compatibility	X-2000 series		
Safety Regulatory	FCC & CE certified		
Environmental	RoHS2 & REACH compliant by SGS		

## < 3.1 > PDU

Under an **InfraSolution X** network, each InfraBox supports **InfraPower** intelligent PDU x 4 in a daisy chain. Each PDU comes with Temp. & Humid. sensor port x 2

**W** series : monitored PDU

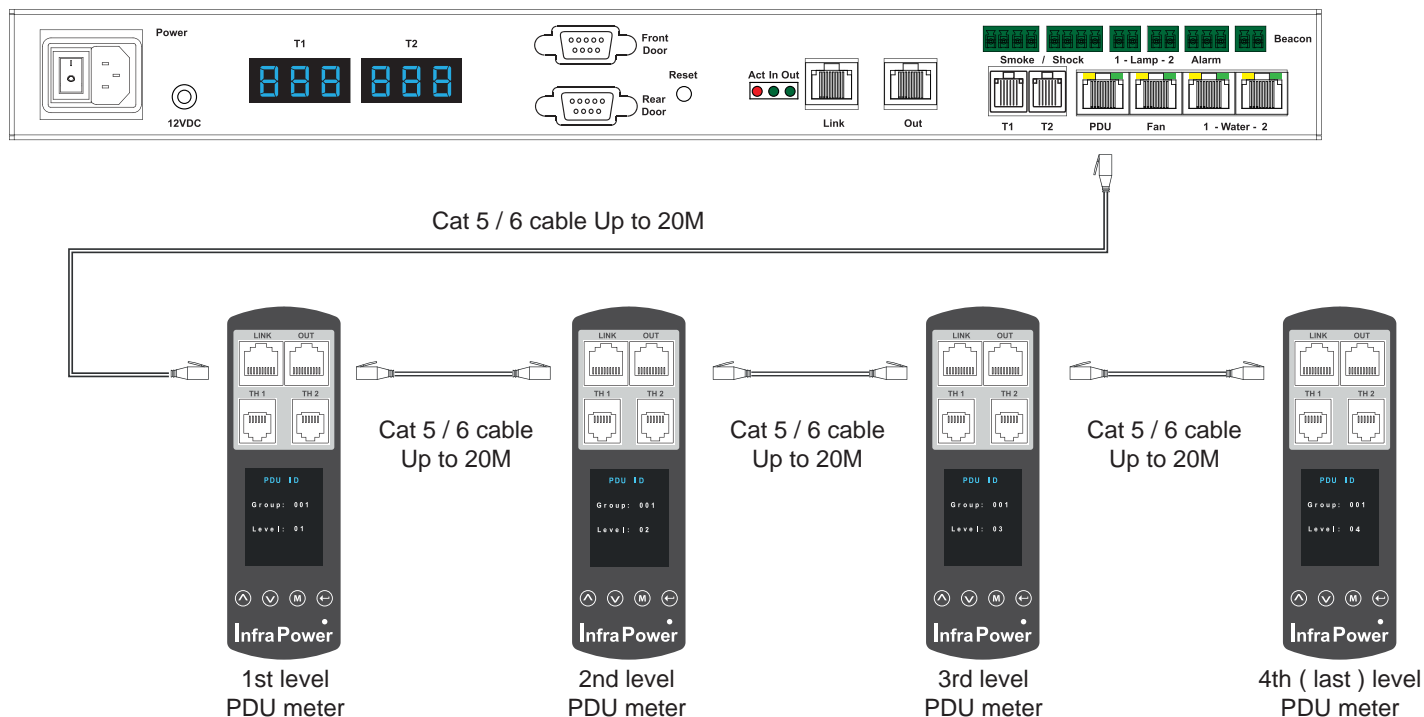
**WS** series : switched PDU


**WSi** series : outlet level measurement switched PDU

 Please visit below link to select desired PDU & download the PDU drawing & specifications.

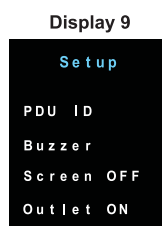
[http://www.austin-hughes.com/solutions/intelligent-kWh-pdu.html#Single\\_Phase](http://www.austin-hughes.com/solutions/intelligent-kWh-pdu.html#Single_Phase)

### InfraBox



 Max. daisy chain distance from InfraBox to the 4th PDU up to 80M

### PDU level setting :



**Step 1** - Press the  &  button to display no.9 and press  to confirm


**Step 2** - Press the  &  button to PDU ID and press  to confirm



**Step 3** - In display 9.1, Press the  &  button to select PDU level no.1 - 4 and press  to confirm

**Step 4** - Press  to exit

( Neglect **Group no.** in display 9.1. It's not applicable to InfraSolution X Software )

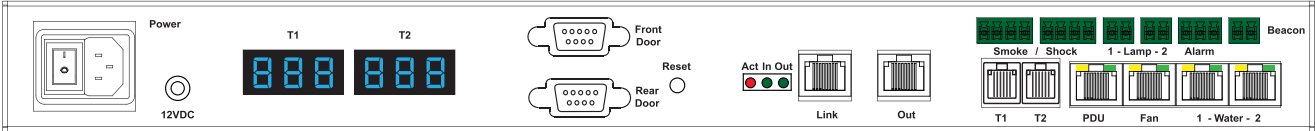
 For details about PDU level setting, please refer to IPM-03 user manual < 3.1 > :

<http://www.austin-hughes.com/support/usermanual/infrapower/UM-IPM-03.pdf>

< 3.2 > Fan Unit

Under an **InfraSolution X** network, each InfraBox supports **InfraCool** remote fan unit x 2 in a daisy chain. Each fan unit comes with TEMP. sensor port x 1

InfraBox X-2000



2nd ( last ) level Fan unit



OUT



LINK



Cat 5 / 6 cable  
Up to 20M



OUT



LINK

1st level Fan unit



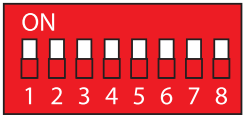
Max. daisy chain distance from InfraBox to the 2nd fan unit up to 40M



Please visit below link to select desired Fan unit models  
<http://www.austin-hughes.com/solutions/intelligent-fan-units.html#RMounted>

Using **dip switch no. 1, 2, 3, 4, 5, 6 & 8** to setup each FAN unit level as below :

Cascaded FAN unit	Dip switch no.						
	1	2	3	4	5	6	8
1st level Fan Unit	On	On	On	On	On	On	Off
2nd level Fan Unit	Off	On	On	On	On	On	Off



Using **dip switch no. 7** to setup each FAN unit audio alarm as below :

	Dip switch 7
Enable	On
Disable	Off



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

## < 3.2 > Fan Unit

### Specification



Remote Fan	Model	<b>RF-1.3 / 1.6 / 1.9</b>		<b>RF-33.6 / 33.9</b>
	No. of Fan	3 / 6 / 9		6 / 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		648 / 972 CFM
	IP Remote Access	Not available, must be via Master IP fan on the 1st level		
	Daisy Chain Level	2nd to 16th level		

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	100V or 240V AC at 50 or 60Hz via IEC type cord		
	Consumption	20W / 40W / 60W		40W / 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	<b>Model</b>	<b>Product Dimension</b>	<b>Packing Dimension</b>
	<b>RF-1.3</b>	480 x 298.3 x 43.5 mm 18.9 x 11.7 x 1.71 inch	380 x 535 x 120 mm 15 x 21.1 x 4.7 inch
	<b>RF-1.6</b>	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
	<b>RF-1.9</b>	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
	<b>RF-33.6</b>	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
	<b>RF-33.9</b>	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	<b>Model</b>	<b>Net Weight</b>	<b>Gross Weight</b>
	<b>RF-1.3</b>	4 kgs / 8.8 lbs	5 kgs / 11 lbs
	<b>RF-1.6</b>	6.8 kgs / 15 lbs	8 kgs / 17.6 lbs
	<b>RF-1.9</b>	9 kgs / 19.8 lbs	11 kgs / 24.2 lbs
	<b>RF-33.6</b>	4.3 kgs / 9.5 lbs	6.6 kgs / 14.5 lbs
	<b>RF-33.9</b>	5 kgs / 11 lbs	7.4 kgs / 16.3 lbs

Safety Regulatory	FCC & CE certified
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Environmental	RoHS2 & REACH compliant by SGS
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## < 4.1 > Temp. & Humidity Sensor

Each InfraBox provides Temp. & Humid. Sensor port x 2. If more TH sensors required, two temp. & humid. sensor ports on each integrated PDU can be applied.



		Temp. & Humid. Sensor	Temp. Sensor
Part no.		IG-TH01-2M	IG-T01-2M
Temperature Sensitivity	Range	0 to 80°C ( 32 to 176°F )	
	Accuracy	±0.5°C typical ( ±1°F )	±1°C ( ±2°F )
	Resolution	0.1°C ( 0.2°F )	
	Response Time	5 to 30 sec	
Relative Humidity Sensitivity	Range	0 to 100% R.H	/
	Accuracy	0 to 100, ±8.0% R.H 20 to 80, ±4.5% R.H.	/
	Resolution	1% R.H.	/
	Response Time	8 sec	/
Power Requirement	Voltage	12VDC, powered by sensor port	
	Current Consumption	20mA	
	Power consumption	0.24 Watt	
	Power on indicator	Red	Green
Housing	Chassis & Cover	Plastic	
	Color	Dark gray	
	Installation	Magnetic base for unrestricted installation	
Connection	Cable Length	TH sensor w/ 2m cable ( standard ) TH sensor w/ 4m cable ( option )	T sensor w/ 2m cable ( standard ) T sensor w/ 4m cable ( option )
	Cable Specification	4-wired 3.5mm to RJ11	
	Cable Color	Black	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	TH Sensor	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	RoHS2 & REACH compliant by SGS		

## < 4.2 > Smoke Sensor

Smoke sensor comes with a RED LED. When smoke alarm triggers, the RED LED lights on with beep sound continuously.



		<b>Smoke Sensor</b>
<b>Part no.</b>		<b>IG-S01-1M</b>
<b>Sensitivity</b>	Smoke sensitivity	0.15 ~ 0.3 dB/m
<b>Alarm Output</b>	Solid State Relay	24VDC@1A
	Alarm LED	Red
	Audio Alarm	80 dB
	Audio Alarm Pattern	Continuous beeps
<b>Power Requirement</b>	Voltage	12VDC, powered by sensor port
	Current Consumption	200uA
	Power ON LED	Red LED flashes every 6 seconds
<b>Housing</b>	Chassis & Cover	ABS plastic
	Color	Ivory White
<b>Connection</b>	Cable Length	1m / 3m ( option )
<b>Environmental</b>	Operating	-5 to 50°C Degree
	Storage	-10 to 60°C Degree
	Humidity	5~90%, non-condensing
<b>Dimensions</b>	Product	103L x 103W x 55H mm
<b>Weight</b>	Net	165g
<b>Supply includes</b>	1	Smoke Sensor with 1m cable
<b>Compatibility:</b>	InfraSolution	X-2000 series
	InfraGuard	EC-300M & EC-300
<b>Safety Regulatory</b>	FCC & CE certified	
<b>Environmental</b>	RoHS2 & REACH compliant by SGS	

## < 4.3 > Shock Sensor

Shock sensor comes with a RED LED. When shock alarm triggers, the RED LED lights on continuously.



REACH

		<b>Shock Sensor</b>
<b>Part no.</b>		<b>IG-V01-1M</b>
<b>Sensitivity</b>	Detection radius	3.5 m
	Adjustable sensitivity	Internal micro knob with screwdriver cross slot
<b>Alarm Output</b>	Solid State Relay	12VDC@100mA
	Alarm hold time	Approx. 2.0 sec.
	Alarm LED	Red
<b>Power Requirement</b>	Voltage	12VDC, powered by sensor port
	Current Consumption	15mA
	Power consumption	0.18 Watt
<b>Housing</b>	Chassis & Cover	ABS plastic
	Color	White
<b>Connection</b>	Cable Length	1m / 3m ( option )
<b>Environmental</b>	Operating	-5 to 55°C Degree
	Storage	-10 to 60°C Degree
	Humidity	5~90%, non-condensing
<b>Dimensions</b>	Product	26 x 85 x 24 mm
<b>Weight</b>	Net	40g
<b>Supply includes</b>	1	Shock Sensor with 1m cable
<b>Compatibility</b>	InfraSolution	X-2000 series
	InfraGuard	EC-300M & EC-300
<b>Safety Regulatory</b>	FCC & CE certified	
<b>Environmental</b>	RoHS2 & REACH compliant by SGS	

< 4.4 > Water Sensor



		Water Sensor
Part no.		IG-W01-3M
	Measurement Range	Wet or Dry (-20°C to 60°C)
	Rope Sensor Length	5m
Power Requirement	Voltage	5VDC, powered by sensor port
	Power consumption	125 mWatt
Connection	Extension cable length	3m ( non-detection )
Environmental	Operating	-20 to 60°C Degree
	Storage	-20 to 80°C Degree
Weight	Net	450g ( Sensor & extension cable )
Supply includes	1	Rope water sensor
	2	Extension cable
Compatibility	InfraSolution	X-2000 series
	InfraGuard	EC-300M & EC-300
Safety Regulatory	FCC & CE certified	
Environmental	RoHS2 & REACH compliant by SGS	

## < 4.5 > LED Light Bar

Under InfraSolution X software, the LED light bar can be enabled / disabled / always ON.

When the LED light bar is enabled & connected, it will be ON within 10 seconds after the handle lock is released.



REACH

		<b>LED Light Bar</b>
<b>Part no.</b>		<b>CLB-IX-002-2M</b>
<b>Light</b>	Color	Cool White
	Output	250 Lumens
	Color Temperature	5600-7000K
	Number of LED	18 High Output CREE SMD LED
	Life Expectancy	30,000 hrs
<b>Power Requirement</b>	Voltage	12VDC, powered by sensor port
	Current Consumption	0.375A
	Power consumption	4.5 Watt
<b>Housing</b>	Chassis	Extruded aluminum with silver powder coat
	Diffuser	Acrylic with milky white
	Installation	Magnetic base for unrestricted installation
<b>Connection</b>	Cable Length	2m / 3m ( option )
<b>Environmental</b>	Operating	-20 to 50°C Degree
	Storage	-20 to 60°C Degree
	Relative Humidity	5~90%, non-condensing
<b>Dimensions</b>	Product	300L x 20W x 12H mm
<b>Weight</b>	Net	84g
<b>Compatibility</b>	InfraSolution	X-2000 series
	InfraGuard	EC-300M & EC-300
<b>Safety Regulatory</b>	FCC & CE certified	
<b>Environmental</b>	RoHS2 & REACH compliant by SGS	

## < 4.6 > LED Beacon

The LED Beacon can be stuck firmly by the bundled adhesive tape.



REACH

		<b>LED Beacon</b>
<b>Part no.</b>		<b>IG-FB03-1M</b>
<b>Notification</b>	Len Color	Blue
	Light Source	White
	Flash Rate	120 flashes per minute
<b>Power Requirement</b>	Voltage	12VDC, powered by sensor port
	Current Consumption	0.175A
<b>Housing</b>	Cover Len	Polycarbonate
	Color	Blue
<b>Connection</b>	Cable Length	1m / 3m
<b>Environmental</b>	Operating	-20 to 50°C Degree
	Storage	-20 to 60°C Degree
	Relative Humidity	5~90%, non-condensing
<b>Dimensions</b>	Product	72L x 72W x 45H mm
<b>Weight</b>	Net	50g
<b>Supply includes</b>	1	LED Beacon with 1m cable
<b>Compatibility</b>	InfraSolution	X-2000 series
	InfraGuard	EC-300M & EC-300
<b>Safety Regulatory</b>	FCC & CE certified	
<b>Environmental</b>	RoHS2 & REACH compliant by SGS	

## Network Connection

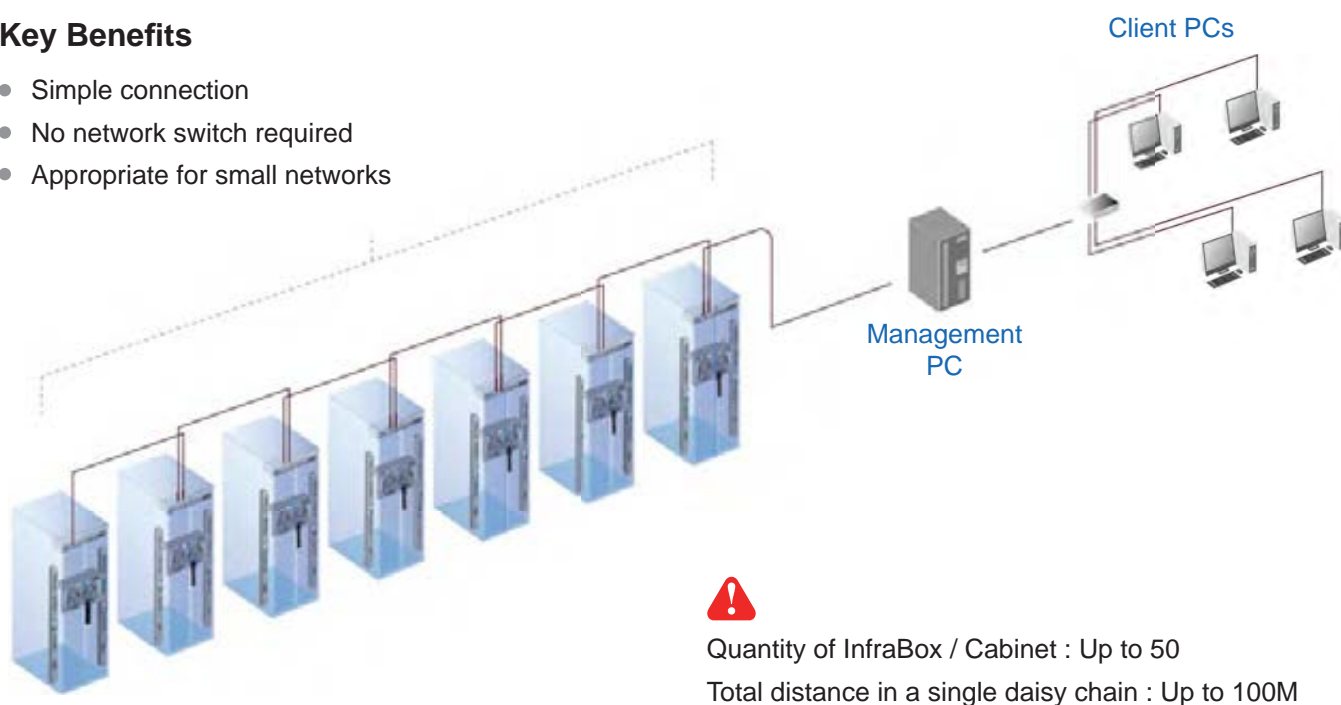
InfraSolution X provides 3 connection ways - **Daisy Chain**, **Star**, **Mixed**.

Which connection applied is subject to the site scale, environment and users' requirements.

### < 5.1 > Daisy Chain Connect all InfraBoxes by Cat5/6 cable, and no any network switch required

#### Key Benefits

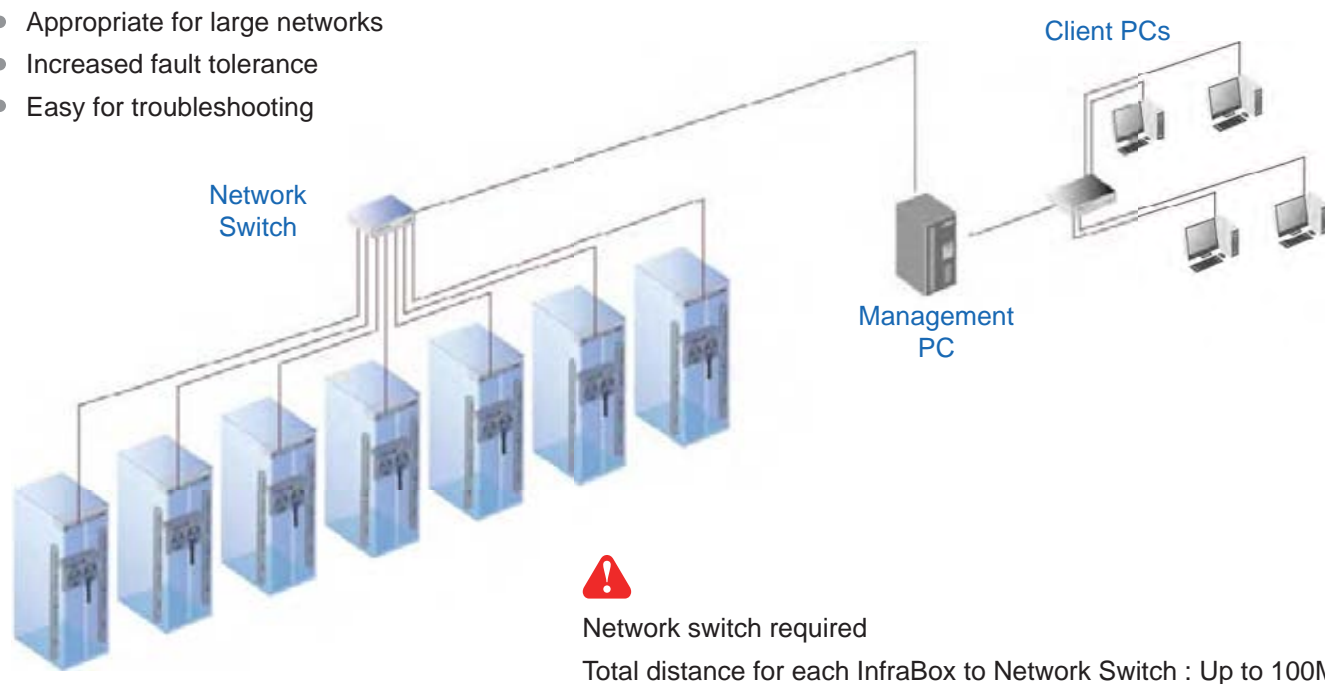
- Simple connection
- No network switch required
- Appropriate for small networks



### < 5.2 > Star Connect to network switch by a point-to-point connection

#### Key Benefits

- Appropriate for large networks
- Increased fault tolerance
- Easy for troubleshooting



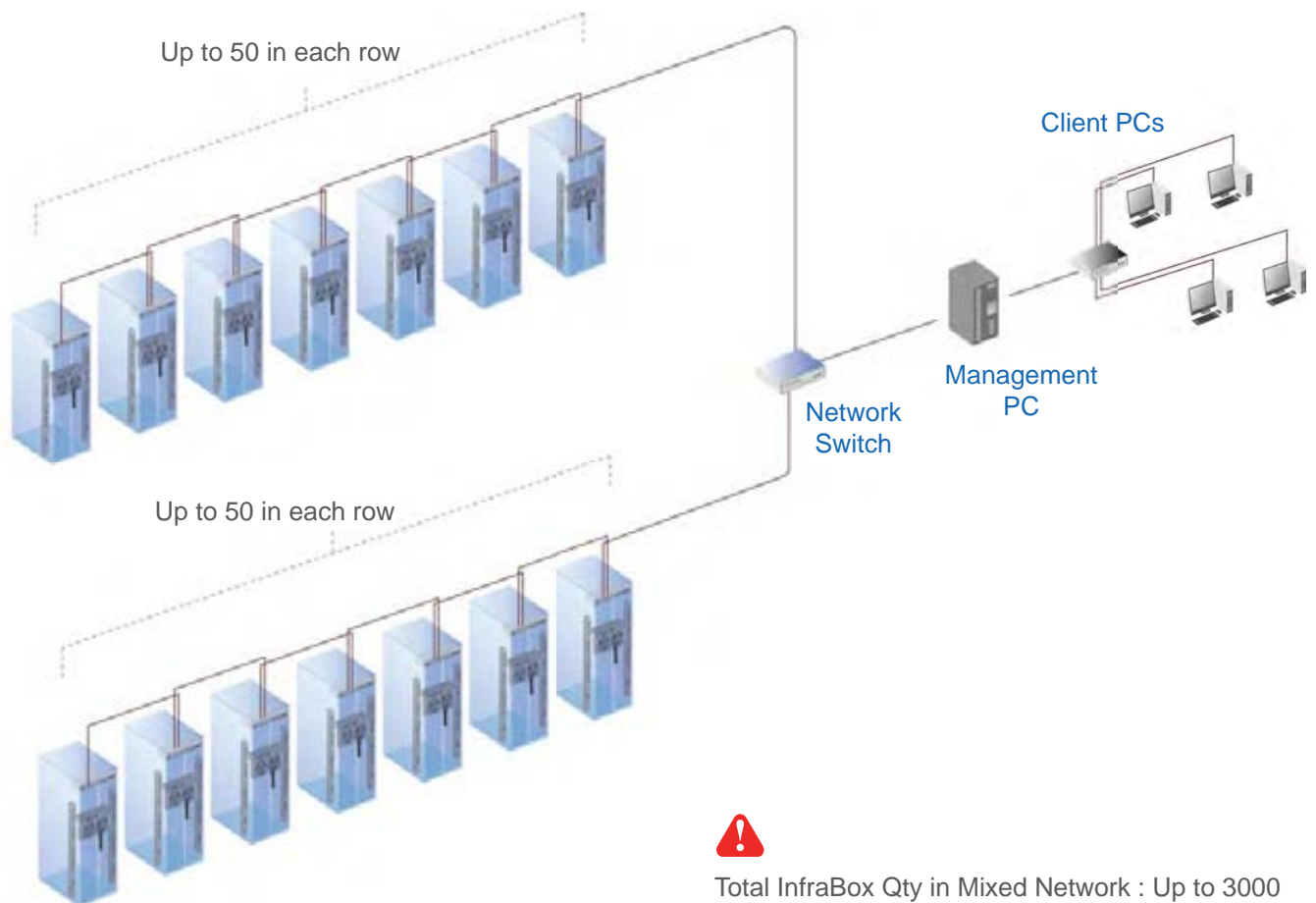
## Network Connection

### < 5.3 > Mixed

Combining daisy chain with star connection

#### Key Benefits

- Most effective and practical for large scale of networks
- Take all advantages of Daisy Chain and Star connection
- Flexible to meet a variety of network environments and needs

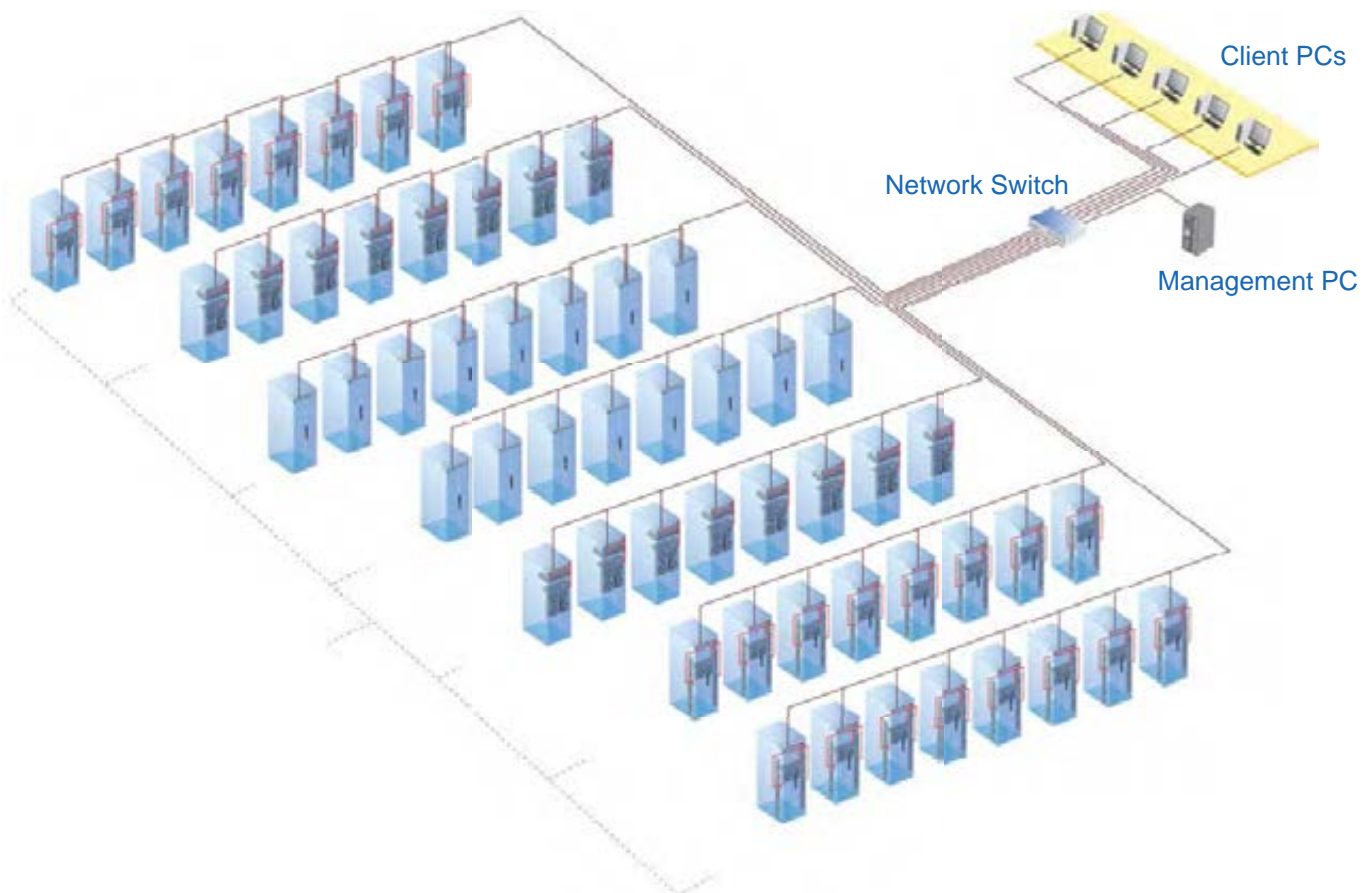


## Application

### < 6.1 > Data Center

By mixed connection, InfraSolution X can be scalable up to 3000 cabinets. X-2000 and X-1000 InfraBoxes can be coexisted in the same network. Users are enabled to manage and remotely access all cabinets under a centralized and user friendly GUI.

- Connect the 1st InfraBox in each daisy chain to the network switch
- Connect the management PC and client PCs via the network switch
- Up to 3000 Infraboxes / Cabinets

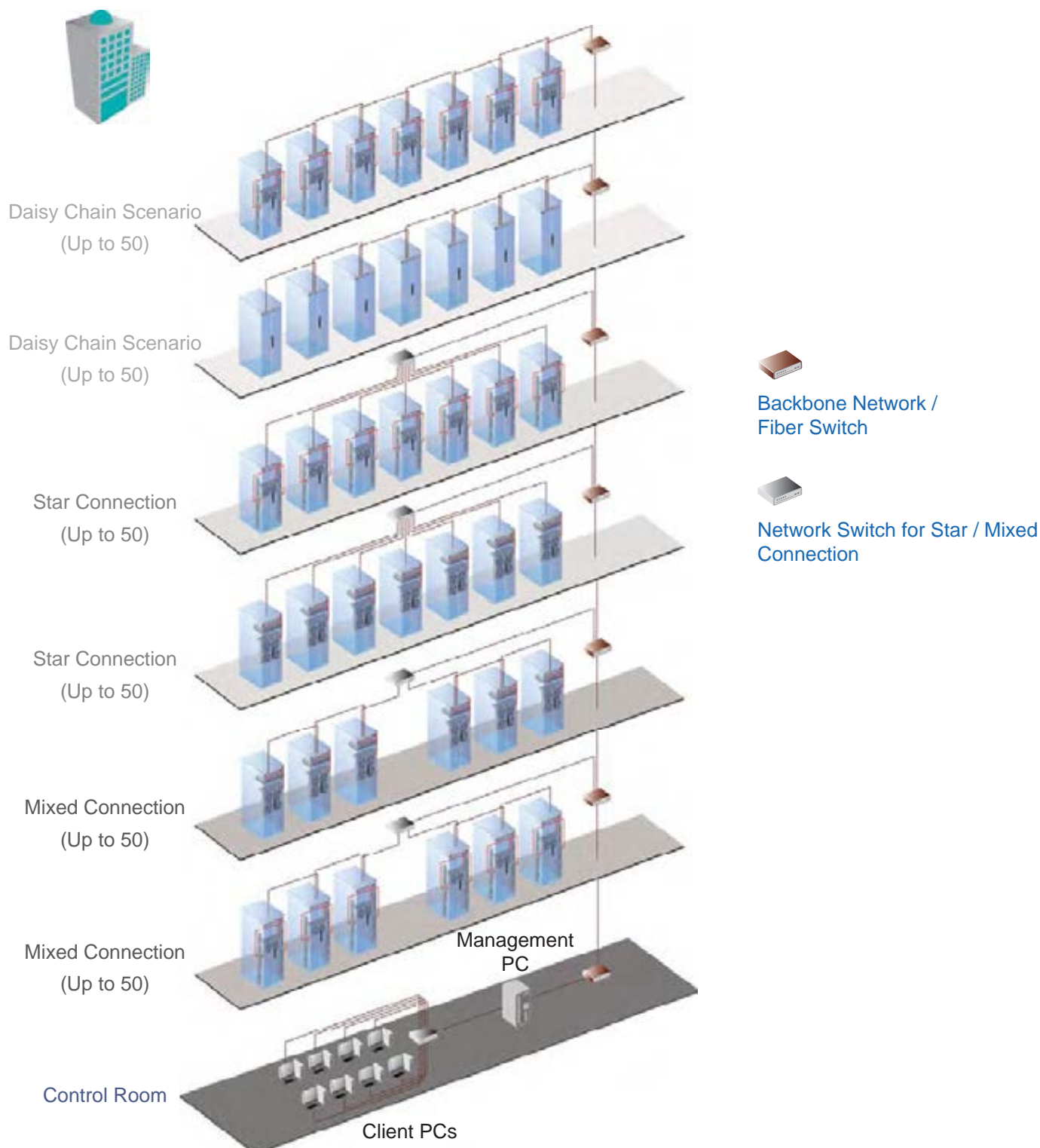


## < 6.2 > Intelligent Building

It is essential for a Multi-Storey Intelligent Building to be applied with a centralized management system for the building's mechanical and electrical equipment such as security, power, ventilation, and lighting systems, etc.

InfraSolution X system allows equipment to be distributed throughout a building simply by deploying an Ethernet network. To keep capital costs down, InfraSolution X can also be cascaded between boxes up to 100m over a Cat5/6 cable. Signal weakness problem for long distance between InfraBoxes can be solved by applying network hubs with repeater function.

- Connect the InfraSolution X network in each floor via the network ethernet / fiber switch
- Up to 3000 Infraboxes / Cabinets

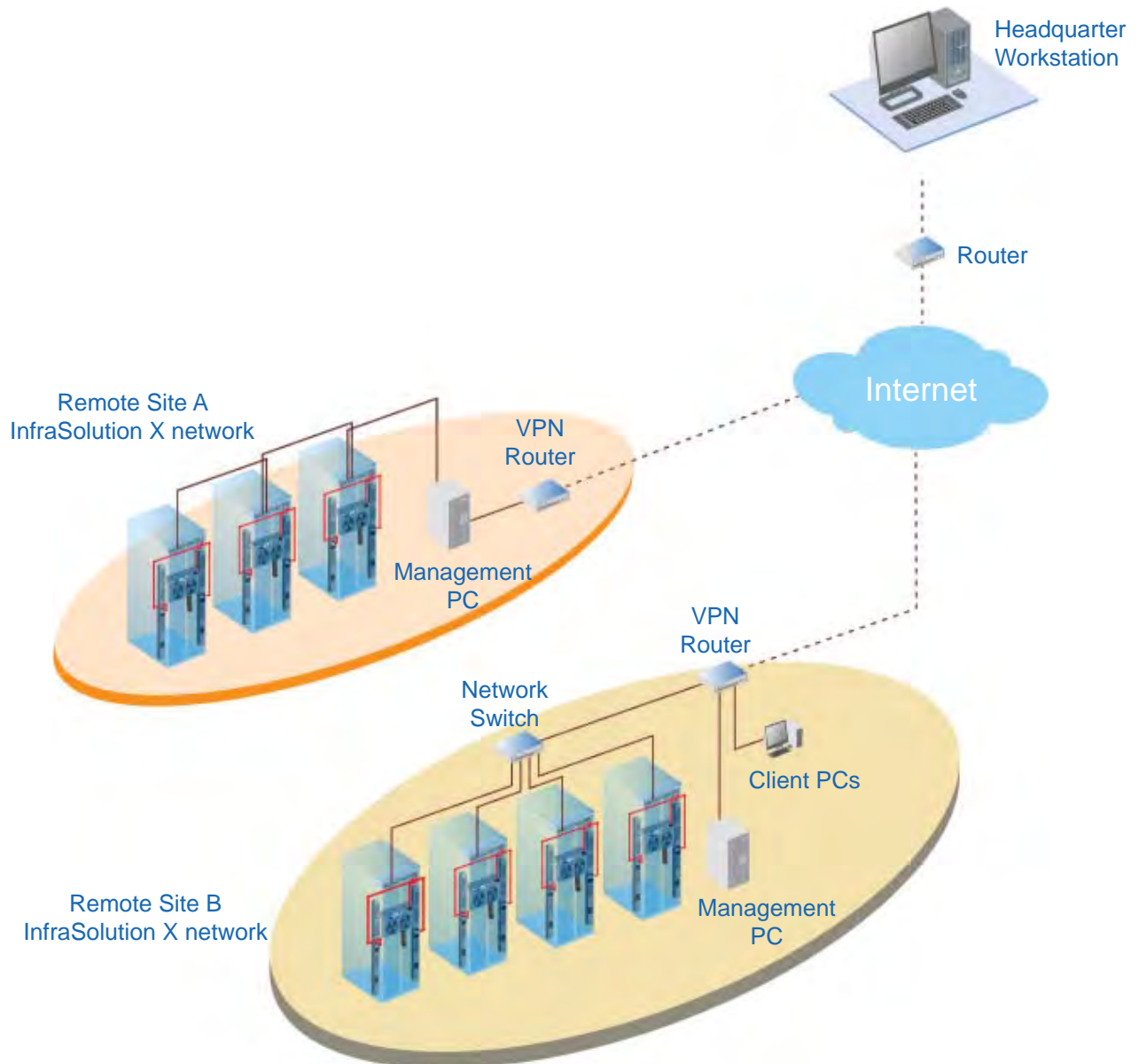


## < 6.3 > Remote Site

InfraSolution X can be also applied to the remote site for access and monitoring over IP anytime and anywhere.



InfraSolution X Software License is required for each remote site / management PC

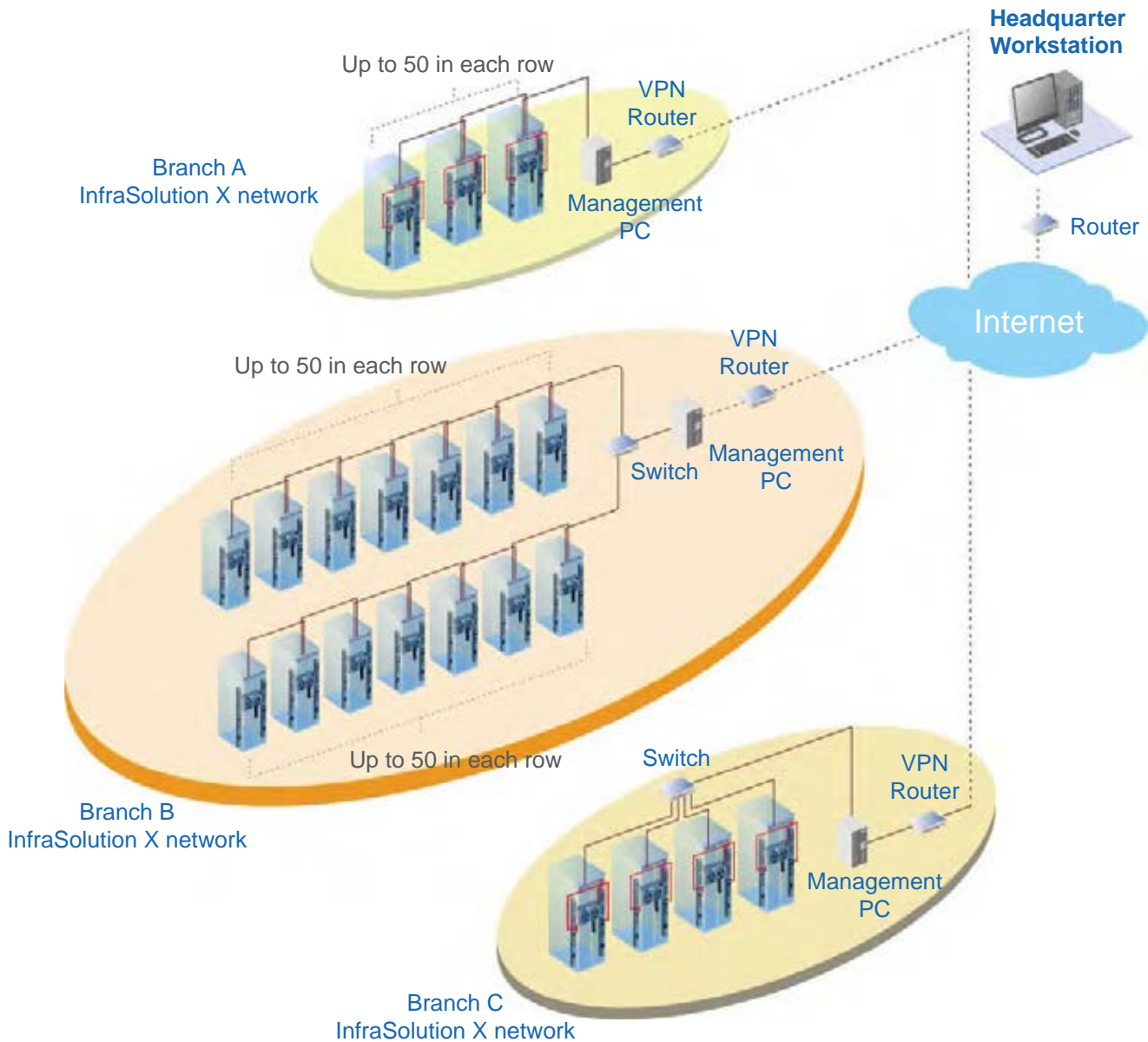


## < 6.4 > Branches

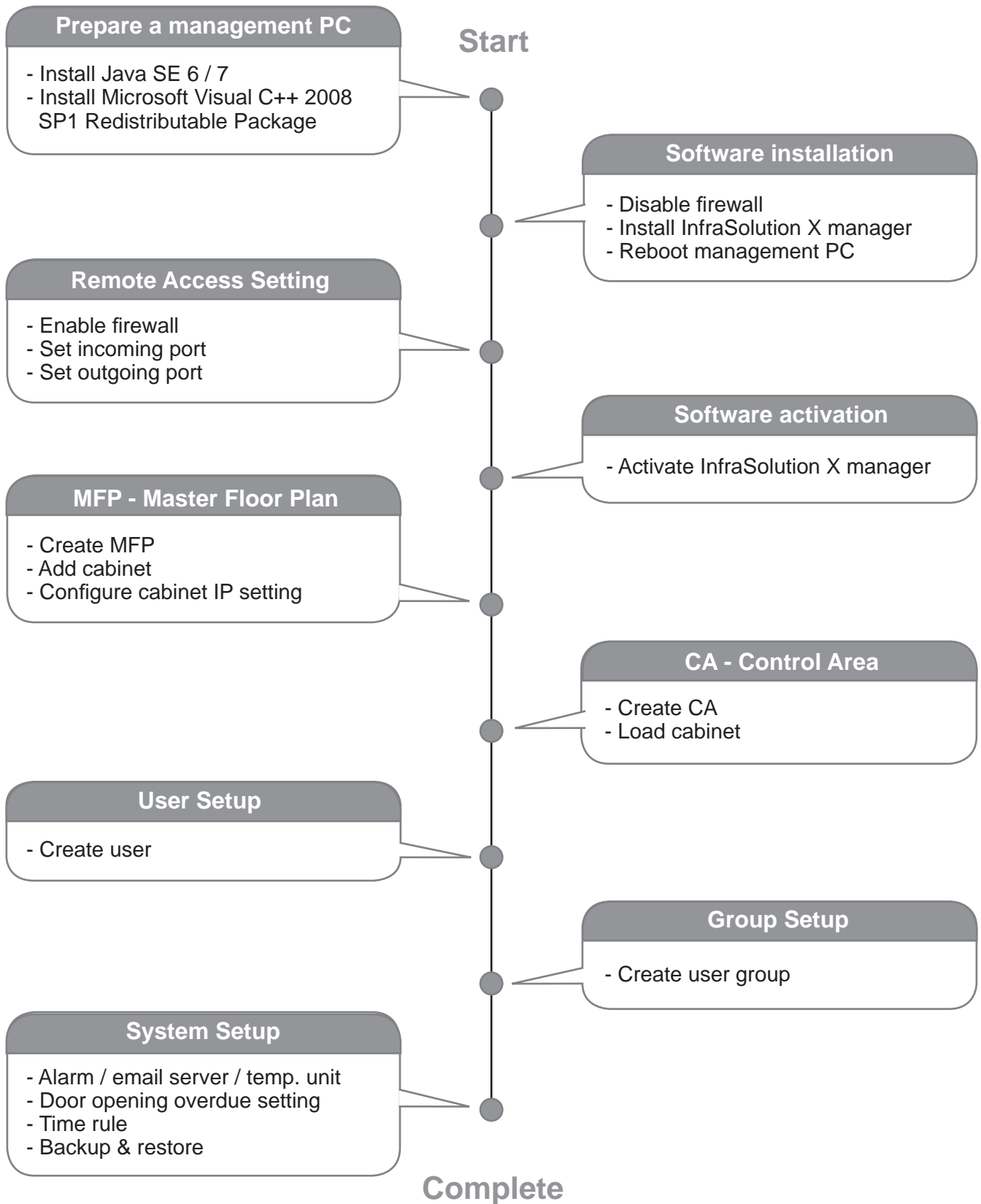
For a global or scalable company, it is vital to remote access and monitor the network of their nationwide and worldwide branches. InfraSolution X provides an ideal solution to keep an eye on cabinet access security and environmental condition.



InfraSolution X Software License is required for each remote site / management PC



## < 7.1 > Tips for System Setup



## < 8.1 > Key Word

### MFP - Master Floor Plan

- An actual cabinet floor plan.
- Only in MFP, you can create cabinet & configure the IP setting for the cabinet.
- If you want to monitor & control cabinets & their devices, you need to build the control area.
- MFP can be more than one. No. of MFP is subject to the site scale & plan by floor, zone, building, branches or remote sites.

### CA Loading

- There is a button in MFP - CA Loading. It is to provide a quick and efficient path for the user to move cabinet to build the control area.

### CA - Control Area

- You can build a Control Area for some specific cabinets which you want to monitor, configure & control.
- All cabinets in the CA should be loaded from the MFP by CA Loading button.
- CA can be more than one. How many CA is subject to your plan.
- CA has 2 modes : Edit mode & View mode.
- Under Edit mode, you can configure not only cabinets but also devices such as PDU, fan unit & sensors.
- View mode is designed for users with limited authority so they can ONLY monitor the status of cabinet & device.

### User Setup

- To build a user list. Afterward, you can use the list to build the user group.
- Each user has his own login name & password for remote system login.
- Each user also has his own smartcard for cabinet access.
- However, before users join a user group in next step, they can do nothing.

### User Group

- You can form a user group from the user list.
- You can define the user group with authority and which control area / areas to monitor & access.
- Each user subordinated to ONLY ONE user group.
- If the user wants to join another user group, a new login name, password & smartcard MUST BE assigned.
- Each user group must select ONE time rule. All group users can access the cabinet and remote system login according to the time period of the selected time rule.
- Without time rule assignment, all group users can do nothing.

### Time Rule

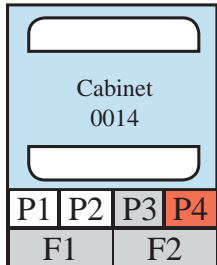
- Time rule is designed for security. It tries to restrict the users with a time period to access the system and cabinet.
- In system setup section < 11.5 >, you can set time rules up to 32.
- Afterward, all time rules will be shown in user group for their selection.
- Only one time rule can be assigned to one user group.

## < 8.1 > Cabinet Icon

### Cabinet Icon layer

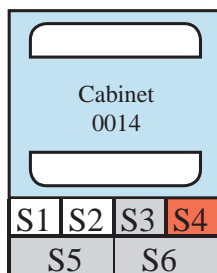
Cabinet icon has two layers, the layer one by default shows on all control area under view mode for status monitoring. User can click cabinet icon to switch to layer two.

#### Layer one



- show PDU status ( **P1, P2, P3, P4** )
- if PDU is enabled & connected, **P** icon in WHITE color
- if PDU is enabled BUT disconnected, **P** icon in RED color
- if PDU is on alarm status, **P** icon also in RED color
- if PDU is disabled, **P** icon in GREY color
- show Fan unit status ( **F1, F2** )
- if Fan unit is enabled & connected, **F** icon in WHITE color
- if Fan unit is enabled BUT disconnected, **F** icon in RED color
- if Fan unit is on alarm status, **F** icon also in RED color
- if Fan unit is disabled, **F** icon in GREY color

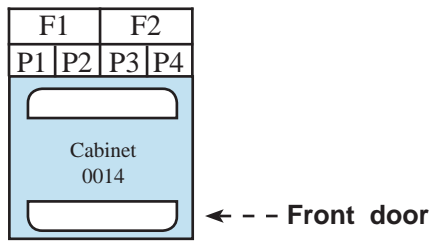
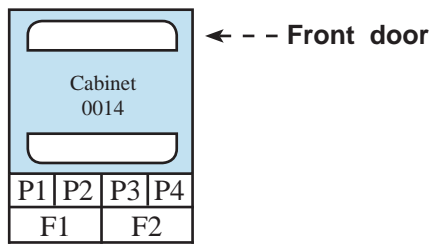
#### Layer two



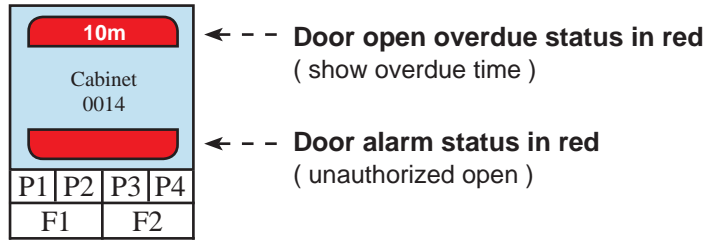
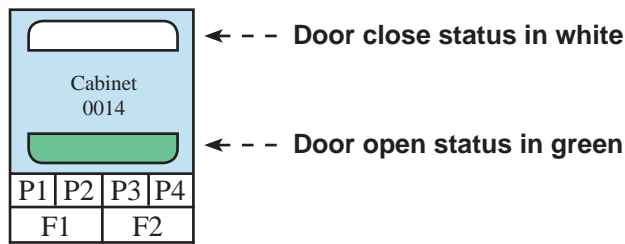
- show TH sensor status ( **S1, S2** )
- if TH sensor is enabled & connected, **S1, S2** icon in WHITE color
- if TH sensor is enabled BUT disconnected, **S1, S2** icon in RED color
- if TH sensor is on alarm status, **S1, S2** icon also in RED color
- if TH sensor is disabled, **S1, S2** icon in GREY color
- show smoke & shock sensor status ( **S3, S4** )
- if smoke & shock sensor is enabled & connected, **S3, S4** icon in WHITE color
- if smoke & shock sensor is on alarm status, **S3, S4** icon also in RED color
- if smoke & shock sensor is disabled, **S3, S4** icon in GREY color
- show water sensor status ( **S5, S6** )
- if water sensor is enabled & connected, **S5, S6** icon in WHITE color
- if water sensor is on alarm status, **S5, S6** icon also in RED color
- if water sensor is disabled, **S5, S6** icon in GREY color

< 8.1 > Cabinet Icon

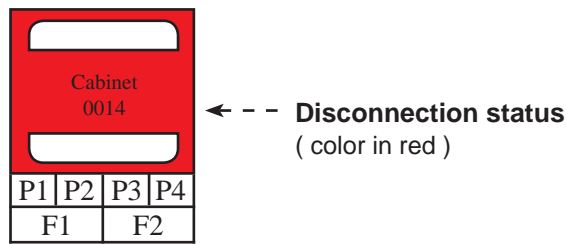
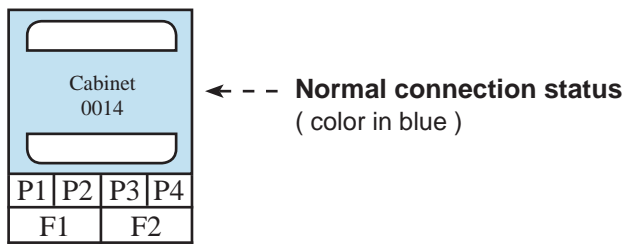
Door direction



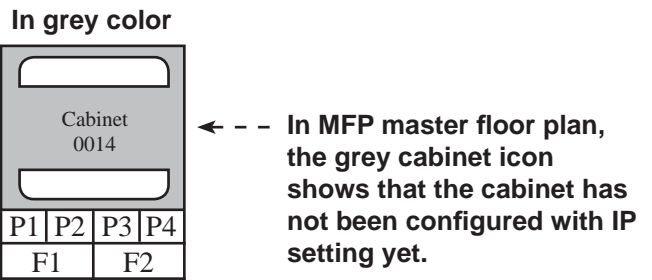
Door status



Connection status



Non-configure cabinet



In CA control area, the grey cabinet icon shows that the cabinet has been deleted in master floor plan. The user should remove this non-function cabinet from control area.

## Software Installation & Activation

### < 9.1 > Key Features

InfraSolution X Manager X-ISM is a LICENSED cabinet management software to monitor up to 3000 cabinets remotely.

Each InfraBox connects a pair of smartcard handles to secure the cabinet access control.

Each InfraBox can also connect a variety of sensors to provide an environmental monitoring solution.

To enhance the functionality, up to 12000 x kWh PDU / 6000 x Fan Unit can be monitored through InfraSolution X Manager as well.

Up to 100 concurrent users can access the management software remotely to achieve the demand of multi-user / multi-tasking in nowadays' time sharing data center operation.

### InfraSolution X Manager X-ISM

Features		
Capacity	InfraBox	3000
	Concurrent user	100
System Setup	Backup / Restore Setting	✓
	Time Rule Setting	✓
	Alarm Mail Server Setting	✓
	Audio and Visual Alarm Output Setting	✓
Cabinet Overview Door	Status of Door, PDU, Sensor & Fan unit	✓
	Door open by remote	✓
	Last door open & close record	✓
Sensor Peripherals	Status Monitoring	✓
	Temp-Humid Alarm Threshold Setting	✓
PDU	Energy Consumption kWh / Amp. Monitoring	✓
	Outlet Level Measurement	✓
	PDU Outlet Grouping / Schedule	✓
	Outlet Switch ON / OFF	✓
	Amp. Alarm Threshold Setting	✓
	Amp. Rising / Low Alert Threshold Setting	✓
	Temp-Humid Monitoring	✓
Fan Unit	CFM & Temp. Monitoring	✓
	Unit CFM ( fan speed ) Setting	✓
	Auto CFM Control Setting	✓
	Individual Fan Kit ON / OFF	✓
	Fan Unit ON / OFF	✓
Chart / Event / Reporting	System & Device Event Reporting	✓
	Temp-Humid Line Chart of InfraBox	✓

## < 9.2 > CD Key Box

A licensed software, InfraSolution X Manager X – ISM, is bundled with a CD Key.  
The CD Key Box consists of a software CD and a software license certificate



### SOFTWARE LICENSE CERTIFICATE

ISSUE DATE: <today>

S/N: 2-130812-000000-XMS01

Dear customer:

Thank you for purchasing SOFTWARE from Austin Hughes Electronics Ltd. Please take good care of SOFTWARE CD Key. This LICENSE CERTIFICATE will serve as the main document to prove your legal right to use legitimate software.

Please do not disclose the SOFTWARE CD Key to the unauthorized person.

You may install and use one copy of the SOFTWARE, or in its place, any prior version for the same operating system (O.S.), on a single computer (Management PC).

Please read End User License Agreement (EULA) for more details or visit the link below:

<http://www.austin-hughes.com/index/eula.html>

RESELLER : ABC COMPANY

CONTACT PERSON : Peter Chan

License Information	
Software Model	InfraSolution X Manager X-ISM
CD KEY	XXXXXX-XXXXXX-XXXXXX-XXXXXX-XXXXXX-XXXXXX
NO. OF CLIENTS	10
NO. OF NODES	50

Software download : <http://www.austin-hughes.com/downloads/IPDL/software.html>

Software activation : <http://www.austin-hughes.com/activations>

Technical support : [support@austin-hughes.com](mailto:support@austin-hughes.com)

## < 9.3 > Management PC & Client PC Requirement

### Management PC requirement

Management PC requirement is highly related to the no. of cabinet. Please refer to the table below :

No. of Cabinet	Processor	Memory	Hard Disk	LCD Resolution	No. of days log file kept in database
2 - 200	Quad Core Xeon x 1	4GB	1TB x 2	1660 x 1200, 1600 x 900, 1920 x 1080	31
201 - 500	Quad Core Xeon x 1	8GB	1TB x 2	1660 x 1200, 1600 x 900, 1920 x 1080	31
501 - 1000	Quad Core Xeon x 1	16GB	2TB x 4	1660 x 1200, 1600 x 900, 1920 x 1080	15
Over 1000	Quad Core Xeon x 2	32GB	4TB x 4	1660 x 1200, 1600 x 900, 1920 x 1080	7



- The default service port of web server is 80.
  - A dedicated PC to run InfraSolution X Manager X- ISM is recommended.
  - If the PC is a notebook computer, the power adapter MUST be plugged in & power ON.
  - Make sure the management PC is POWER ON & X-ISM is under operation.
- Otherwise, daily data backup will NOT be proceeded.



To legally access Microsoft server software, a Client Access License ( CAL ) may be required.

For more information, please visit the link below :

<http://www.microsoft.com/licensing/about-licensing/client-access-license.aspx>

### Client PC requirement

Processor	Memory	Hard Disk	LCD Resolution
Dual Core x 1	2GB	500GB	1660 x 1200, 1600 x 900, 1920 x 1080

**For better view of cabinet status, an appropriate LCD size is necessary.**  
Please refer to the table below :

No. of Cabinet in CA	Preferred LCD Size
2 - 100	21" ( 1920 x 1080 )
101 to 300	46" ( 1920 x 1080 )

## < 9.4 > OS Platform & Web Browser

### OS platform

- MS Windows Server 2008 Standard Edition ( 32 bit & 64 bit, English Edition )
- MS Windows Server 2008 R2 ( English Edition )

### Web browser

- I.E. Version 9.0 , 10.0
- Google Chrome Version 23 or above



Make sure users login the management PC as a member of “ Administrator “ Group before X-ISM installation & execution.

## < 9.5 > Prerequisite before software installation

Components OS Platform	Windows 2008 server standard, 32bit	Windows 2008 server standard, 64bit	Windows 2008 server R2
Java SE 6 / 7 ( i586 )	✓		
Java SE 6 / 7 ( x64 )		✓	✓
Microsoft Visual C++ 2008 SP1 Redistributable Package ( X86 )	✓		✓
Microsoft Visual C++ 2008 SP1 Redistributable Package ( X64 )		✓	✓



The firewall setting of the management PC MUST be OFF

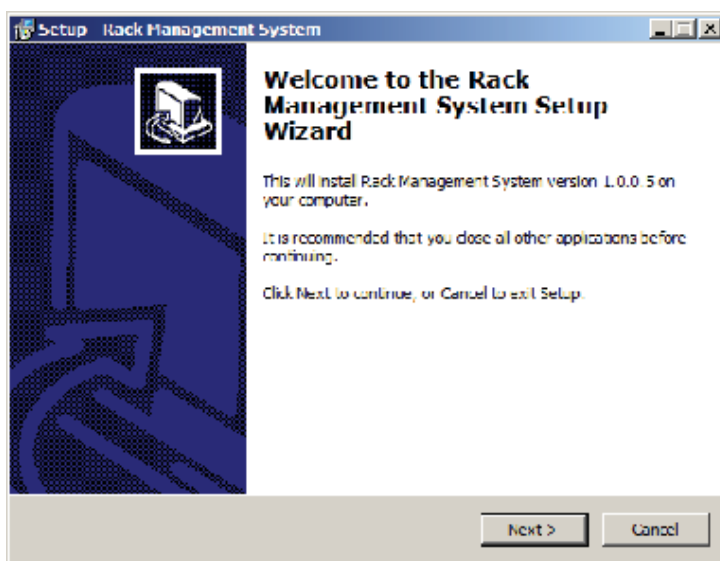
## < 9.6 > Software Installation

After the InfraBox installation, please follow the steps below to install the

InfraSolution X Manager - Matrix Server



1. Double click the **X-ISM.exe** in software CD come with the CD Key Box and follow the instruction to complete the installation.



click “ **Next** ”



click “ **Install** ”



click “ **Finish** ”      . . . . . **Complete**



The management PC must reboot before proceed to Software Activation

## < 9.7 > Remote Access

After software installation, administrator can turn on firewall of the management PC and set the inbound & outbound rules of firewall.

### Inbound rules :

1. Open “ **Control Panel** ”
2. Select “ **Windows Firewall** ”
3. Select “ **Advanced settings** ”
4. Right Click “ **Inbound Rules** ” & select “ **New Rules...** ”
5. Select “ **Port** ” & Click “ **Next>** ”
6. Select “ **TCP** ” then input “ **80, 4000, 5432, 18081** ” in “ **Specific local ports:** ”
7. Select “ **Allow the connection** ” & Click “ **Next>** ”
8. Tick all three options & Click “ **Next>** ”
9. Input the “ **Name** ” & “ **Description** ” of the port & Click “ **Finish** ”

### Outbound rules :

1. Open “ **Control Panel** ”
2. Select “ **Windows Firewall** ”
3. Select “ **Advanced settings** ”
4. Right Click “ **Outbound Rules** ” & select “ **New Rules...** ”
5. Select “ **Port** ” & Click “ **Next>** ”
6. Select “ **TCP** ” then input “ **4001, 4003, 4006, outgoing SMTP port** ” in “ **Specific remote ports:** ”
7. Select “ **Allow the connection** ” & Click “ **Next>** ”
8. Tick all three options & Click “ **Next>** ”
9. Input the “ **Name** ” & “ **Description** ” of the port & Click “ **Finish** ”



The port no. of outgoing SMTP port depends on the mail server setting in < 11.2 >

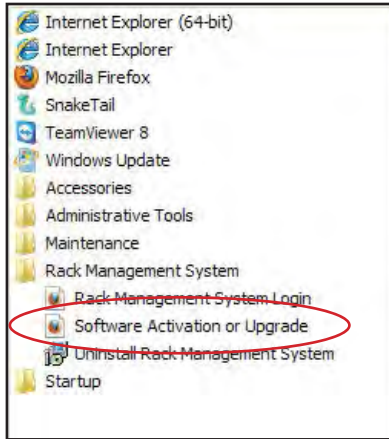
## < 9.8 > Software Activation

After software installation is completed, please follow the steps below to do the software activation

1. Click “ **Start** ” & Select “ **Software Activation or Upgrade** ”



2. The “ **Software Activation / Upgrade** ” web page pops up



3. Input “ **CD Key** ” & Click “ **Submit** “. The “ **Installation Key** ” will be generated automatically.

Please activate your InfraSolution X Manager software with CD Key. (see below)

CD Key :	2B0C03-000C44-5263A2-070113-E46755-3FF2A1	Delete
Installation Key :	C059D2-D970EF-749970-029978-44C5D7	



4. Click “ **Activate Online** ” & go to “ **Software Online Activation Centre** ” directly

**Active Online:**

If the Management PC has internet access, please click "Activate Online" button. It will directly link to our Software Online Activation Centre.

**Active Online**

**Active Offline :**

Write down the CD Key and Installation Key on a piece of paper and go to the website <http://www.austin-hughes.com/activations/> for software activation with any PC with internet access.



## < 9.8 > Software Activation

5. Fill in all necessary information & Click “ **Submit** “. Then Click “ **OK** “ from the pop up window to get the “ **Activation Code** “

**Software Online Activation Center**

Welcome to the Austin Hughes SOFTWARE Online Activation Center!

In order to begin, you need to fill in the following information and get the Official Valid Activation Code.

For technical support: [support@austin-hughes.com](mailto:support@austin-hughes.com)

\* CD Key : 2B0C03 - 000C44 - 5263A2 - 070113 - E46755 - 3FF2A1

\* Installation Key : C059D2 - D970EF - 749970 - 029978 - 44C5D7

\* End User Company Name : ABC Company

\* End User First Name : Peter

\* End User Last Name : Chan

\* End User Email Address : peter.chan@abc.com

End User Phone Number : 3520 1120

Date of Purchase : 2013 - 8 - 1

Reseller : XYZ Company

Please complete all of the required fields ( \* ) above before hitting the Submit button.



6. Input the “ **Activation Code** “ & Click “ **Submit** “ in the “ **Software Activation / Upgrade** “ web page to complete the software activation

If the activation is successful, please input the activation code in the box below and click "Submit".

Activation Code : 3E2048 - 682BF7 - 12343F - 73AADF



7. Once the software activation is completed, the following web page will be displayed.

**Software Activation / Upgrade**

Active CD Key : 2B0C03-000C44-5263A2-070113-E46755-3FF2A1

Active Installation Key : C059D2-D970EF-749970-029978-44C5D7

Active Activation Code : 3E2048-682BF7-12343F-73AADF

Number of User : 12

Number of Node : 94

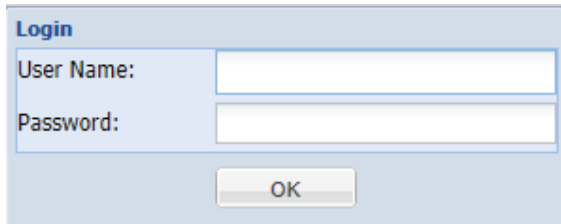


..... **Complete**

## Operation Setup

After the software is activated, user can follow below steps to access the management PC and InfraSolution X Manager – Matrix Server

1. Open the web browser of remote client PC
2. Enter “ *http:// ManagementPC IP address/RMS\_2013/RMS\_2013.html* “
3. Enter the login name & password

A light blue login dialog box with a title bar. The title is "Login" in bold blue text. Below the title, there are two input fields. The first is labeled "User Name:" and the second is labeled "Password:". Both labels are in a light blue box. Below the input fields is a button labeled "OK".

Default login name : admin

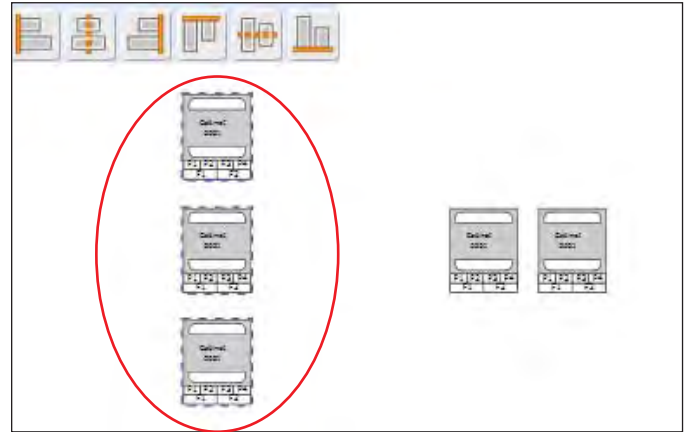
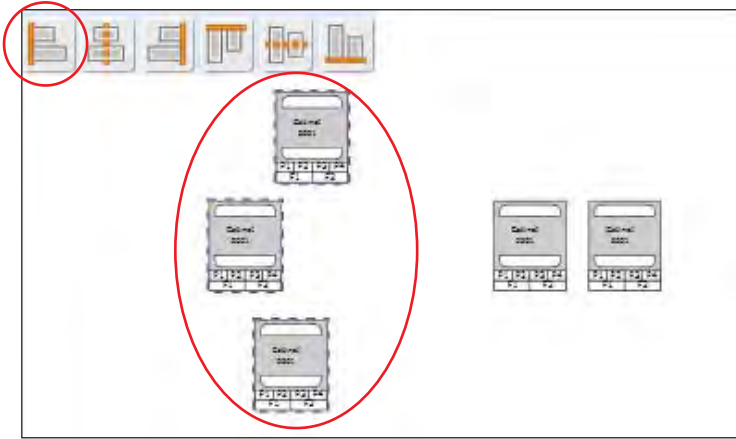
Default login password : admin

## < 10.1 > Cabinet Alignment

In MFP & CA, the system provides alignment function for user to arrange the cabinet in a neat way

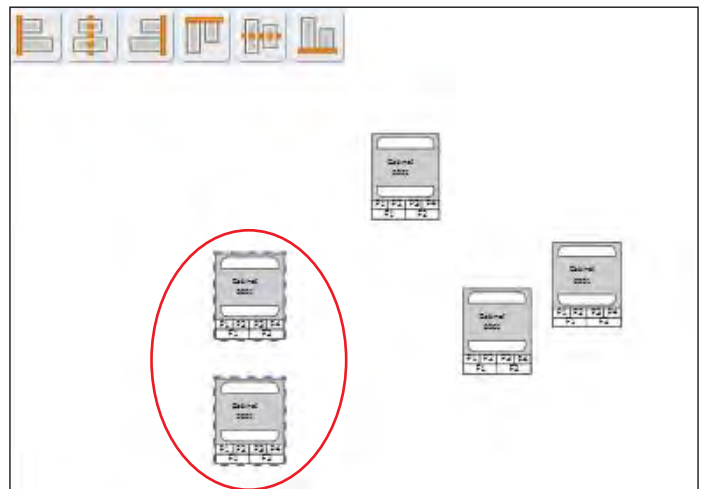
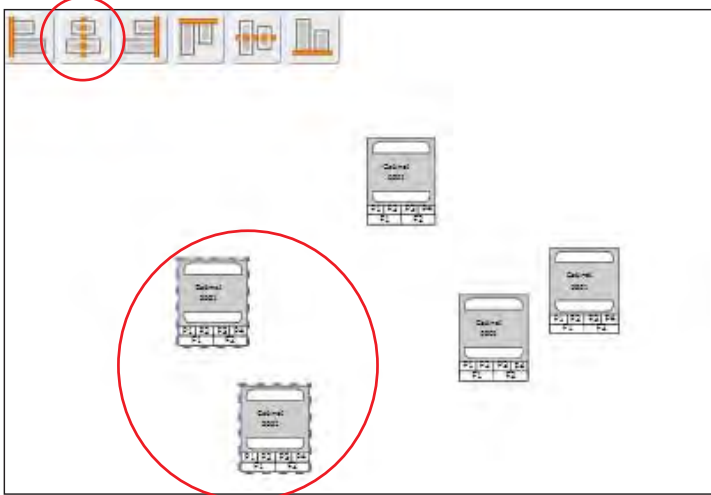
### Alignment - Left

1. Press < Shift > to select the 3 highlighted cabinets
2. Release < Shift >
3. Press < Align Left >



### Alignment - Center

1. Press < Shift > to select the 2 highlighted cabinets
2. Release < Shift >
3. Press < Align Center >



### Alignment - Right

1. Press < Shift > to select the 2 highlighted cabinets
2. Release < Shift >
3. Press < Align Right >



### Alignment - Top

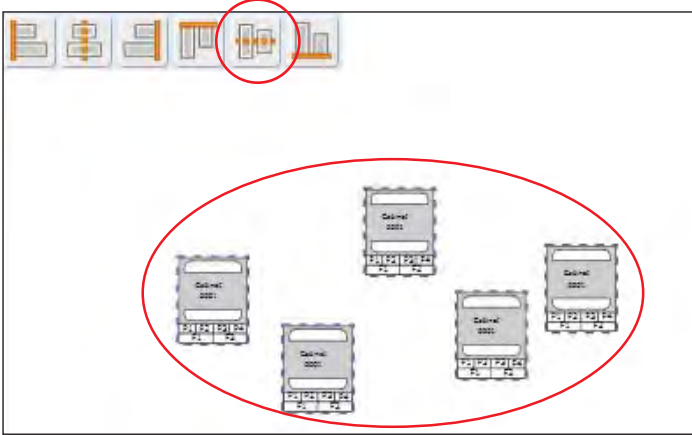
1. Press < Shift > to select the 5 highlighted cabinets
2. Release < Shift >
3. Press < Align Top >



## < 10.1 > Cabinet Alignment

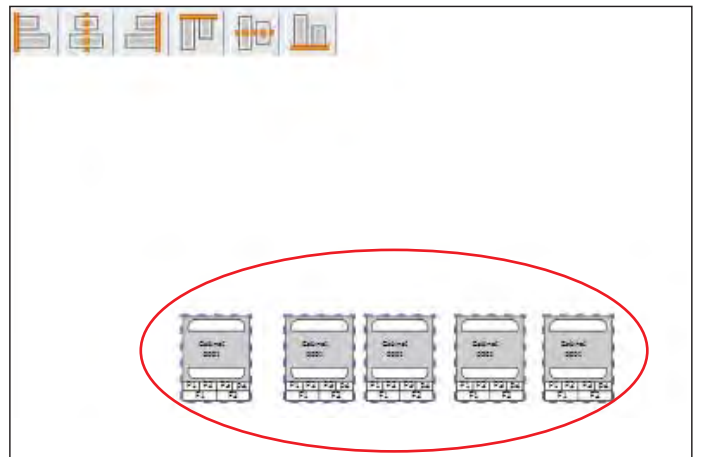
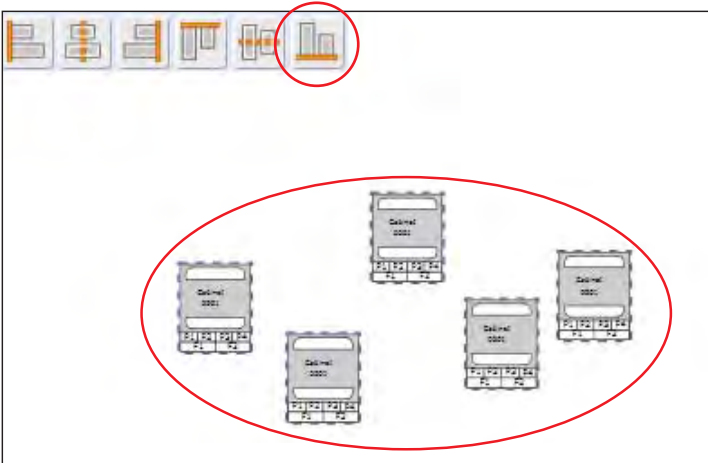
### Alignment - Middle

1. Press < Shift > to select the 5 highlighted cabinets
2. Release < Shift >
3. Press < Align Middle >



### Alignment - Bottom

1. Press < Shift > to select the 5 highlighted cabinets
2. Release < Shift >
3. Press < Align Bottom >



## < 10.2 > MFP - Master Floor Plan

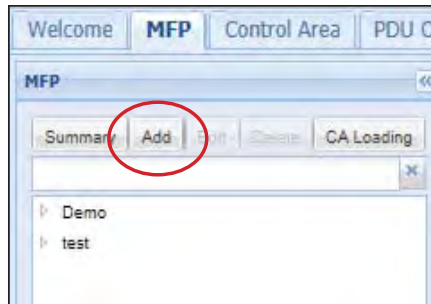
- An actual cabinet floor plan.
- Only in MFP, you can create cabinet & configure the IP setting for the cabinet.
- If you want to monitor & control cabinets & their devices, you need to build the control area.
- MFP can be more than one. No. of MFP is subject to the site scale & plan by floor, zone, building, branches or remote sites.



Ensure **ONLY** one user configures the cabinet IP in the same MFP at the same time

### Add MFP

1. Click “ **MFP** ” tab
2. Click “ **Add** ”
3. Input the MFP title & Description  
( min. 1 char / max. 32 char )
4. Click “ **OK** ” to finish





### Edit MFP

1. Select the MFP you want to edit
2. Click “ **Edit** ”
3. Edit the MFP title / Description
4. Click “ **OK** ” to finish

## < 10.2 > MFP - Master Floor Plan

### Add Cabinet

1. Select the MFP you want to add cabinet (s )
2. Click “” to add cabinet. ( 1 / 5 / 10 cabinets at one time )
3. Click “” & Click “**Yes**” to confirm cabinet addition

### Cabinet IP configuration

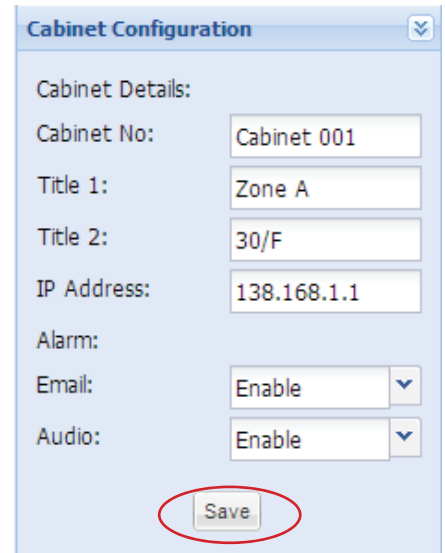
1. Select a cabinet
2. Input : “ **Cabinet No.** ” (min 4 char / max. 16 char. ),  
“ **Title 1** ” ( min. 2 char / max. 8 char ),  
“ **Title 2** ” ( min. 2 char / max. 8 char ),  
“ **IP address** ”, Enable / Disable the email & audio alarm  
( If email alarm is “ **Disable** ” , NO alarm email will be sent to user. )
3. Click “ **Save** ” to finish the cabinet IP configuration



Repeat step 1 to 3 for all cabinets ONE BY ONE.

Once the cabinet is configured, the IP address CANNOT BE edited.

Users need to delete cabinet in the MFP & create a new one.



Cabinet Configuration

Cabinet Details:

Cabinet No: Cabinet 001

Title 1: Zone A

Title 2: 30/F

IP Address: 138.168.1.1


Alarm: ☐

Email: Enable


Audio: Enable

Save

### Delete Cabinet

1. Select the cabinet you want to delete in the MFP
2. Click “” & Click “**Yes**” to confirm the cabinet deletion


### Delete MFP

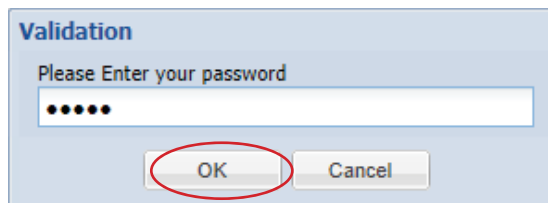
1. Select the MFP you want to delete
2. Select all cabinets in the MFP to clear first
3. Click “” & Click “**Yes**” to confirm to clear all cabinet
4. Then select the MFP & Click “ **Delete** ”
5. Click “ **Yes** ” in the confirmation window to confirm MFP deletion

## < 10.3 > CA - Control Area

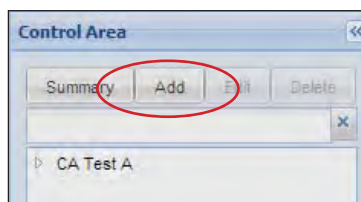
- You can build a Control Area for some specific cabinets which you want to monitor, configure & control.
- All cabinets in the CA should be loaded from the MFP by CA Loading button.
- CA can be more than one. How many CA is subject to your plan.
- CA has 2 modes : Edit mode & View mode.
- Under Edit mode, you can configure not only cabinets but also devices such as PDU, fan unit & sensors.
- View mode is designed for users with limited authority so they can ONLY monitor the status of cabinet & device.

### Add CA

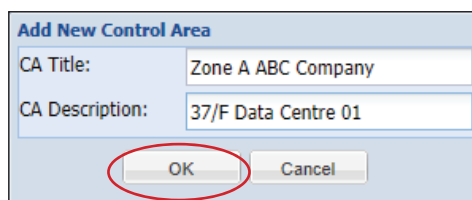
1. Click “ **Control Area** ” tab
2. Click “  ” & input the login password in validation window to enter “ **Edit Mode** ”



3. Click “ **Add** ”

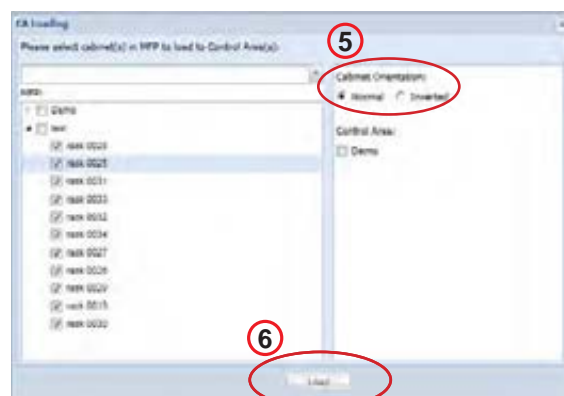


4. Input the CA title & Description  
( min. 1 char / max. 32 char )
5. Click “ **OK** ” to finish CA addition



### Load Cabinet

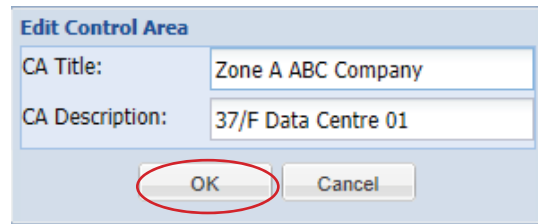
1. Go back to “ **MFP** ” tab
2. Select the MFP where the cabinet( s ) you want to load to CA
3. Click “ **CA loading** ”
4. You can load whole MFP cabinets or part of them by tick
5. In “ **Cabinet Orientation** ”, you can select Normal if the rear door at bottom side, or select Inverted if the rear door at top side
6. Click “ **Load** ” button to finish CA loading.



## < 10.3 > CA - Control Area

### Edit CA

1. In < **CA – Edit Mode** >, select the CA you want to edit
2. Click “ **Edit** ”
3. Edit the CA title / Description
4. Click “ **OK** ” to finish




### Delete CA

1. In < **CA – Edit Mode** >, select the CA you want to delete & Click “ **Delete** ”
2. Click “ **Yes** ” in the confirmation window
3. Input login password in validation window to confirm CA deletion

### Remove Cabinet from CA

#### Cabinet removal from CA

1. In < **CA – Edit Mode** >, select the CA you want the cabinet(s) to be removed
2. Select the cabinet(s)
3. Click “  ”
4. Click “ **Yes** ” in the confirmation window to confirm the cabinet removal

## < 10.4 > User Setup

- To build a user list. Afterward, you can use the list to build the user group.
- Each user has his own login name & password for remote system login.
- Each user also has his own smartcard for cabinet access.
- However, before users join a user group in next step, they can do nothing.

### Add User

1. Click “ **User Setup** ” tab
2. Click “ **Add** ”
3. In the user window, please input all the fields.
4. If you want to receive device alarm email, tick “ **Email Alert** ” ( Default : untick )
5. If you want to suspend the user authority and access temporarily, tick “ **User Suspended** ” ( Default : untick )
6. Then click “ **Save** ” to finish

The screenshot shows a 'User' setup window with the following fields and values:

- First Name: Peter
- Last Name: Chan
- Title: IT Manager
- Staff ID: 12345678
- Dept: MIS
- Phone: ( 852 ) 3310 0700
- Mobile: ( 852 ) 6789 5600
- Email: Peter.Chan@abc.com
- Company: ABC Company
- Smart Card No.: 10809901
- Issue Date: 2013-08-15
- Expiry Date: 2015-08-14
- Login Name: Peter
- New Password: \*\*\*\*\*
- Confirm Password: (empty)

At the bottom, there are two checkboxes:

- ☒ Email Alert (4)
- ☐ User Suspended (5)

Buttons at the bottom: Save, Cancel.

### Edit User

1. Select the user you want to edit
2. Click “ **Edit** ” in “ **User Details** ” window
3. Edit the field ( s ) you want
4. Click “ **Save** ” & Click “ **Yes** ” in the confirmation window to confirm user edition.

### Delete User

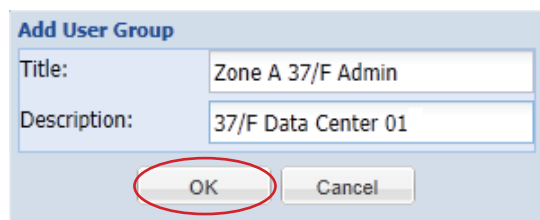
1. Select the user you want to delete
2. Click “ **Delete** ” in “ **User Details** ” window & Click “ **Yes** ” in the warning window to confirm user deletion

## < 10.5 > Group Setup

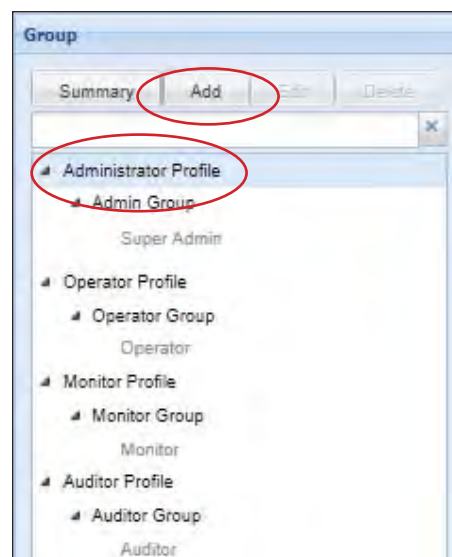
- You can form a user group from the user list.
- You can define the user group with authority and which control area / areas to monitor & access.
- Each user subordinated to ONLY ONE user group.
- If the user wants to join another user group, a new login name, password & smartcard MUST BE assigned.
- Each user group must select ONE time rule. All group users can access the cabinet and remote system login according to the time period of the selected time rule.
- Without time rule assignment, all group users can do nothing.

### Add group

1. Select the Group Profile where a group you want to add
2. Click “ **Add** ”
3. Input the Group Title & Description ( min. 1 char / max. 32 char )
4. Click “ **OK** ” to finish

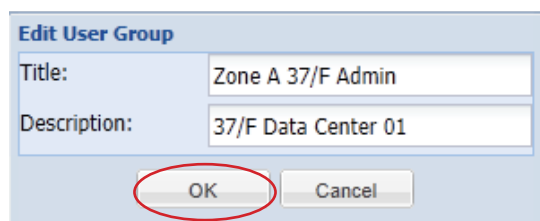


The 'Add User Group' dialog box contains two text input fields. The first field, labeled 'Title:', contains the text 'Zone A 37/F Admin'. The second field, labeled 'Description:', contains the text '37/F Data Center 01'. At the bottom of the dialog, there are two buttons: 'OK' and 'Cancel'. The 'OK' button is circled in red.



### Edit group



1. Select the group title you want to edit
2. Click “ **Edit** ”
3. Edit the Title / Description
4. Click “ **OK** ” to finish



The 'Edit User Group' dialog box is identical to the 'Add User Group' dialog box. It contains the same text input fields with 'Zone A 37/F Admin' and '37/F Data Center 01'. The 'OK' button at the bottom is circled in red.

## Assign group authority

To assign authority to User group, please take the steps below :

1. Select the group
2. Click “ **Edit** ”
3. Tick the user( s ) you want to assign to the group
4. Tick the Control Area( s ) you want the group to control & monitor
5. Assign appropriate “ **Setup** ” , “ **Device Configuration** ” , “ **System & Device Log** ” authority to the group
6. Select one of the time rule in “ **Time Access Setting for User Group:** ”
7.  Tick “ **SmartCard Access** ”, otherwise the group user CANNOT access the cabinets by smartcard ( Default : untick )
8.  If you want the group user can NOT access the software out of the time rule, please tick “ **Remote System Login** ” ( Default : untick )
9. Click “ **Save** ” & “ **Yes** ” in the warning window to finish Group authority assignment



The screenshot shows the 'Group Details' configuration window. On the left, a tree view shows the 'Administrator Profile' expanded, with 'AAA' selected and circled (1). The main area contains several sections: 'User(s)' (2) with a list of users including 'Operator' (checked), 'Control Area(s)' (3) with a list of zones including 'XYZ Company Zone A3' (checked) and 'XYZ Zone B1' (checked), 'Authority Category' (4) with 'Setup' (checked) and 'Device Configuration' (checked), 'System & Device Log' (5) with 'User Activity' (checked), 'Time Access Setting for User Group' (6) with 'Working hours' selected, and 'Applied to' (7) with 'Smart Card Access' (checked) and 'Remote System Login' (8) (unchecked). The 'Save' and 'Cancel' buttons are at the bottom right.

## Delete group

1. Select the group you want to delete
2. Click “ **Delete** ” & Click “ **Yes** ” to finish.



The deleted group's users will be moved to the unassigned user list simultaneously.

## < 10.6 > Visitor

### Add Visitor

1. Go to “ **Visitor** ” tab
2. Click “ **Add** ”
3. Input all the fields in the following window
4. Tick the cabinet( s ) to allow visitor to access by smartcard
5. Tick “ **Visitor Card Activate** ” to activate the smartcard to access the cabinets under a specific time period
6. Click “ **Save** ” to finish Visitor addition

**Visitor**

First Name: Peter  
Last Name: Chan  
Phone: (852) 2901 3322  
Mobile: (852) 6754 3112  
Email: peter.chan@abc.com  
Company: ABC Company  
Address 1: Rm 2011, 20/F  
Address 2: Tai Yau Building, Wan Chai, HK  
Visitor Card No.: 10809344  
Effective Date: 2013-08-16  
Time: 14:00  
Expiry Date: 2013-08-16  
Time: 18:00  
☒ Visitor Card Activate

Photo upload:  Browse...

Add cabinet

- walker
- XYZ Zone B1
- XYZ Company Zone A3
- ABC Company Zone A1
- ABC Company Zone A2
  - 13816811
  - Rack024
  - Rack025

Save Cancel

### Edit Visitor

1. Select the visitor you want to edit
2. Click “ **Edit** ” in “ **Visitor Details** ” window
3. Edit the field( s ) you want
4. Click “ **Save** ” & Click “ **Yes** ” to finish

### Delete Visitor

1. Select the visitor you want to delete
2. Click “ **Delete** ” in “ **Visitor Details** ” window & Click “ **Yes** ” to finish

## System Setup

In System Setup tab, it provides the following settings which apply to the whole system.

- ( 1 ) Backup & Restore
- ( 2 ) Alarm Setting, Mail Server Setting, Audio Visual Alarm
- ( 3 ) Temperature unit
- ( 4 ) Door opening overdue setting
- ( 5 ) Time Rule

The screenshot displays the 'System Setup' web interface with three main configuration panels on the left and a large table on the right.

**Backup:**

- Backup file path: C:\KASMG\_L2\data\_backup\
- Keep the log for this number of days: 14
- All backup process will be stopped if the backup drive reach this threshold: 90
- Resume File: [Upload]

**Alarm Setting:**

- ☒ Email alert
- ☐ Audio alert

**Temperature unit:**

- ☒ Celsius(°C)
- ☐ Fahrenheit(°F)

**Handle Setting:**

- Door Overdue: 30 (mins)

**Time Rule:**

- [Setup]

**Mail Server Setting:**

- smtp host: smtp.gmail.com
- smtp port: 587
- ☒ smtp auth
- smtp username: infraco@hughes.com
- smtp password: [REDACTED]
- smtp secure: [Dropdown: TLS]
- Default mail from address: infraco@hughes.com
- Default mail from user name: X-ISM Email ALARM

**Audio Visual Alarm:**

Sensor Event	Buzzer	Beeper	Alarm out
S1 (T / TH 1) temp / humid. alarm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
S2 (T / TH 2) temp / humid. alarm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
S3 Smoke alarm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
S4 Shock alarm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
S5 (Water L) alarm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
S6 (Water C) alarm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

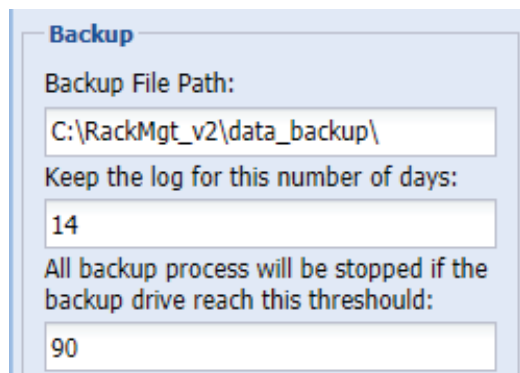
[Save]

## < 11.1 > Backup & Restore

### Backup

You can set

- the backup path of device configuration & system setting
- the time period the system & event log kept in the system
- the drive space used in term of percentage before the backup process STOP



The screenshot shows a 'Backup' configuration window. It has three input fields: 'Backup File Path' with the value 'C:\RackMgt\_v2\data\_backup\' (highlighted with a red box), 'Keep the log for this number of days:' with the value '14' (highlighted with a red box), and 'All backup process will be stopped if the backup drive reach this threshold:' with the value '90' (highlighted with a red box).



Those event log over the defined time period will be saved as CSV format which located at “ **Backup File Path** ” *Vogbackdist* folder

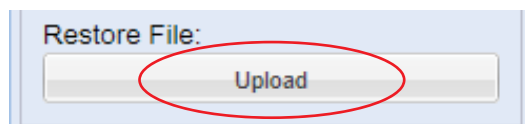
The system setup backup file will be saved in the “ **Backup File Path** ” *lsysbackdist* folder

### Restore



Restore MUST BE done at the management PC side NOT client side

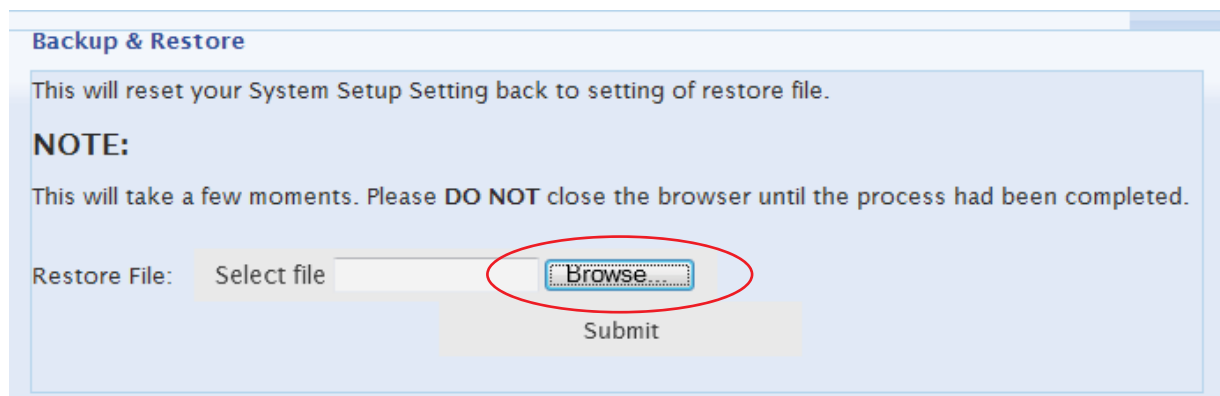
1. Click “ **Upload** ” button



The screenshot shows the 'Restore File:' section of the interface. It contains a text input field and a button labeled 'Upload'. The 'Upload' button is circled with a red oval.



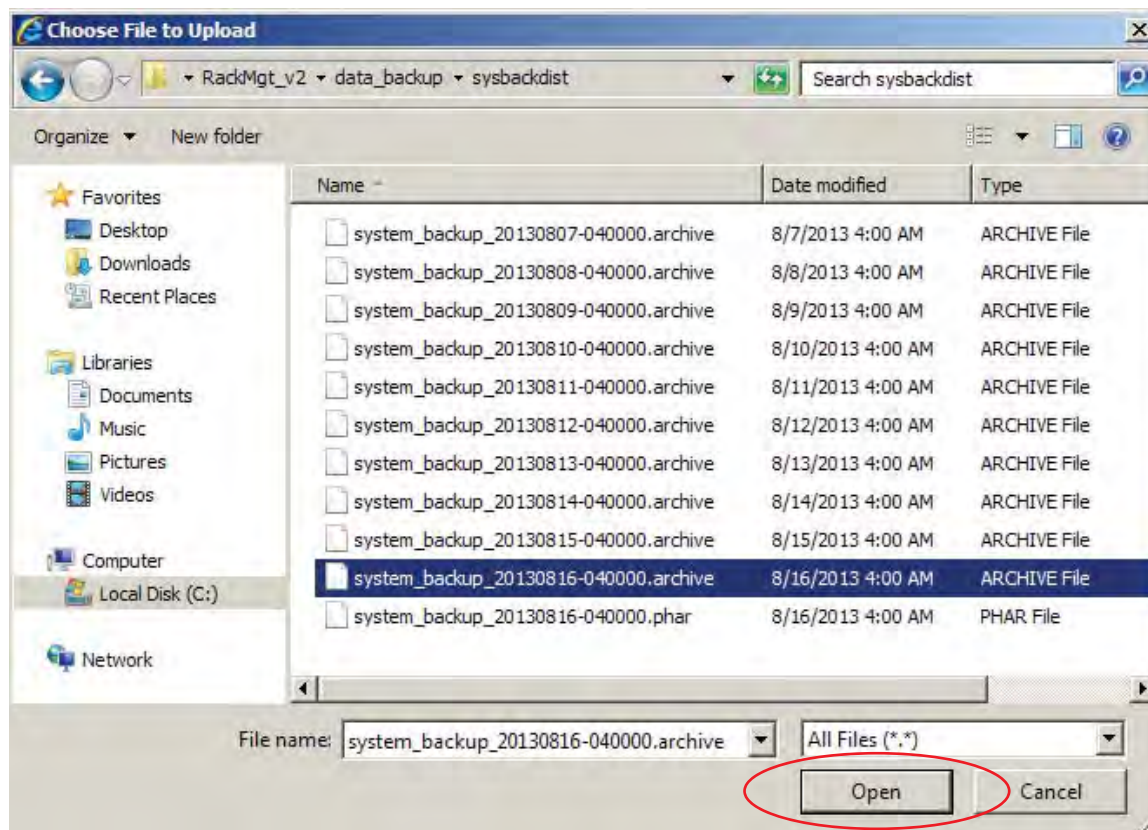
2. Click “ **Browse** ” to select the file you want to restore



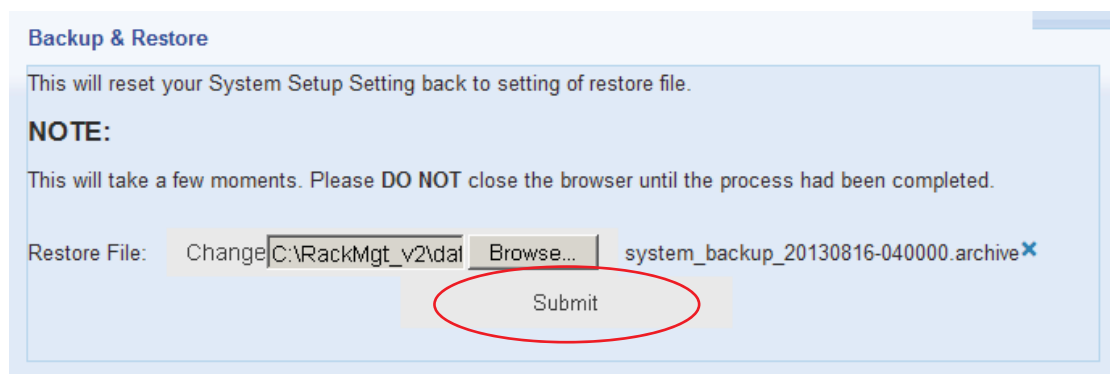
The screenshot shows the 'Backup & Restore' window. It contains a message: 'This will reset your System Setup Setting back to setting of restore file.' Below this is a 'NOTE:' section with the text: 'This will take a few moments. Please DO NOT close the browser until the process had been completed.' At the bottom, there is a 'Restore File:' section with a 'Select file' text input field and a 'Browse' button. The 'Browse' button is circled with a red oval. Below the 'Browse' button is a 'Submit' button.



3. Select the file & Click “Open”



4. Click “Submit” to start to restore. When restore is completed, “Restore succeeded” will be displayed in the web page



..... Complete



After system restore, users need to activate the software again if the backup file is from a different management PC

< 11.2 > Alarm Setting / Mail Server Setting / Audio visual Alarm

Alarm Setting

System will send out device alarm email to user if enable “ Email Alert “

Alarm Setting

☒ Email alert

☐ Audio alert

Default : Untick

Mail Server Setting

It is used to setup the sender account to send out the device alarm email to the user

Mail Server Setting

smtp host:  
smtp.gmail.com

smtp port:  
587

☒ smtp auth

smtp username:  
infrasolutionx@gmail.com

smtp password:  
●●●●●●●●

smtp secure:  
tls

Default mail from address:  
infrasolutionx@gmail.com

Default mail from user name:  
X-ISM Email ALARM

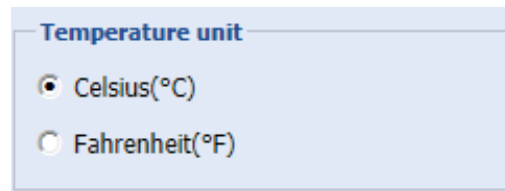
Audio Visual Alarm

Enable or disable “ Buzzer “ , “ Beacon “ & “ Alarm out “ .  
By this setting, all sensors under alarm status WILL or WILL NOT trigger audio visual alarm accordingly.

Audio Visual Alarm			
Sensor Event	Buzzer	Beacon	Alarm out
S1 (T / TH 1) temp. / humid. alarm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
S2 (T / TH 2) temp. / humid. alarm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
S3 Smoke alarm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
S4 Shock alarm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
S5 (Water1) alarm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
S6 (Water2) alarm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## < 11.3 > Temperature unit

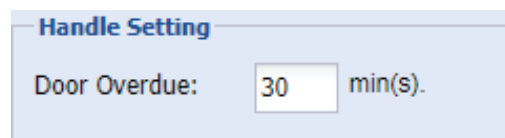
Select the temperature unit °C / °F displaying in the system

A light blue rectangular box with a title bar at the top that says "Temperature unit". Inside the box, there are two radio button options. The first option is "Celsius(°C)" and it is selected, indicated by a small black dot inside the radio button. The second option is "Fahrenheit(°F)" and it is not selected, indicated by an empty radio button.

Default : Celsius

## < 11.4 > Door Opening Overdue Setting

Set the door opening overdue time after the cabinet door is open.  
When time overdue, user can view overdue timing with mins in cabinet icon.

A light blue rectangular box with a title bar at the top that says "Handle Setting". Inside the box, there is a label "Door Overdue:" followed by a text input field containing the number "30". To the right of the input field is the text "min(s)." in a smaller font.

Default : 2 mins  
( Min. 1 min / max. 9999 mins ).

## < 11.5 > Time Rule

- Time rule is designed for security. It tries to restrict the users with a time period to access the system and cabinet.
- In this section, you can set time rules up to 32.
- Afterward, all time rules will be shown in user group for their selection.
- Only one time rule can be assigned to one user group.

1. Click “ **Setup** ” under time rule section
2. Select time rule no. ( 1 - 32 )
3. Edit the “ **Time Rule Name** ”
4. Tick the time slot to set date-time period & weekday for the time rule
5. Click “ **Save** ” to finish
6. Repeat step 2 to 5 for other time rules

The screenshot shows the 'System Setup - Time Rule' window. At the top, there is a 'Time rule:' dropdown set to 'Time Rule 06' and a 'Time Rule Name' field containing 'Time Rule 06', which is circled in red. To the right of the name field are 'Select All' and 'Clear All' buttons. Below this is a table with columns for 'Time Slot' and days of the week (Sunday through Saturday). The 'Time Slot' column lists intervals from 00:00 - 01:00 down to 15:00 - 16:00. Each row has checkboxes for each day. At the bottom of the window, a 'Save' button is circled in red.

Time Slot	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
00:00 - 01:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
00:00 - 00:15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
00:15 - 00:30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
00:30 - 00:45	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
00:45 - 01:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
01:00 - 02:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
02:00 - 03:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
03:00 - 04:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
04:00 - 05:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
05:00 - 06:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
06:00 - 07:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
07:00 - 08:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
08:00 - 09:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
09:00 - 10:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10:00 - 11:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11:00 - 12:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12:00 - 13:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13:00 - 14:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14:00 - 15:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15:00 - 16:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Operation & Usage

### < 12.1 > Individual Cabinet Devices Enable & Disable

Enter **CA – Edit Mode** to enable / disable individual cabinet sensor & device :

- TH Sensors / Sensors / PDU / Fan

1. Double click the cabinet icon & show the window below

XYZ Zone BA - Rack 018

**Cabinet:**  
No.: 0018  
Title: Rack 018  
IP Address: 192.168.1.18  
Alarm:  
Audio Alarm: Disable  
Email Alarm: Enable

**T / H:**  
Temp1 / Alarm: DISABLED  
Humid1 / Alarm: DISABLED  
Temp2 / Alarm: DISABLED  
Humid2 / Alarm: DISABLED  
Chart  
Edit

**Fan:**  
Fan 1:  
Name:  
Model:  
Position:  
Status:  
CFM:  
Temp/Alarm:  
Disable  
Fan 2:  
Name:  
Model:  
Position:  
Status:  
CFM:  
Temp/Alarm:  
Disable

**PDU:**  
PDU 1:  
Name:  
Model:  
Location:  
Status:  
Amp:  
KWH:  
TH1:  
TH2:  
Disable  
PDU 2:  
Name:  
Model:  
Location:  
Status:  
Amp:  
KWH:  
TH1:  
TH2:  
Disable  
PDU 3:  
Name:  
Model:  
Location:  
Status:  
Amp:  
KWH:

**Door:**  
Front:  
Status: Handle locked remotely, door close.  
Last user: kenny  
Opened: 2013-08-19 11:24:38  
Closed: 2013-08-19 11:25:05  
Duration: 00day 00h 00m 07s.  
Remote Open  
Rear:  
Status: Handle locked remotely, door close.  
Last user: kenny  
Opened: 2013-08-19 11:24:57  
Closed: 2013-08-19 11:25:04  
Duration: 00day 00h 00m 07s.

**Sensors:**  
Water 1: DISABLED  
Water 2: DISABLED  
Smoke/ Shock 1: DISABLED  
Smoke/ Shock 2: DISABLED  
LED1: DISABLED  
LED2: DISABLED  
Beacon: DISABLED  
Edit

Save

2. Click “ **Edit** ” in T / H pane
3. Disable if no TH sensors connection ( default : disable )  
OR  
Enable if TH sensor connected and set alarm level
4. Click “ **Apply** ” to finish

**T / H**

Temp 1: Enable  
Alarm(°C): 99.9  
Humidity 1: Enable  
Alarm(%): 99  
Temp 2: Disable  
Alarm(°C): DISABLED  
Humidity 2: Disable  
Alarm(%): DISABLED  
Chart  
View Apply

## < 12.1 > Individual Cabinet Devices Enable & Disable


5. Click “ **Edit** ” in Sensors pane
6. Disable if no sensors connection ( default : disable )  
OR  
Enable if sensor connected
7. Click “ **Apply** ” to finish



8. In PDU pane, disable if no PDU connection ( default : disable )  
OR  
Enable if PDU connected



9. In Fan pane, disable if no Fan connection ( default : disable )  
OR  
Enable if Fan connected
10. Click “ **Save** ” to finish the PDU & Fan section

 When enable or disable PDU & fan,  
the InfraBox will reboot to make the changes effective



## < 12.2 > Individual Cabinet Door Open by Remote

In Door pane, you can proceed

- door open by remote
- view the record of last door open & close record

Door

Front:

Status: Handle locked remotely, door close.

Last user: kenny

Opened: 2013-08-19 14:45:31

Closed: 2013-08-19 14:46:13

Duration: 00day 00h 00m 42s.

Remote Open

Rear:

Status: Unauthorized open

Last user: Anonymous User

Opened: 2013-08-19 14:47:07

Closed: 2013-08-19 14:47:34

Duration: 00day 00h 00m 27s.

Remote Open

## < 12.3 > Individual Cabinet PDU Configuration & Control

In PDU pane, Click “ **PDU Details** ” to go to PDU Details page

**PDU**

PDU 1-

Name: Rack 018 WSi01

Model: V8UK/4C13/2C19-32A-WSi

Location: Rack 018 WSi

Status: Connected

Amp: 0.6

KWh: 10.33

TH1: --- °C / 35.0 °C , --- % / 65 %

TH2: --- °C / 35.0 °C , --- % / 65 %

Enable ☒ **PDU Details** TH Status

In “ **PDU Details** ”, you can

- Change “ **Name** ” & “ **Location** ” of PDU
- Change “ **Alarm amp.** ”, “ **R. alert amp.** ” & “ **Low alert amp.** ” of PDU's circuits
- Click “ **Save** ” to finish
- Click “ **Reset** ” to reset peak amp. & kWh of PDU's circuits
- Click “ **On / Off** ” to switch on / off PDU's outlet ( Switched PDU models only )

XYZ Zone 03 - Rack 018 - PDU Details

PDU Level: 03 V24C13-32A-WSi PDU kWh: 0.00

Status: Connected PDU load amp: 0.0

Name: Rack 018 23C12WSi Power Factor: 0.4

Location: Rack 018 23C12WSi App Power (kVA): 0.03

**Circuit A**

Max. amp: 16.0 Load amp: 0.0

Alarm amp: 13.0 R. alert amp: 0.0 Low alert amp: 0.0

Peak amp: 0.0 2012-08-13 11:12:29

kWh: 0.0 2012-08-07 14:02:00

Reset

**Circuit B**

Max. amp: 16.0 Load amp: 0.0

Alarm amp: 13.0 R. alert amp: 0.0 Low alert amp: 0.0

Peak amp: 0.1 2012-08-12 18:22:00

kWh: 0.0 2012-08-07 14:04:02

Reset

**Circuit A Outlets**

Outlet #	Name	Amp/Load/Alarm/R. alert/Low al.	kWh	Status	Switch
01	outlet_name_01	0.0/10.0/0.0/0.0	0.0	On	Off
02	outlet_name_02	0.0/10.0/0.0/0.0	0.0	Off	On
03	outlet_name_03	0.0/10.0/0.0/0.0	0.0	On	Off
04	outlet_name_04	0.0/10.0/0.0/0.0	0.0	On	Off
05	outlet_name_05	0.0/10.0/0.0/0.0	0.0	Off	On
06	outlet_name_06	0.0/10.0/0.0/0.0	0.0	On	Off
07	outlet_name_07	0.0/10.0/0.0/0.0	0.0	On	Off
08	outlet_name_08	0.0/10.0/0.0/0.0	0.0	Off	On
09	outlet_name_09	0.0/10.0/0.0/0.0	0.0	On	Off
10	outlet_name_10	0.0/10.0/0.0/0.0	0.0	On	Off

**Circuit B Outlets**

Outlet #	Name	Amp/Load/Alarm/R. alert/Low al.	kWh	Status	Switch
13	outlet_name_13	0.0/5.0/0.0/0.0	0.0	On	Off
14	outlet_name_14	0.0/5.0/0.0/0.0	0.0	On	Off
15	outlet_name_15	0.0/5.0/0.0/0.0	0.0	On	Off
16	outlet_name_16	0.0/5.0/0.0/0.0	0.0	On	Off
17	outlet_name_17	0.1/5.0/0.0/0.0	0.02	On	Off
18	outlet_name_18	0.1/5.0/0.0/0.0	0.02	On	Off
19	outlet_name_19	0.1/5.0/0.0/0.0	0.0	On	Off
20	outlet_name_20	0.1/5.0/0.0/0.0	0.04	On	Off
21	outlet_name_21	0.0/5.0/0.0/0.0	0.0	On	Off
22	outlet_name_22	0.0/5.0/0.0/0.0	0.0	On	Off

Save

In “ **PDU Details** ”, you can Click outlet icon to go to Outlet Setting page

In “ **Outlet Setting** ”, you can

- Change the “ **Name** ” of PDU outlet
- Change “ **Power up sequence delay** ” of PDU outlet ( Switched PDU models only )
- Change “ **Alarm amp.** ”, “ **R. alert amp.** ” & “ **Low alert amp.** ” of PDU outlet ( Outlet level measurement PDU models only )
- Click “ **Save** ” to finish
- Click “ **Reset** ” to reset peak amp. & kWh of PDU outlet ( Outlet kWh Switched PDU only )

Demo - Cabinet 014 - PDU Details - Outlet Setting

PDU level: 01 V16C13/4C19-32A-WSi  
 Status: Connected  
 Name: WSi Switched  
 Location: Cabinet 014

Outlet: 01  
 Outlet Name: outletname01  
 Outlet Status: On  
 Power up sequence delay: 1 Min. 1, Max. 10 Seconds  
 Load amp: 0.0  
 Alarm amp: 5.0  
 R.alert amp: 0.0  
 Low alert amp: 0.0  
 Peak amp: 8.5 2013-08-13 17:52:40  
 kWh: 0.59 2013-08-07 16:45:58

Reset  
 Reset  
 Save

To configure the TH sensors of PDU, you can Click “ **View** ” button in “ **TH Status** ” to go the TH Setting page

PDU			TH1			TH2		
Level	Name	Setting	Location	Temp / Alarm (°C)	Humid / Alarm (%)	Location	Temp / Alarm (°C)	Humid / Alarm (%)
01	Rack 018 WSi01	View	THSen_#1	— / 35.0	— / 65	THSen_#2	— / 35.0	— / 65
02	Rack 018 WSi 02	View	THSensor_#1_loc	— / 35.0	— / 65	THSensor_#2_loc	— / 35.0	— / 65
03	Rack 18 23C13WSi	View	Rack 18 PDU 3	24.6 / 99.9	54 / 99	THSensor_#2_loc	— / 35.0	— / 65
04	Rack 18a_G13WSi	View	Rack 18 PDU 4	— / 35.0	— / 65	THSensor_#2_loc	— / 35.0	— / 65

In “ **TH Setting** ”, you can

- Activate / Deactivate TH sensors of PDU
- Change “ **Location** ”, “ **Alarm Setting** ” of TH sensors
- Click “ **Save** ” to finish

XYZ Zone 01 - Rack 018 - PDU Details - TH Status - TH Setting

PDU Level: 01 V8UK/4C13/2C19-32A-WSi  
 Status: Connected  
 Name: Rack 018 WSi01  
 Location: Rack 018 WSi

TH 1  
 Status: ☒ Activate ☐ Deactivate  
 Location: THSen\_#1  
 Alarm Setting: Temp. (°C): 35.0 Humid. (%): 65  
 Reading: —

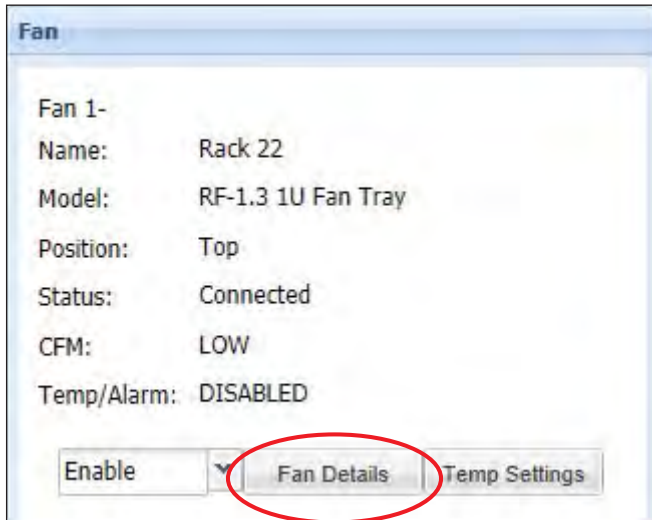
TH 2  
 Status: ☒ Activate ☐ Deactivate  
 Location: THSen\_#2  
 Alarm Setting: Temp. (°C): 35.0 Humid. (%): 65  
 Reading: —

Save

DO NOT activate T or TH sensor if no sensor installed.  
 When install T or TH sensor, please tick activate. Otherwise, no readings display.

## < 12.4 > Individual Cabinet Fan Unit Configuration & Control

In Fan pane, Double Click “ **Fan Details** ” to go to Fan Details page



**Fan**

Fan 1-

Name: Rack 22

Model: RF-1.3 1U Fan Tray

Position: Top

Status: Connected

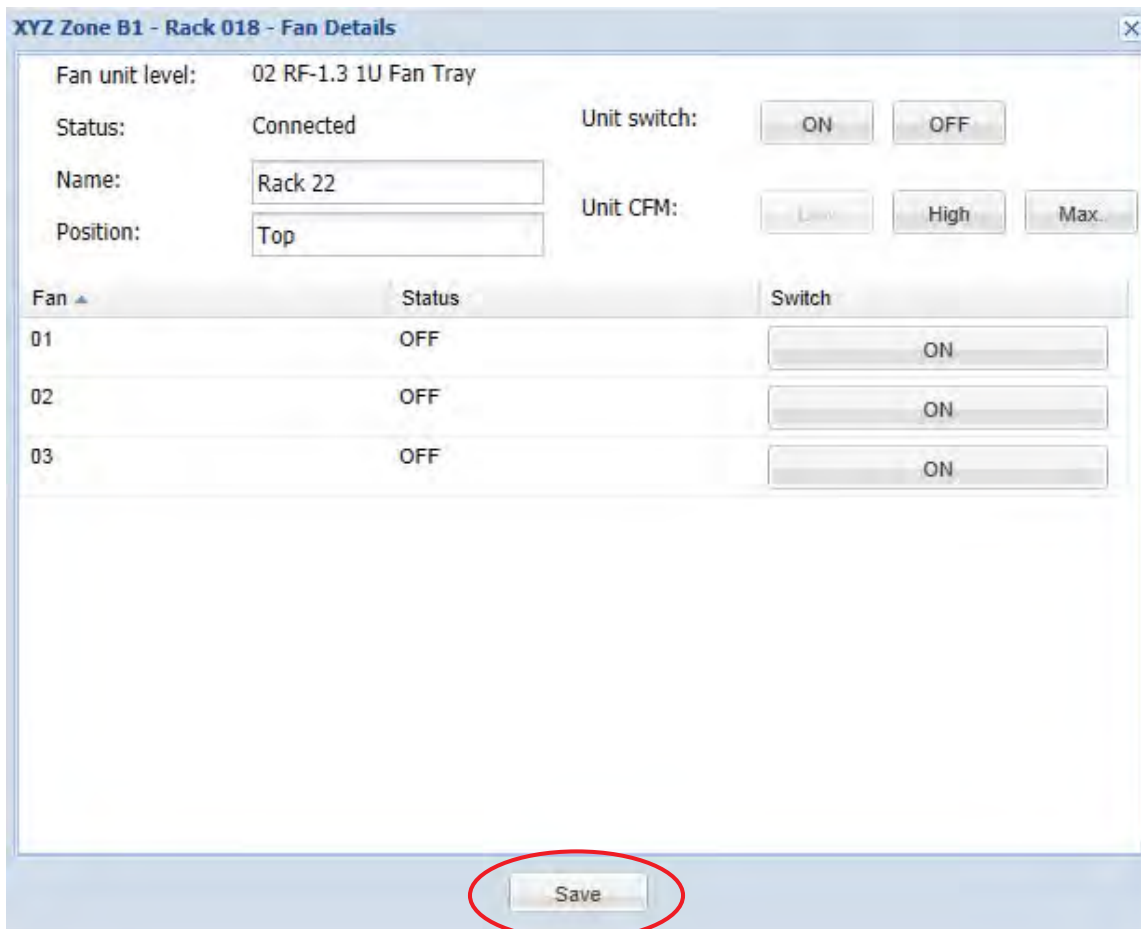
CFM: LOW

Temp/Alarm: DISABLED

Enable ☒ Fan Details Temp Settings

In “ **Fan Details** ” , you can

- Change “ **Name** ” & “ **Position** ” of Fan unit
- Change “ **Unit CFM** ”
- Click “ **Save** ” to finish
- Switch ON / OFF Fan unit



**XYZ Zone B1 - Rack 018 - Fan Details**

Fan unit level: 02 RF-1.3 1U Fan Tray

Status: Connected Unit switch: ON OFF

Name: Rack 22 Unit CFM: Low High Max

Position: Top

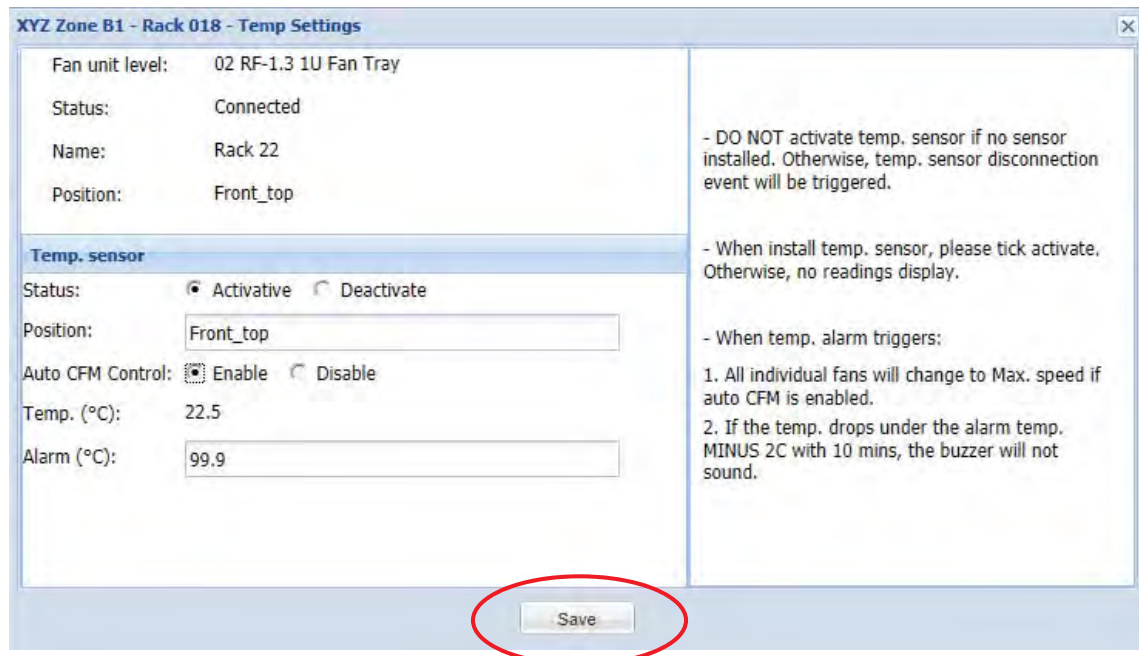
Fan	Status	Switch
01	OFF	ON
02	OFF	ON
03	OFF	ON

Save

In Fan pane, Double Click “ **Temp Settings** ” to go to Temp Settings page.

You can

- Activate / Deactivate Temp. sensor
- Change “ Position ” of Temp. sensor
- Enable / Disable Auto CFM Control
- Change the “ **Alarm** ” of Temp. sensor
- Click “ **Save** ” to finish



## < 12.5 > Console Message

In the bottom side of the web page, you can view the console message pane.

All action related to the cabinet doors will be shown in this area.

Console Message		
Event	IP address	Description
2013-08-21 15:53:04 +08:00	138.168.1.18	In Cabinet 016(138.168.1.18), Front Handle was unlocked remotely by richard

To collapse and hide the console message pane, Click



To expand and display the console message pane , Click



## < 12.6 > PDU Outlet Grouping

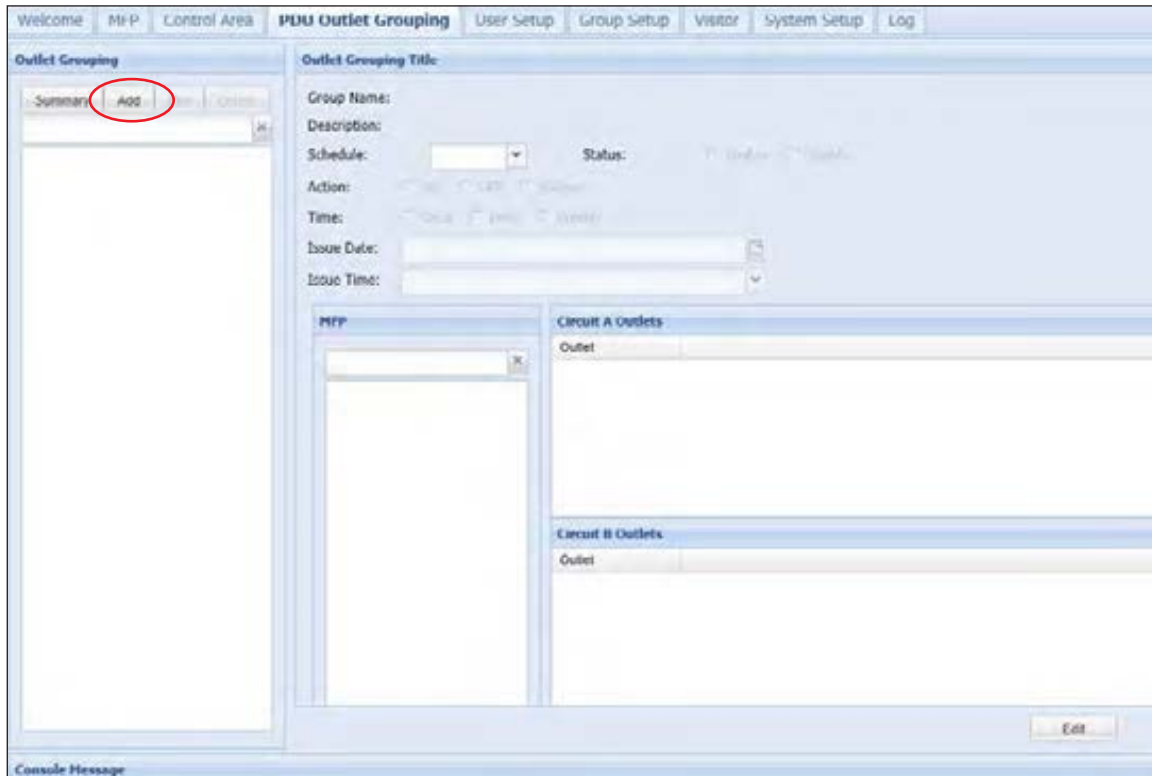
PDU Outlet Grouping is a feature which you can assign different PDUs for scheduled outlet ON / OFF / Reboot. Each PDU CAN ONLY BE ASSIGNED to one PDU Outlet Grouping.

In each PDU Outlet Grouping, there are 6 outlet ON / OFF / Reboot schedules on Once, Daily & Weekly basis

To add a PDU outlet grouping, please follow the steps below:

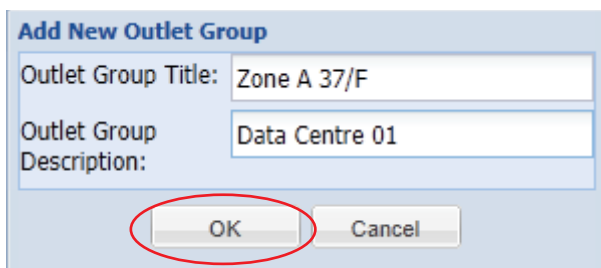
1. Click “ **PDU Outlet Grouping** ” Tab

2. Click “ **Add** ”

The screenshot shows a software interface with a top navigation bar containing tabs: Welcome, MFP, Control Area, PDU Outlet Grouping (selected), User Setup, Group Setup, Visitor, System Setup, and Log. The main window is titled 'Outlet Grouping' and has a left sidebar with 'Summary' and 'Add' (circled in red) buttons. The main area contains a form for 'Outlet Grouping Title' with fields for Group Name, Description, Schedule (a dropdown), Status, Action, Time, Issue Date, and Issue Time. Below the form are three panels: 'MFP', 'Circuit A Outlets', and 'Circuit B Outlets', each with an 'Outlet' label and a list area. An 'Edit' button is at the bottom right.

3. Input “ **Outlet Group Title** ” & “ **Outlet Group Description** ”

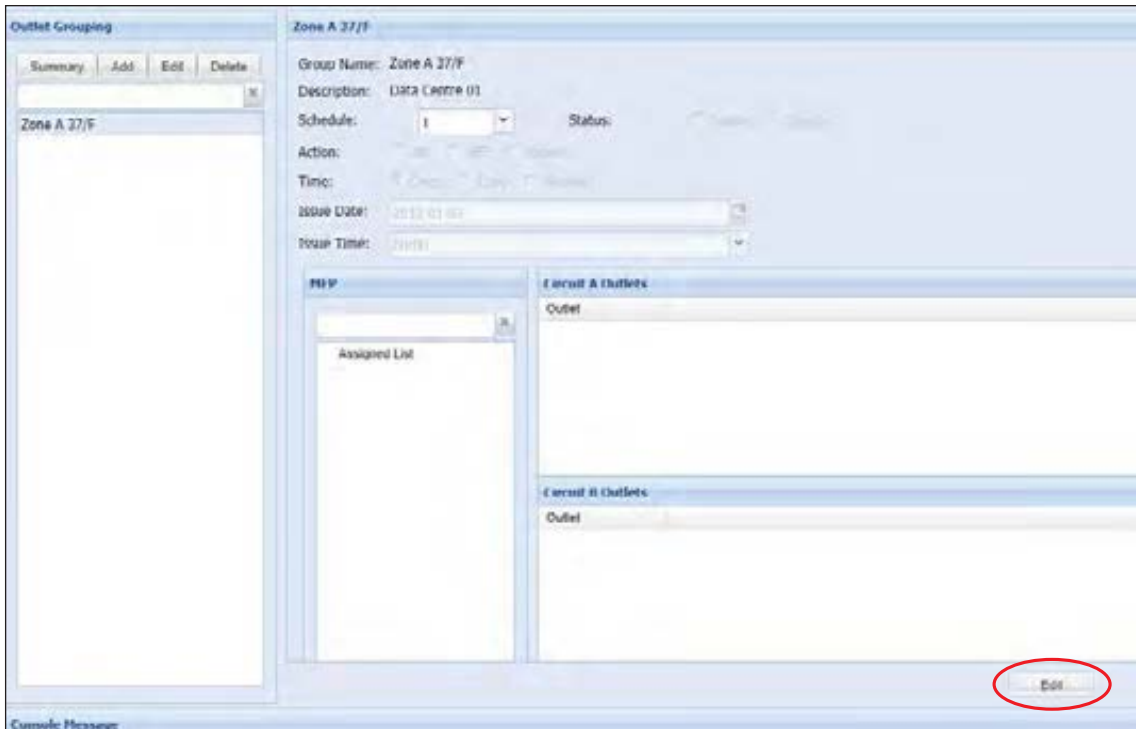
4. Click “ **OK** ” in “ **Add New Outlet Group** ” window to finish

The screenshot shows a dialog box titled 'Add New Outlet Group'. It has two text input fields: 'Outlet Group Title' with the value 'Zone A 37/F' and 'Outlet Group Description' with the value 'Data Centre 01'. At the bottom, there are two buttons: 'OK' (circled in red) and 'Cancel'.

To enable an outlet schedule, please follow the steps below :

1. Select one of the outlet group

2. Click “ **Edit** ”



3. Select schedule 1
4. Select “ **Enable** ”
5. Select “ **Action** ” ( ON / OFF / Reboot )
6. Select “ **Time** ” ( Once / Daily / Weekly )
7. Select “ **Issue Date** ” & “ **Issue Time** ”

Group Name:

Description:

Schedule:  Status: ☒ Enable ☐ Disable

Action: ☐ ON ☒ OFF ☐ Reboot

Time: ☒ Once ☐ Daily ☐ Weekly

Issue Date:

Issue Time:

once

Group Name:

Description:

Schedule:  Status: ☒ Enable ☐ Disable

Action: ☐ ON ☒ OFF ☐ Reboot

Time: ☐ Once ☒ Daily ☐ Weekly

Issue Time:

Daily

Group Name:

Description:

Schedule:  Status: ☒ Enable ☐ Disable

Action: ☐ ON ☒ OFF ☐ Reboot

Time: ☐ Once ☐ Daily ☒ Weekly

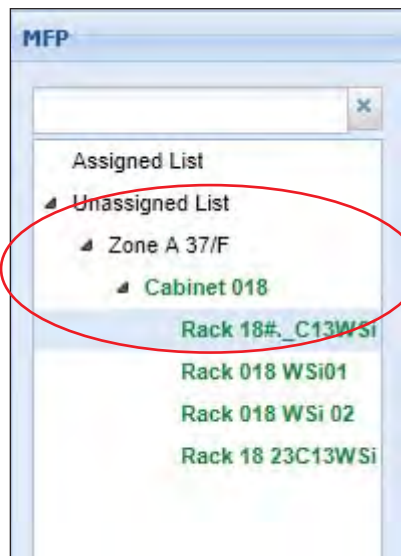
Issue Weekday:

Issue Time:

Weekly

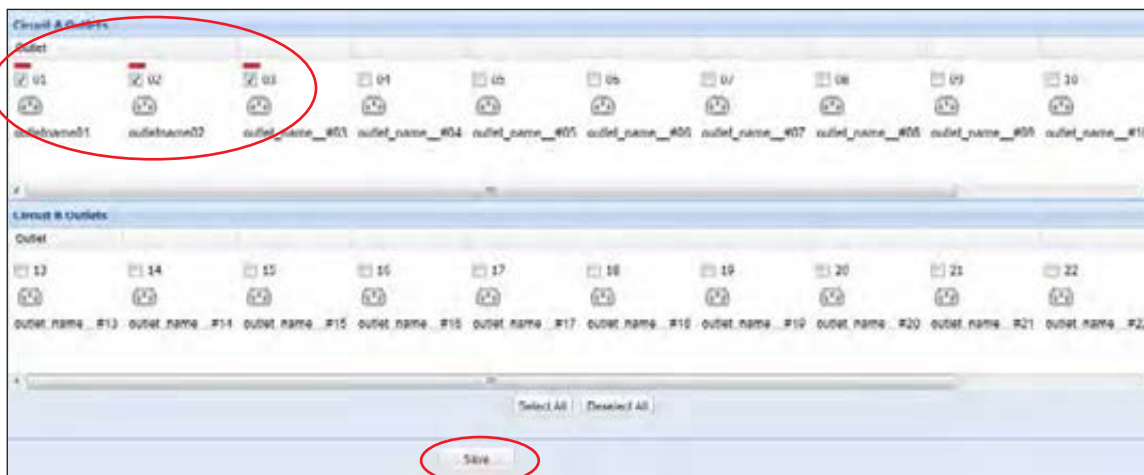
## < 12.6 > PDU Outlet Grouping

8. Select the PDU you want to add to this schedule by Clicking “ **Unassigned List** ” > “ **MFP** ” > “ **Cabinet** ” > “ **PDU** ” in MFP pane



If the PDU already assigned to another outlet schedule in the same outlet grouping, you can select the PDU in the “ **Assigned List** ”

9. Tick the outlet of the selected PDU for the schedule
10. Repeat step 9 for outlet ( s ) of other PDU ( s ) you want to add to the same schedule
11. Click “ **Save** ” to finish



12. Repeat Step 2 to 11 for other schedules if necessary



If the outlet schedule is “ **Once** ”, the schedule will be disabled automatically once the action is completed. To cancel the outlet schedule, select “ **Disable** ” of the selected schedule & Click “ **Save** ” to finish

## < 12.7 > Device & System Event Log

In “**Log**” tab, it provides device & system events for you to view, print or export in CSV format.

Device event log includes:

- Cabinet
- Door Access
- Fan
- PDU
- Sensors
- T / H Sensor

System event log includes:

- Console
- Control Area
- MFP
- Outlet Grouping
- System Setup
- User
- User Activity
- User Group
- Visitor

You can view all the log records or the log records in a specific time period.

You can print the event log records by Clicking “**Print**”.

You can export the event log records in CSV format by Clicking “**CSV**”.

The screenshot shows the 'Device & System Event Log' interface. On the left, a sidebar lists 'Log' with sub-items: 'Device Event Log' (Cabinet, Door Access, Fan, PDU, Sensors, T/H Sensor) and 'System Event Log' (Console, Control Area, MFP, Outlet Grouping, System Setup, User, User Activity, User Group, Visitor). The main panel is titled 'Door Access Log' and features a search bar with fields for 'Date', 'AS', 'Specify Date', 'Start Date & Time', 'End Date & Time', and a 'Search' button. Below the search bar are 'Print' and 'CSV' buttons. The main area displays a table of events with two columns: 'Event' and 'Description'. The 'Event' column lists dates and times, while the 'Description' column provides details about door access events, such as 'Rear Handle was locked by Auth card by User: kenny/10000000' and 'Front Handle was unlocked by Auth card by User: kenny/10000000'. The table is paginated, showing 'Page 1 of 10' and 'Displaying 1 - 20 of 100'.

## < 13.1 > SNMP

### ( I ). Accessing MIB Files

Use the World Wide Web (WWW) to download the SNMP MIB file at this URL:

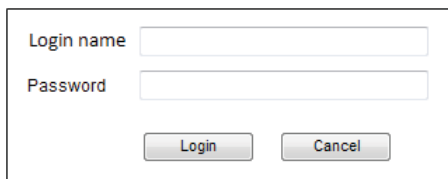
<http://www.austin-hughes.com/support/utilities/infrasolutionX/X-ISM-MIB.mib>

### ( II ). Enabling SNMP Support

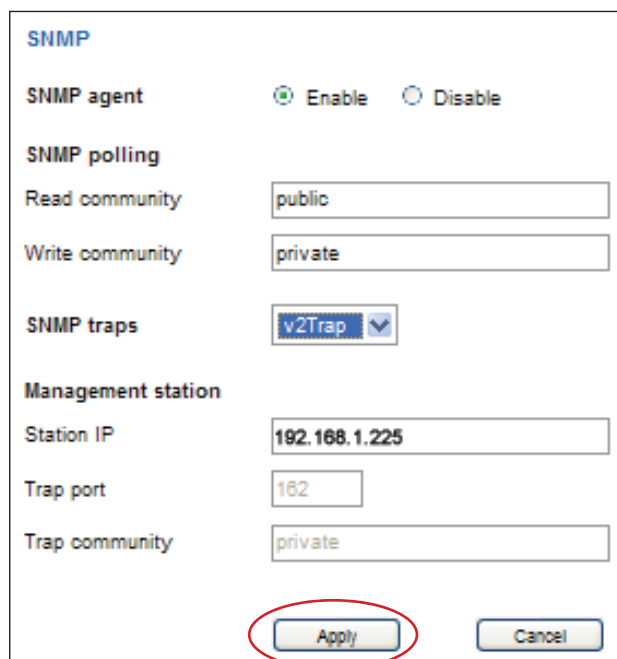
The following procedure summarizes how to enable the InfraBox for SNMP support.

1. Connect the InfraBox to a computer.
2. Open the Internet Explorer ( I.E. ) version 8.0 or above
3. Enter the configured IP address of InfraBox into the I.E. address bar.  
Default IP address is “ **192.168.0.20** ”


4. Enter “ **Login name** ” & “ **Password** ”.  
Default login name & password are “ **00000000** ”

A login dialog box with two text input fields. The first field is labeled "Login name" and the second is labeled "Password". Below the fields are two buttons: "Login" and "Cancel".

5. Select **SNMP** from the left navigation pane
6. The **SNMP** Settings window appears as below:

The SNMP Settings window. At the top, it says "SNMP" in blue. Below that, "SNMP agent" has two radio buttons: "Enable" (selected) and "Disable". Under "SNMP polling", there are two text boxes: "Read community" with "public" and "Write community" with "private". Under "SNMP traps", there is a dropdown menu showing "v2Trap". Under "Management station", there are three text boxes: "Station IP" with "192.168.1.225", "Trap port" with "162", and "Trap community" with "private". At the bottom, there are two buttons: "Apply" (circled in red) and "Cancel".

7. Click “ **Enable** ” in “ **SNMP Agent** ” to start the SNMP agent service
8. Input “ **Read Community** “. Default is “ **public** ”
9. Input “ **Write Community** “. Default is “ **private** ”
10. Select “ **disabled** ” or “ **V2Trap** ” in “ **SNMP Traps** ”

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

11. Click “ **Apply** ” to finish the SNMP settings

## < 14.1 > FAQ & Troubleshooting

### InfraSolution X Manager – X-ISM

#### 1. What is InfraSolution X Manager – X-ISM?

InfraSolution X Manager X-ISM is a LICENSED cabinet management software to monitor up to 3000 cabinets remotely.

Each InfraBox connects a pair of smartcard handles to secure the cabinet access control.

Each InfraBox can also connect a variety of sensors to provide an environmental monitoring solution.

To enhance the functionality, up to 1920 x kWh PDU / 960 x Fan Unit can be monitored through InfraSolution X Manager as well.

Up to 100 concurrent users can access the management software remotely to achieve the demand of multi-user / multi-tasking in nowadays' time sharing data center operation.

#### 2. What OS platform does X-ISM support?

MS Windows 2008 Server Standard edition with SP2 ( 32 & 64 bit, English edition only )

MS Windows 2008 Server R2 Standard edition with SP1 ( English edition only )

#### 3. What is the login name & password of default administrative account?

Default login name “ admin “ & password “ admin “

#### 4. How many cabinets & remote clients does X-ISM support?

3,000 cabinets and 100 remote clients ( max. )

#### 5. How can I receive the alarm email?

- Enable email alert in System Setup
- Configure mail server setting in System Setup
- Enable email alert in User Setup
- Enable email alarm in Cabinet IP configuration

#### 6. After close the web browser, I cannot login the software UI again using the same user account immediately?

Ensure clicking the “ logout “ button to exit. If clicking the “ close “ button, you need to wait around 1 min before you can login again.

### InfraBox

#### 1. Does the InfraBox has dual power input?

Yes ( MUST order before delivery )

#### 2. How many PDUs does InfraBox support?

4 PDUs max. ( for InfraBox X-2000 only )

#### 3. How many fan units does InfraBox support?

2 fan units max. ( for InfraBox X-2000 only )

## < 14.1 > FAQ & Troubleshooting

### Sensors

**1. How accurate is the Temp. & Humid sensor?**

It is accurate to +/- 0.5 C ( typical ) and +/- 4.5% RH ( typical )

**2. How accurate is the Temp. sensor?**

It is accurate to +/- 1.0 C ( typical )

**3. What is sensitivity of smoke sensor?**

0.15 ~ 0.3 dB/m

**4. What is the detection radius of shock sensor?**

3.5m

**5. What is the lumen of the LED light bar?**

250

**6. How long is the LED light bar ON after the handle lock is released?**

within 10 seconds

### Others

**1. Can I use a notebook computer as a management PC?**

Yes, but ensure the power adapter is plugged in & power ON.

**2. Where can I find the Catalogue / User manual / Model list of InfraBox?**

Please visit [www.austin-hughes.com](http://www.austin-hughes.com)

**3. How can I get a further support?**

Please send an email to [support@austin-hughes.com](mailto:support@austin-hughes.com) or [sales@austin-hughes.com](mailto:sales@austin-hughes.com)

## InfraBox Disconnection

### 1. GUI shows **a certain InfraBox in a DAISY CHAIN / MIXED network** disconnected

#### Step 1 - InfraBox power off?

Check the InfraBox is power ON or not

#### Step 2 - Can ping the IP address?

- i. Make sure the IP address can be found and configured using the “ **IP setup utilities for InfraBox** “
- ii. Make sure the IP address of the InfraBox is the same as the IP address of the cabinet configuration in the InfraSolution X Manager GUI

### 2. GUI shows **the whole daisy chain group of InfraBoxes in a DAISY CHAIN / MIXED network** disconnected

#### Step 1 - Cat. 5 / 6 cable disconnected, loose or defective?

Check the Cat. 5 / 6 cable connection between the first InfraBox and network device. 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 - First InfraBox failed?

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

### 3. GUI shows **a certain InfraBox in a STAR network** disconnected

#### Step 1 - InfraBox power off?

Check the InfraBox is power ON or not

#### Step 2 - Can ping the IP address?

- i. Make sure the IP address can be found and configured using the “ **IP setup utilities for InfraBox** “
- ii. Make sure the IP address of the InfraBox is the same as the IP address of the cabinet configuration in the InfraSolution X Manager GUI

#### Step 3 - Cat. 5 / 6 cable disconnected, loosed or defective?

Check the Cat. 5 / 6 cable connection between the InfraBox and network device.

Make sure the connectors are firmly attached. And check if any defects on your cable or not. If yes, replace a new one.

## < 14.1 > FAQ & Troubleshooting

### Replacement of InfraBox

#### 1. How to replace a failed InfraBox in a DAISY CHAIN network with a new one?

**Step 1** - Configure the IP address of the new InfraBox as the failed one

( Please refer to user manual < 2.2 > InfraBox X-1000 / X-2000 for details )

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

**Step 3** - Use a Cat. 5 / 6 cable to bridge over the failed InfraBox which will be replaced to minimize data loss

**Step 4** - Remove all connected handles, sensors, PDUs and fan units from the failed InfraBox

**Step 5** - Power off and remove the failed InfraBox from connection

**Step 6** - Install the new InfraBox, cancel the cable-bridging and reconnect the InfraBox to the previous and next one

**Step 7** - Power on the new InfraBox

**Step 8** - Reconnect the removed handles, sensors, PDUs and fan units to the new InfraBox

**Step 9** - Configure the new InfraBox in < **CA – Edit Mode** >



Ignore step 2 and 3 if the InfraBox is in the last position of the daisy chain

#### 2. How to replace a failed InfraBox in a STAR network with a new one?

**Step 1** - Configure the IP address of the new InfraBox as the failed one

( Please refer to user manual < 2.2 > InfraBox X-1000 / X-2000 for details )

**Step 2** - Remove all connected handles, sensors, PDUs and fan units from the failed InfraBox

**Step 3** - Power off and remove the failed InfraBox from connection

**Step 4** - Install the new InfraBox to the connection and power it on

**Step 5** - Reconnect the removed handles, sensors, PDUs and fan units to the new InfraBox

**Step 6** - Configure the new InfraBox in < **CA – Edit Mode** >

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