

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.

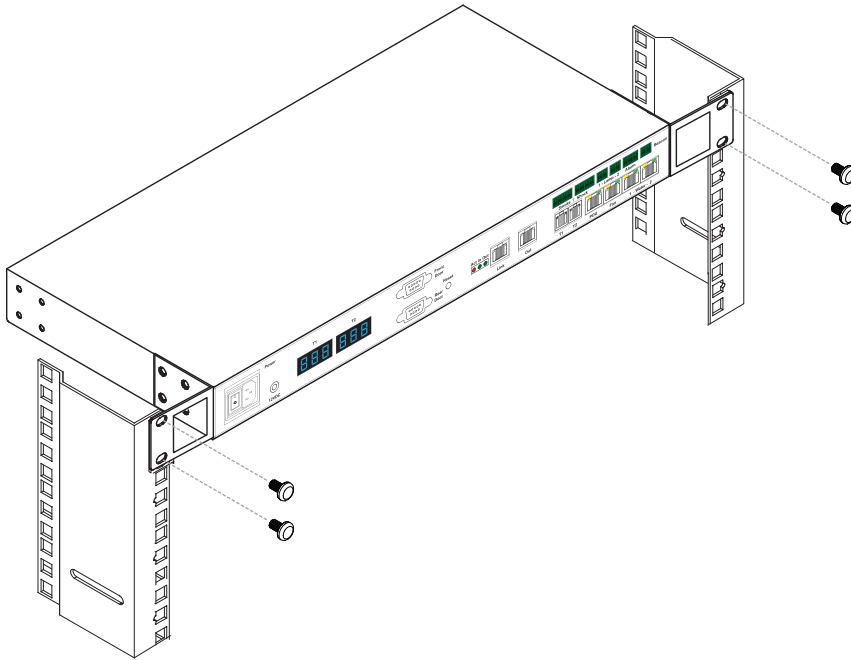
IMPORTANT NOTE: To comply with the FCC RF exposure compliance requirements, no change to the antenna or the device is permitted. Any change to the antenna or the device could result in the device exceeding the RF exposure requirements and void user's authority to operate the device.

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.



< 1.1 >	Tips for Hardware	P.1
	Key Hardware	
< 2.1 >	Package Contents	P.2
< 2.2 >	InfraBox X-1000 / X-2000	P.3
< 2.3 >	Handle X-800P / X-800M	P.8
< 2.4 >	Door Sensor - Inductive / Mechanical	P.15
	PDU & Fan Unit	
< 3.1 >	PDU	P.20
< 3.2 >	Fan Unit	P.21
	Environmental Sensor & Peripherals	
< 4.1 >	Temp. & Humid Sensor	P.23
< 4.2 >	Smoke Sensor	P.24
< 4.3 >	Shock Sensor	P.25
< 4.4 >	Water Sensor	P.26
< 4.5 >	LED Light Bar	P.27
< 4.6 >	LED Beacon	P.28
	Network Connection	
< 5.1 >	Daisy Chain	P.29
< 5.2 >	Star	P.29
< 5.3 >	Mixed	P.30
	Application	
< 6.1 >	Data Centre	P.31
< 6.2 >	Intelligent Building	P.32
< 6.3 >	Remote Site	P.33
< 6.4 >	Branches	P.34

< 7.1 > Tips for System Setup	P.35
--------------------------------------	------

< 8.1 > Key Word & Cabinet Icon	P.36
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Software Installation & Activation

< 9.1 > Key features	P.39
< 9.2 > CD Key Box	P.40
< 9.3 > Management PC & Client PC Requirement	P.41
< 9.4 > OS Platform & Web Browser	P.42
< 9.5 > Prerequisite before Software Installation	P.42
< 9.6 > Software Installation	P.43
< 9.7 > Remote Access	P.44
< 9.8 > Software Activation	P.45

Operation Setup

< 10.1 > Cabinet Alignment	P.48
< 10.2 > MFP - Master Floor Plan	P.51
< 10.3 > CA - Control Area	P.53
< 10.4 > User Setup	P.55
< 10.5 > Group Setup	P.56
< 10.6 > Visitor	P.58

System Setup

< 11.1 > Backup & Restore	P.60
< 11.2 > Alarm Setting / Mail Server Setting / Audio Visual Alarm	P.62
< 11.3 > Temperature Unit	P.63
< 11.4 > Door Opening Overdue Setting	P.63
< 11.5 > Time Rule	P.64

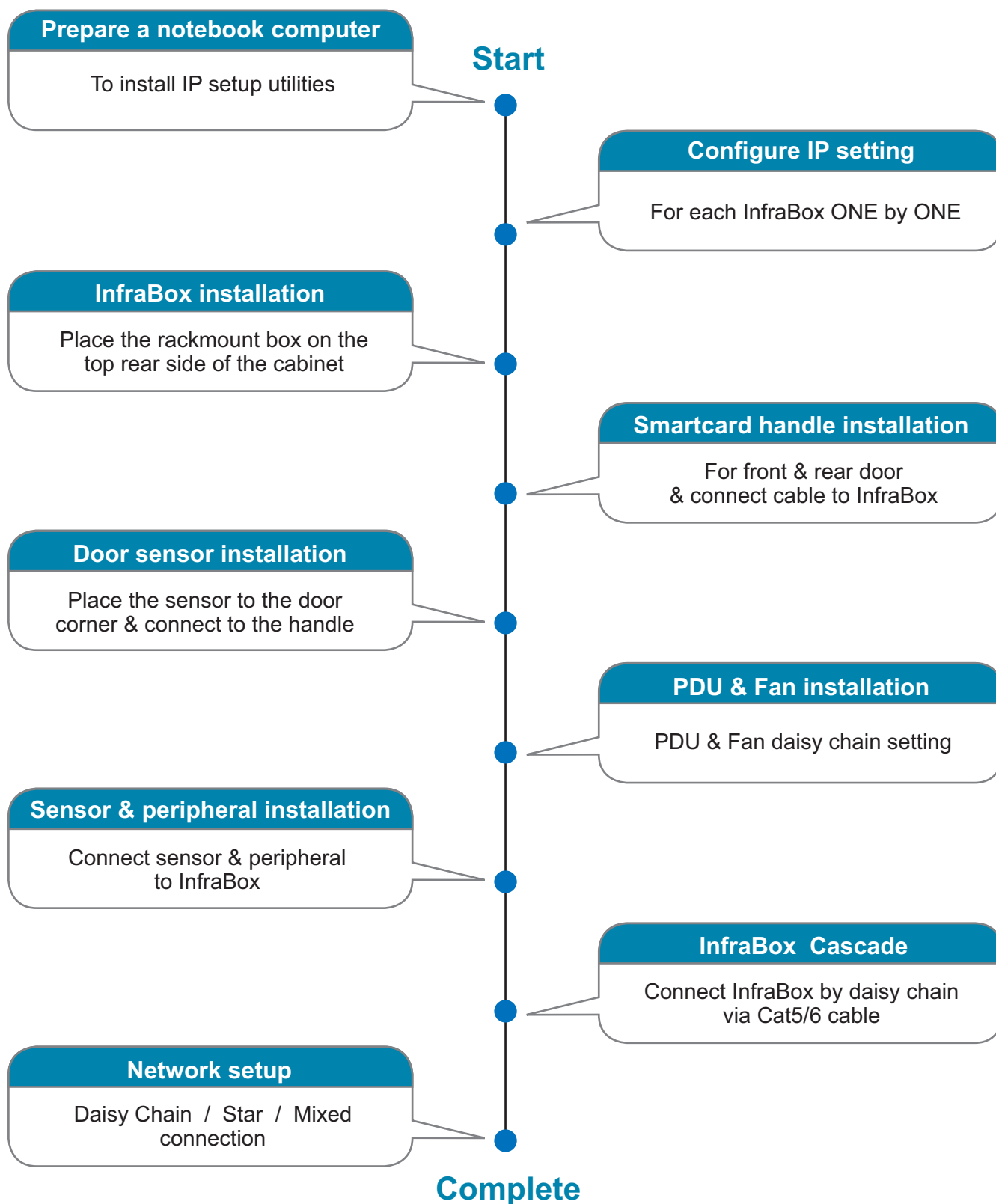
Operation & Usage

< 12.1 > Individual Cabinet Devices Enable & Disable	P.65
< 12.2 > Individual Cabinet Door open by Remote	P.67
< 12.3 > Individual Cabinet PDU Configuration & Control	P.68
< 12.4 > Individual Cabinet Fan Unit Configuration & Control	P.70
< 12.5 > Console Message	P.71
< 12.6 > PDU Outlet Grouping	P.72
< 12.7 > Device & System Event Log	P.75

< 13.1 > SNMP	P.76
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< 14.1 > FAQ & Troubleshooting	P.77
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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



OR



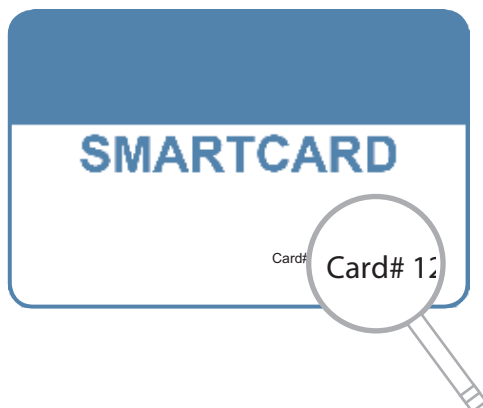
Patented and Worldwide
Patents Pending

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



Handle mounting screw set :

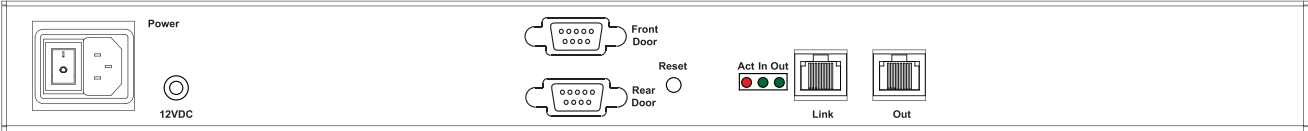
- Handle mounting bracket, 2 pcs
- U bracket x 2
- M3 x 10mm screw, 4 pcs
- M4 x 9mm screw, 4 pcs
- M5 x 10mm screw, 2 pcs
- Circle hole washer, 2 pcs
- Square hole washer, 6 pcs



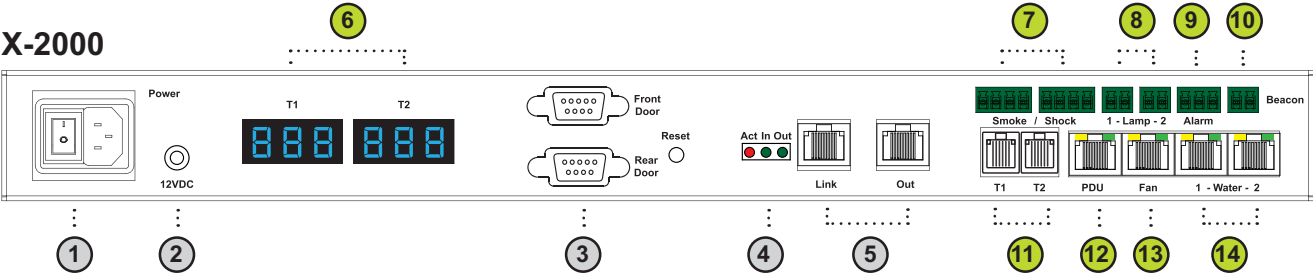
Each package bundled with smartcard x 1. The card on the bottom right shows card number information :

< 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

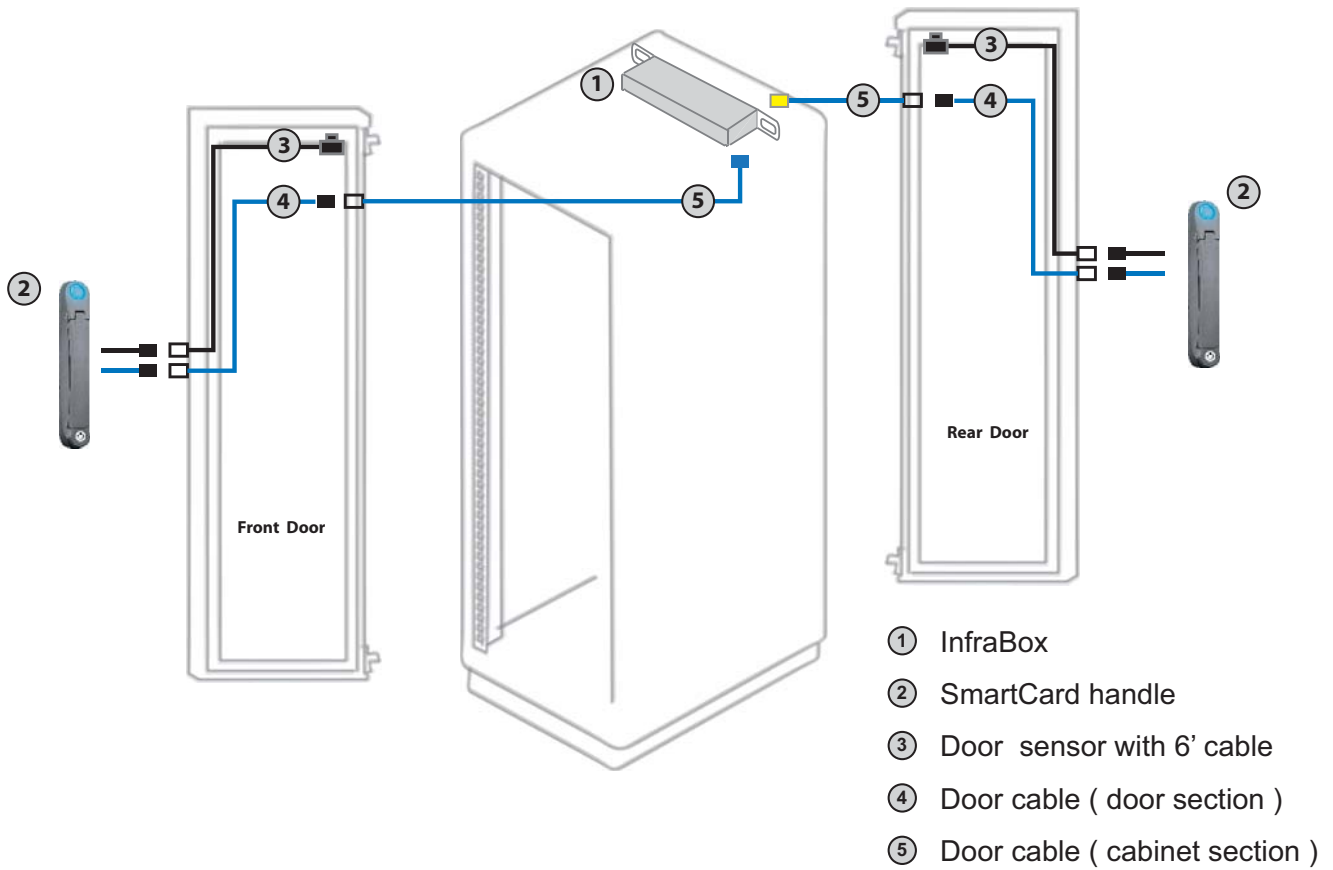
Fan unit port x 1 (RJ-45, up to fan unit daisy chain level x 2)
- 14

Water sensor port x 2

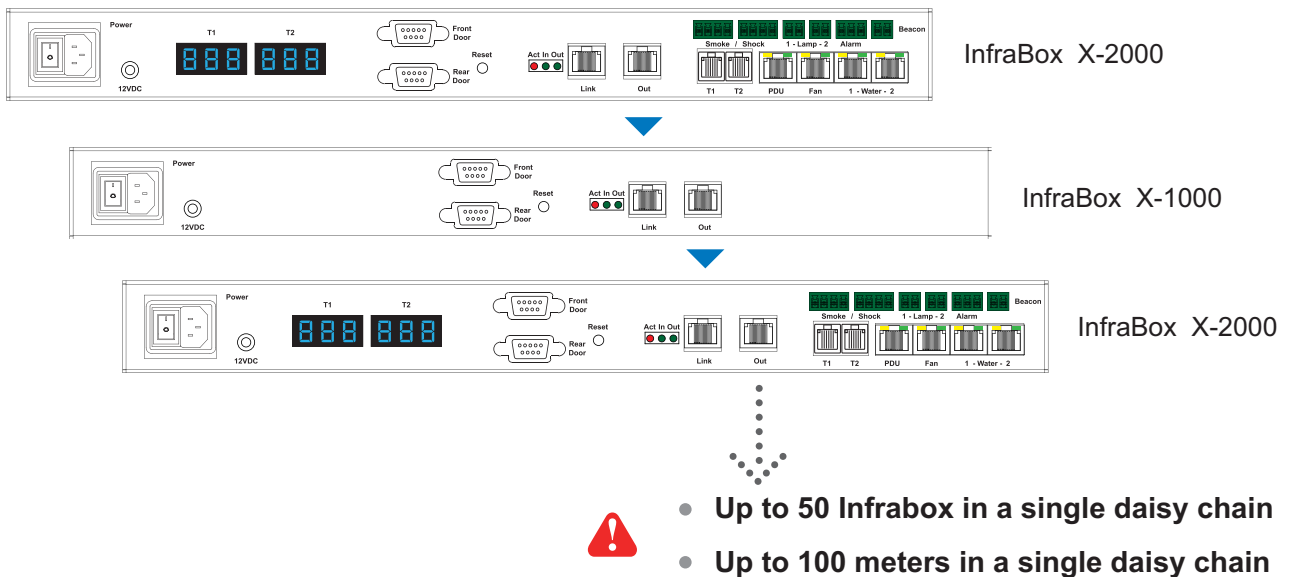
X-1000 / X-2000 Specification

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

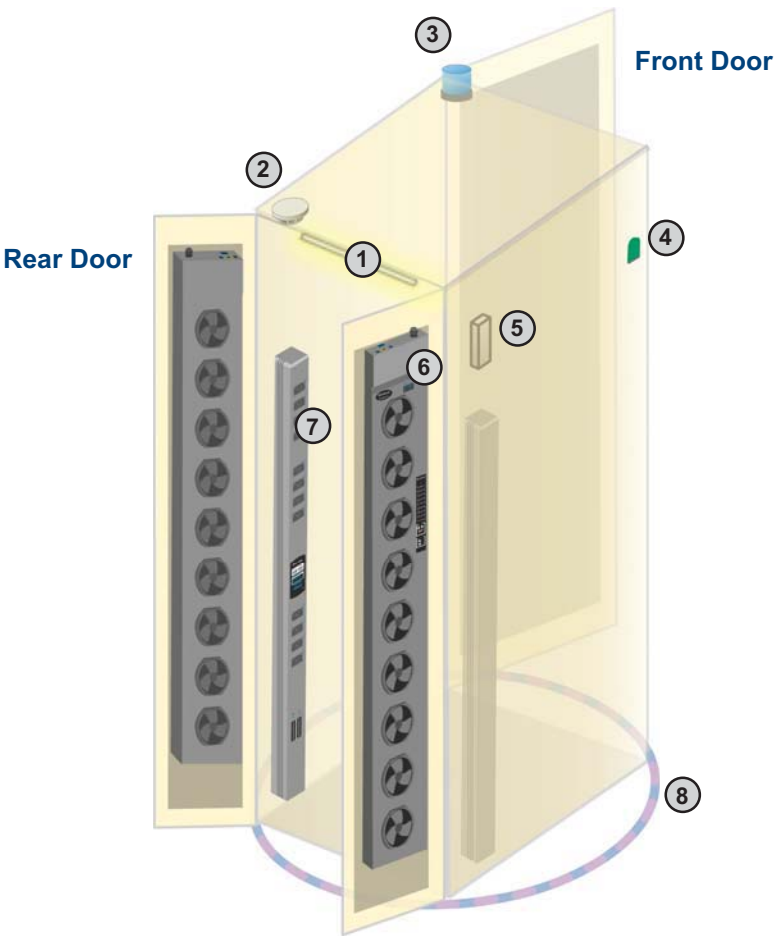
Key hardware Installation Diagram - InfraBox / Handle / Door Sensor



InfraBox Daisy Chain Connection



Installation Diagram - PDU / Fan / Sensor / Peripheral



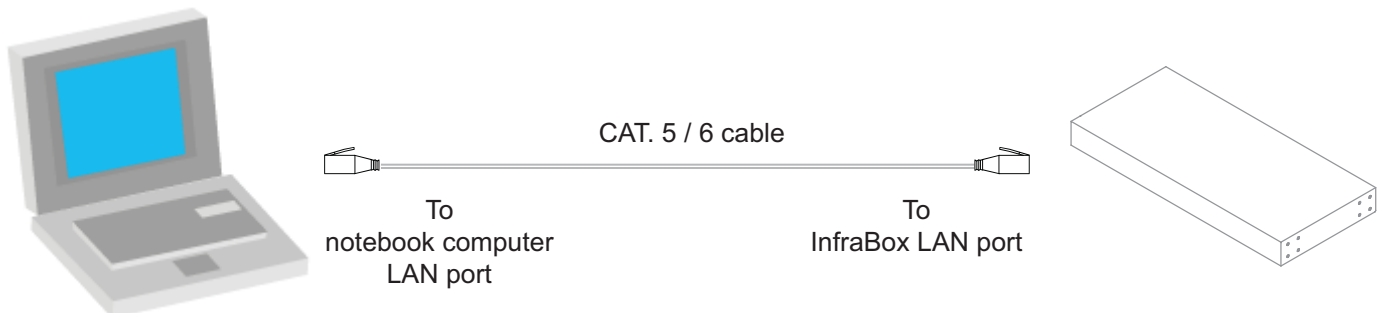
Item	Qty.	Location
① LED Light Bar	2	front & rear top inside
② Smoke Sensor	1	rear inside top
③ Flashing LED Beacon	1	front cabinet roof
④ Temp. & Humid. Sensor	2	any inside position
⑤ Shock Sensor	1	upper inside
⑥ Fan Unit	2	door mount or rackmount
⑦ PDU	4	vertical or rackmount
⑧ Water Sensor	1	surrounding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

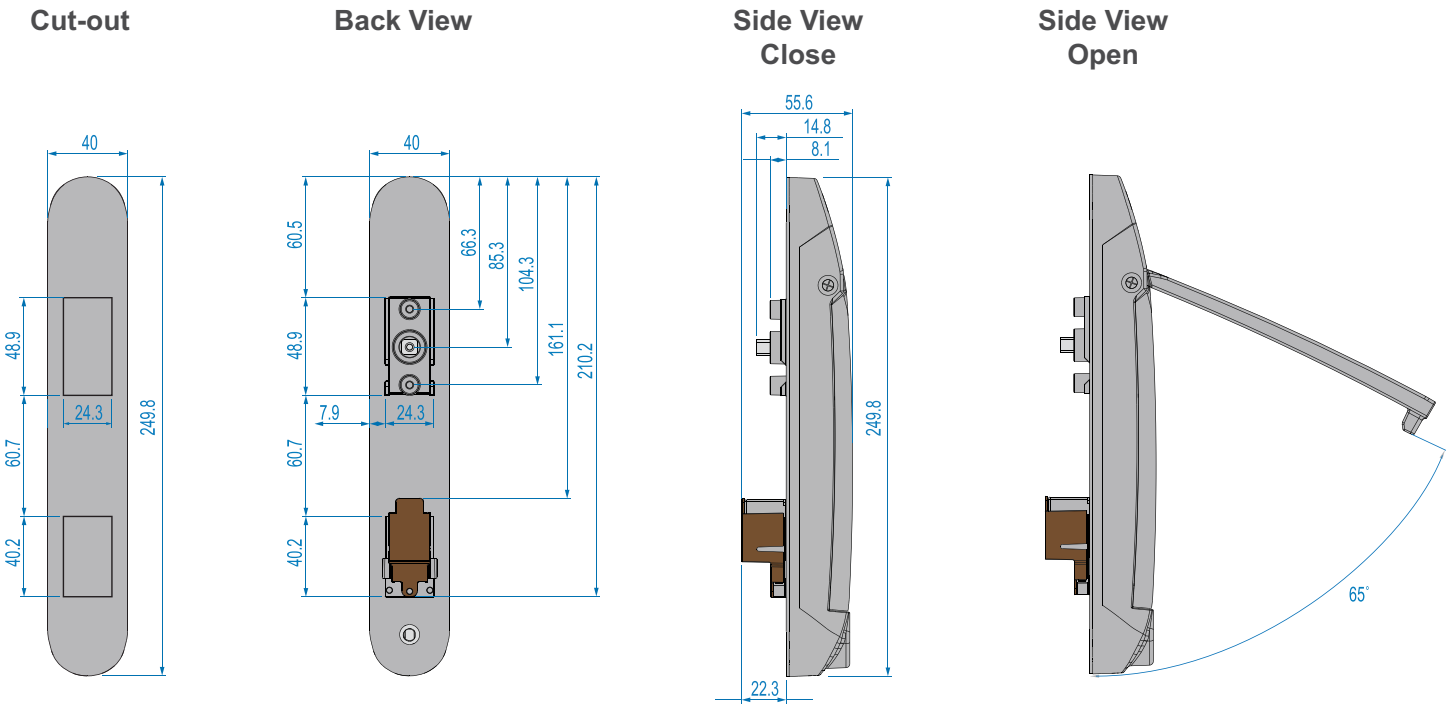


Please take the procedure no. 3 to 6 for all InfraBoxes ONE BY ONE.

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



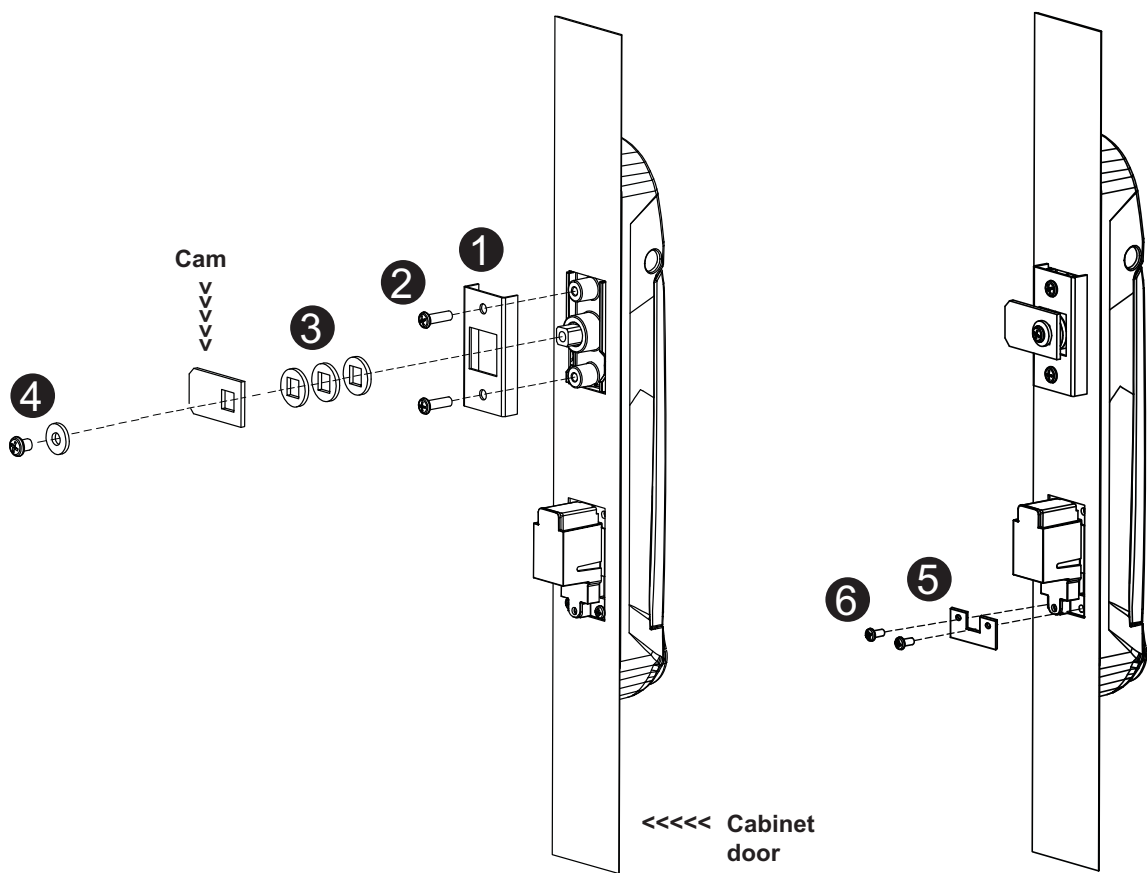
Models of left / right side opening

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.

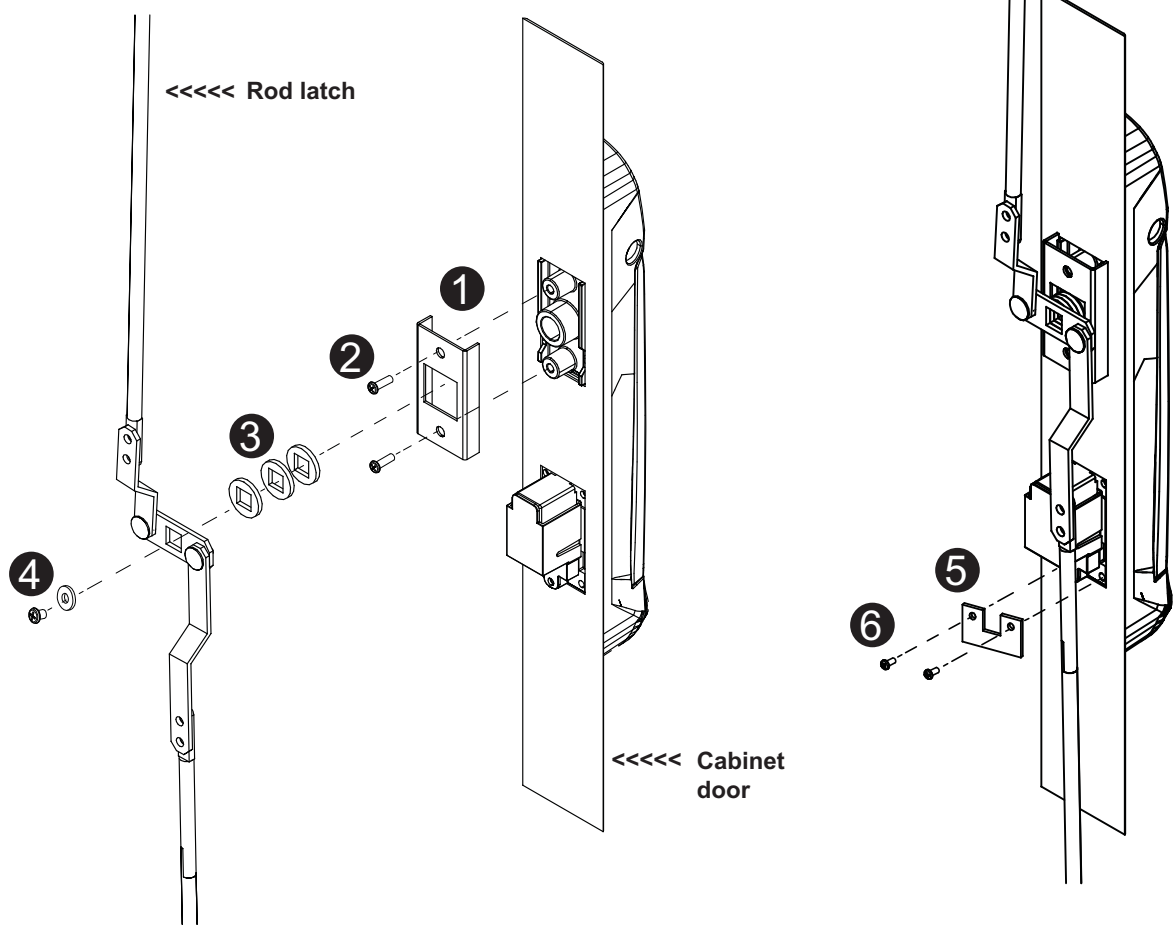
Handle mounting screw set for single point lock

		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.

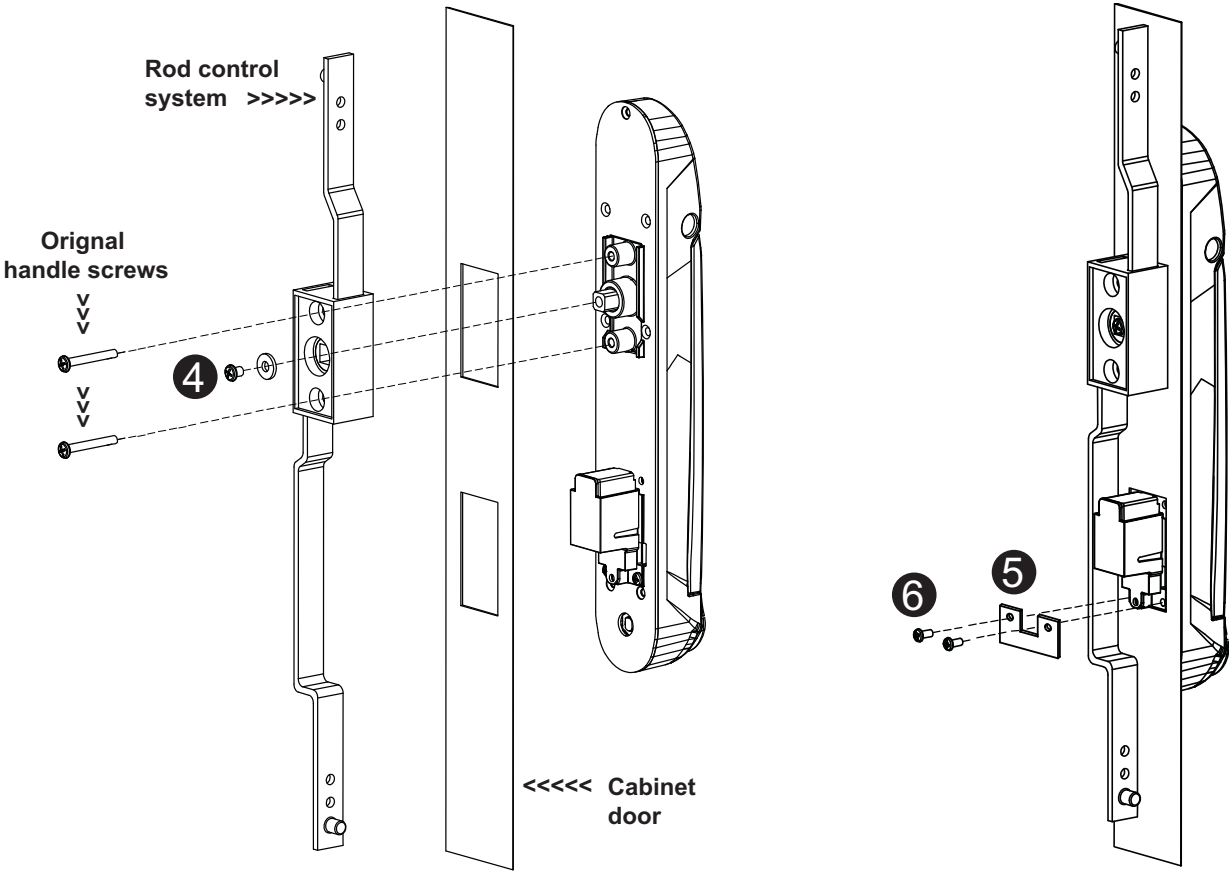
Handle mounting screw set for 2-point lock (light-duty)

		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	✓

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.

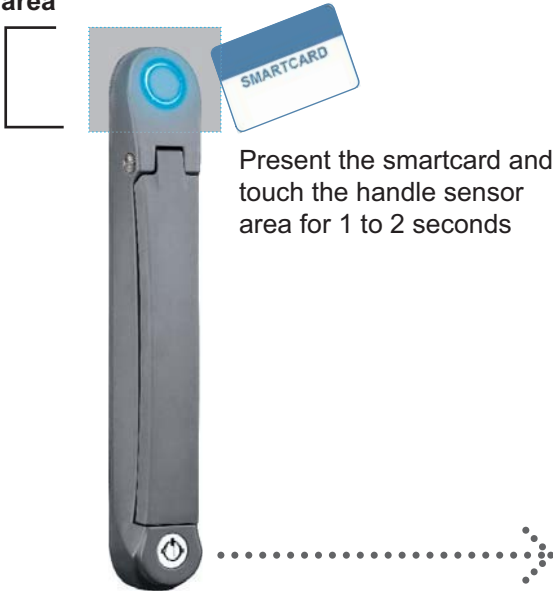
Handle mounting screw set for 2-Point Lock (with rod control)

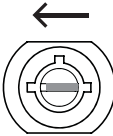
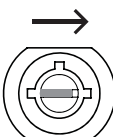
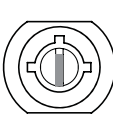
		Qty.	2-Point Lock (with rod control)
①	Handle mounting bracket	2	
②	M4 x 9mm screw for ①	4	
③	Square hole washer	6	
④	Circle hole washer w/ M5 x 10mm screw	2	✓
⑤	U bracket	2	✓
⑥	M3 x 10mm screw for ⑤	4	✓

Important Note for Handle

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

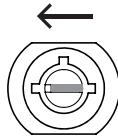
Sensor
area



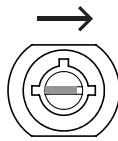
✗		Key lock mode Key cylinder to 9 o'clock direction Under key lock mode, even present the smartcard, the handle still keeps locked.
✗		Key unlock mode Key cylinder to 3 o'clock direction Under key unlock mode, the handle keeps unlocked.
✓		Smartcard mode ⚠ For smartcard operation, keep key cylinder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



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

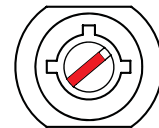


Key lock mode
Key cylinder to **9 o'clock direction**.



Key unlock mode
Key cylinder to **3 o'clock direction**.

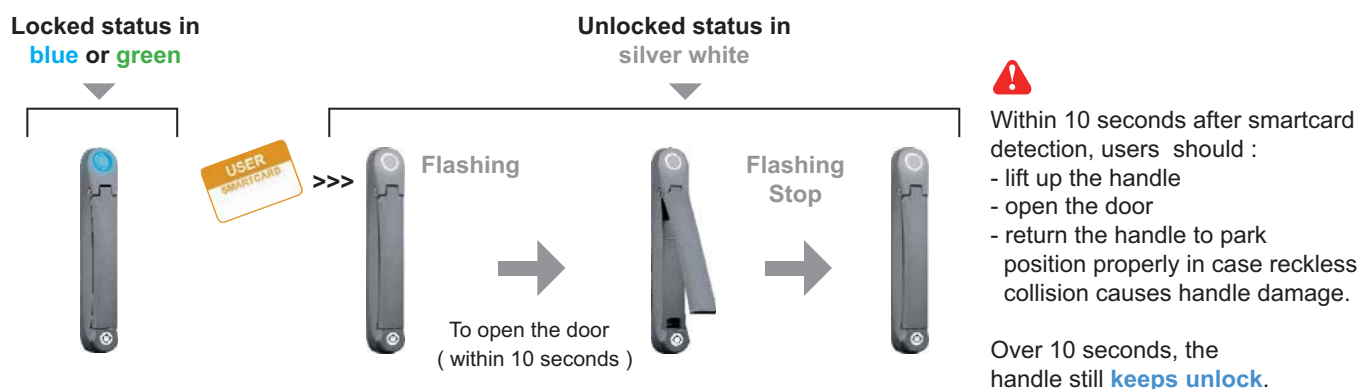
Maintenance Key (MK-001)



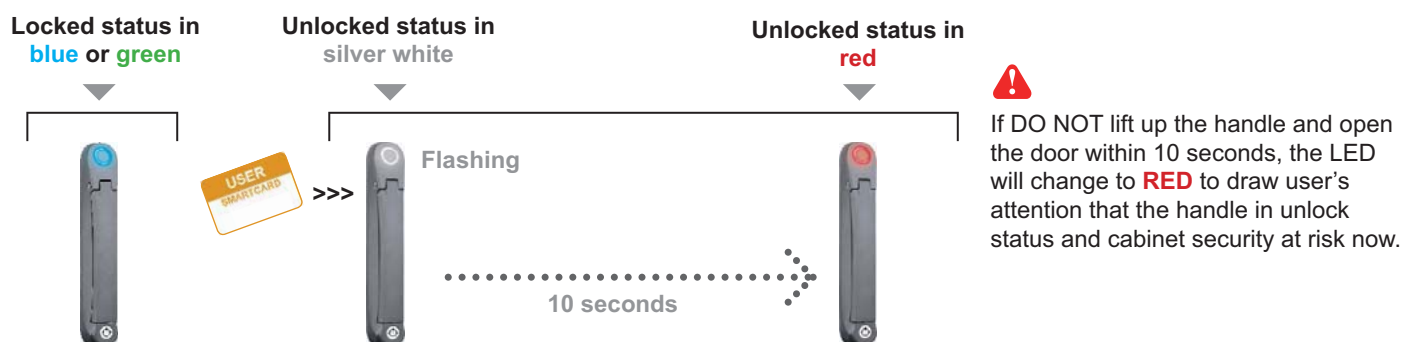
- Improper key usage may cause the cylinder stuck at abnormal direction 1 to 2 o'clock.
- Under this circumstance, the **maintenance key (MK-001)** is required to solve the problem.
- Please insert the **maintenance key** to the cylinder with push force for turning it to normal direction 9 or 12 or 3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



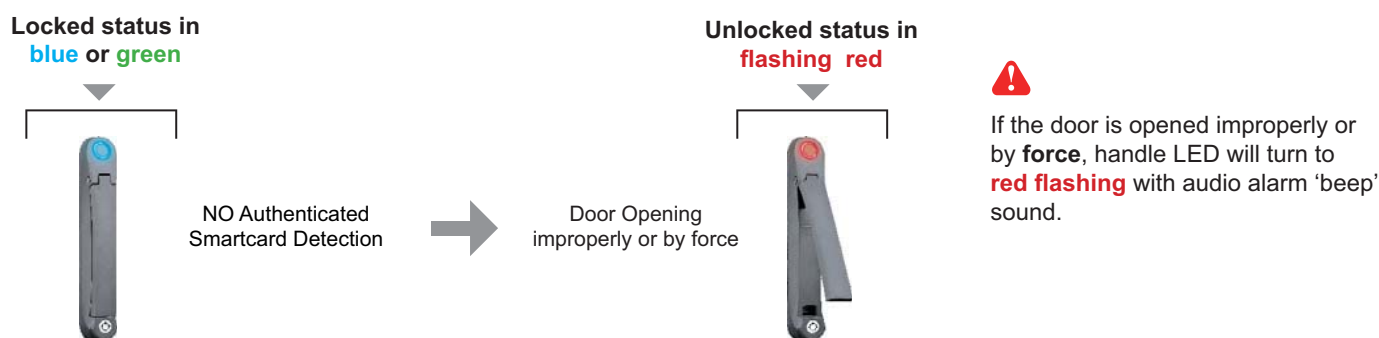
✓ How to unlock the handle & open the door properly



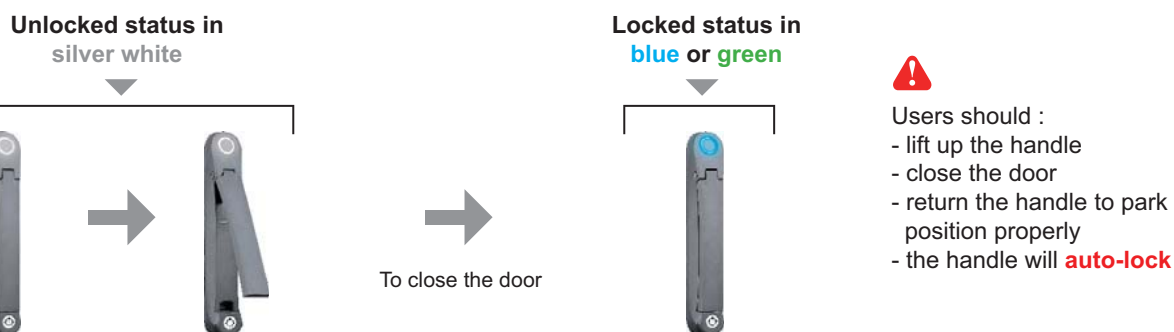
✗ Unlock the handle but NOT open the door



✗ Unauthorized door-open



✓ How to close the door properly

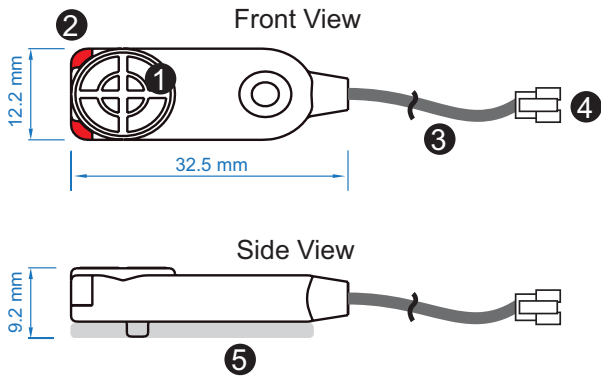


< 2.4 > Door Sensor - Inductive

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



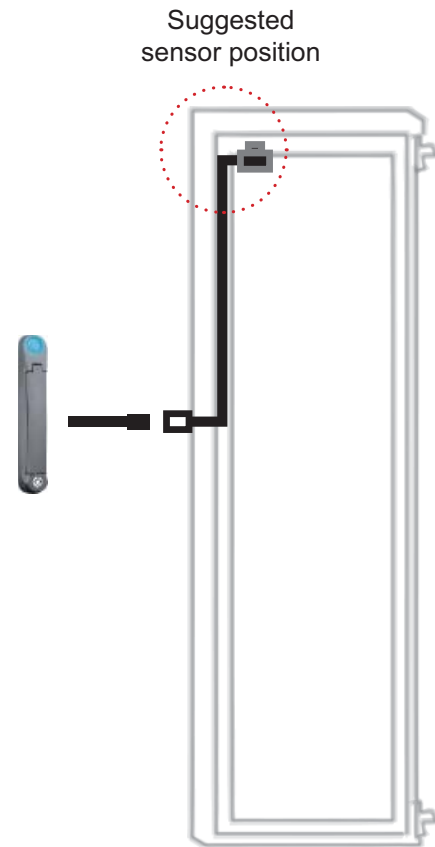
< 2.4 > Door Sensor - Inductive

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

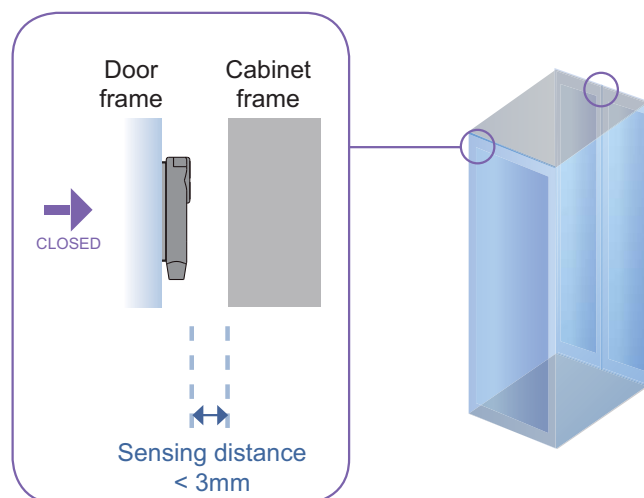
- cabinet frame made of ferrous metal (iron)
- sensing distance 3mm



Sensor Operation

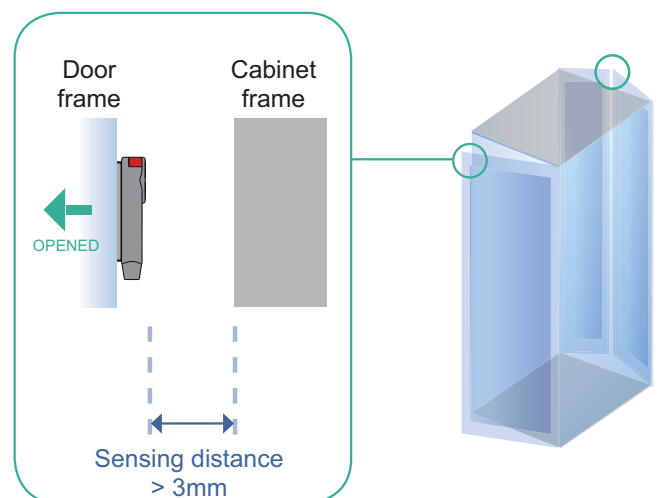
DOOR CLOSE

- 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



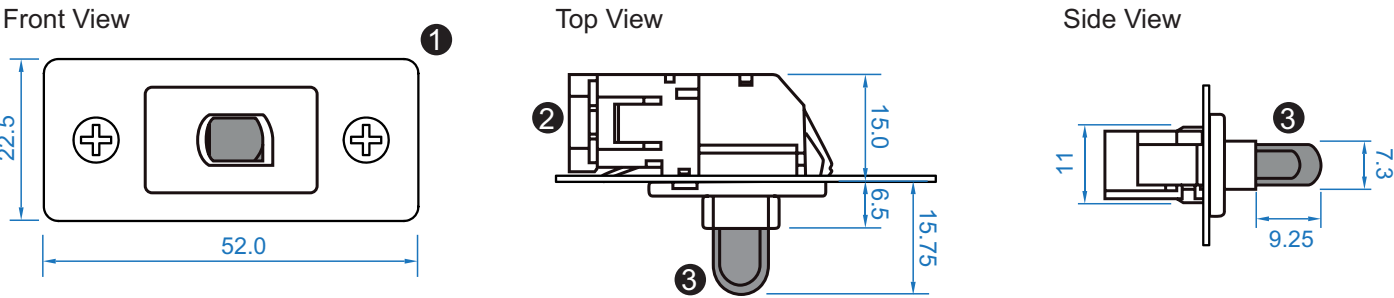
< 2.4 > Door Sensor - Mechanical

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

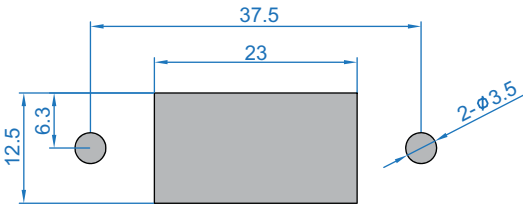
- Mechanical sensor w/ 2m cable x 2
- Mounting screws 6#32x4.5mm x 2



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



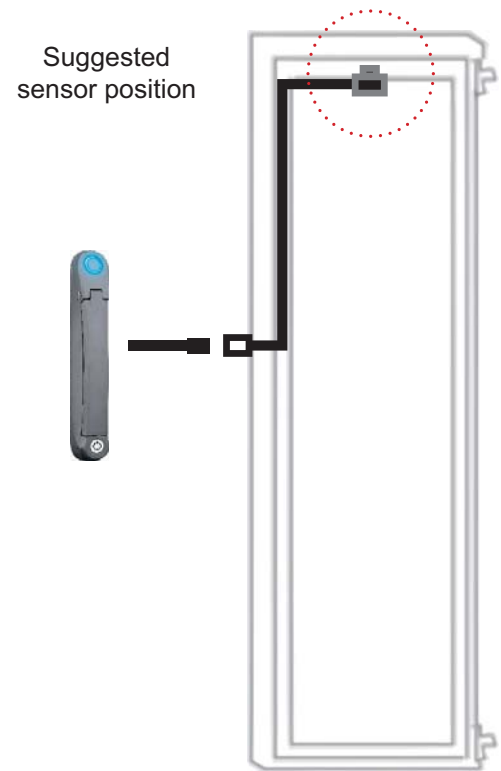
Dimension of door cutting hole

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

< 2.4 > Door Sensor - Mechanical

Installation steps

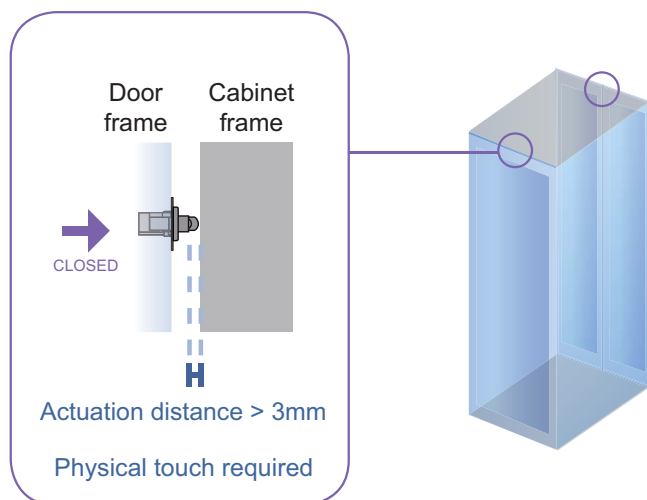
- connect to the handle
- place the sensor at the top middle of the door
- install the sensor in the custom hole
- secure it with bundled mounting screws 6#32x4.5mm x 2



Sensor Operation

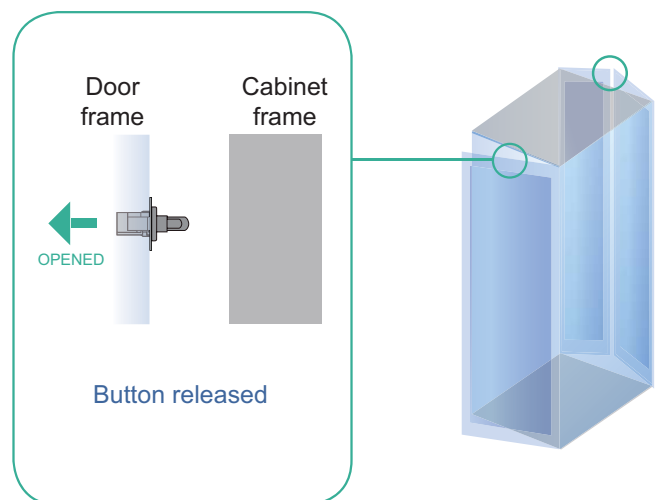
DOOR CLOSE

- 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



REACH

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

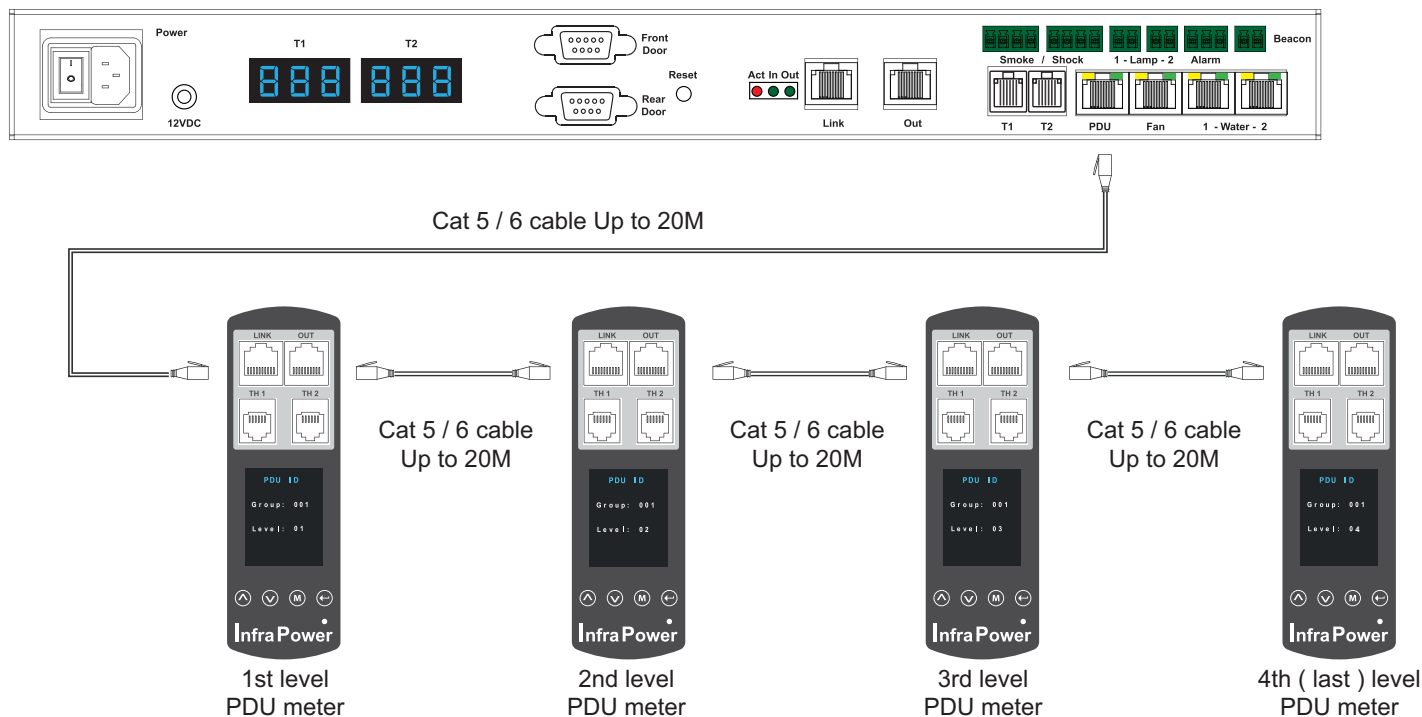
WSi series : outlet level measurement switched PDU



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

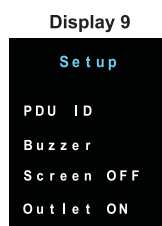
http://www.austin-hughes.com/solutions/intelligent-kWh-pdu.html#Single_Phase

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)



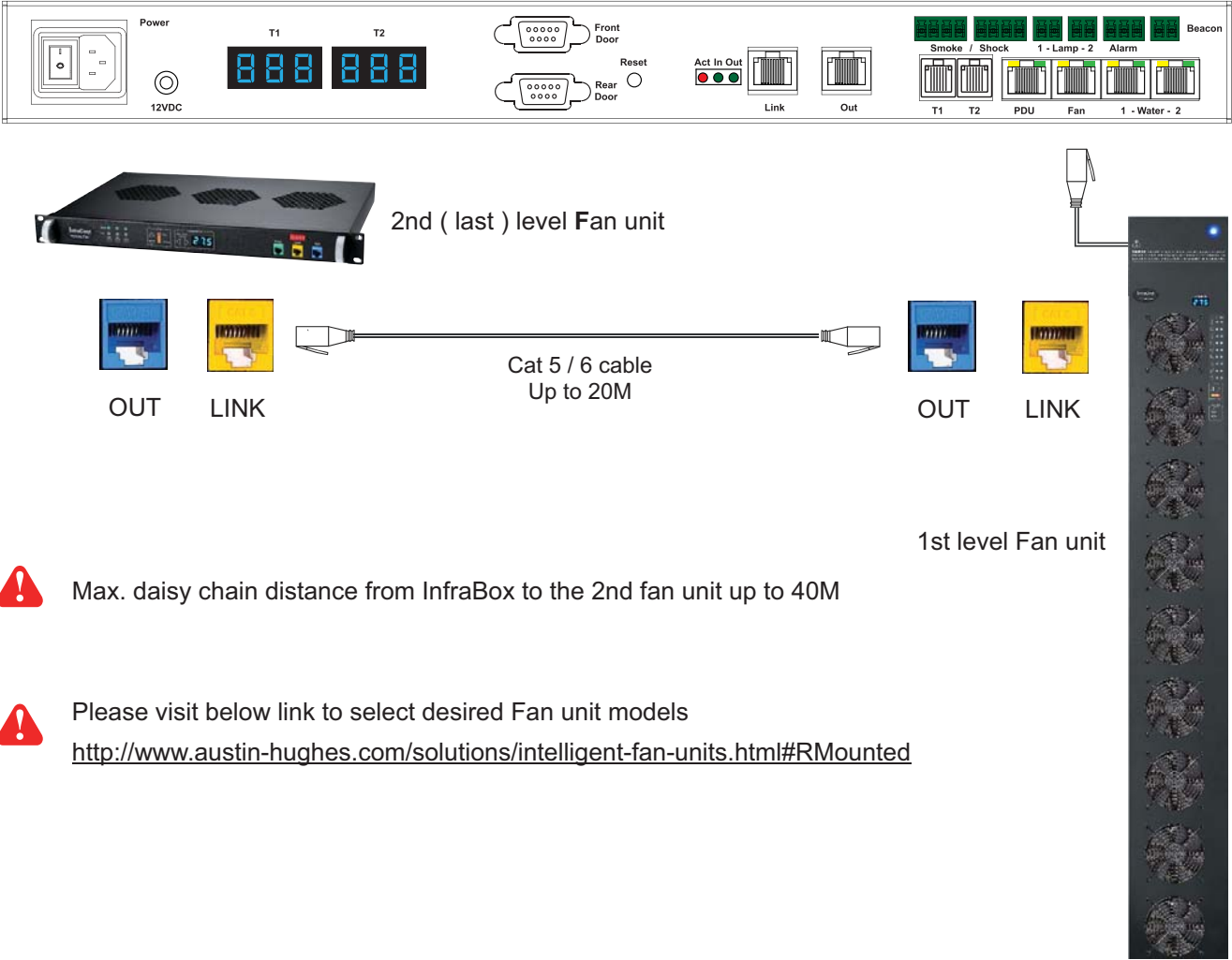
For details about PDU level setting, please refer to IPM-03 user manual < 3.1 > :

<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

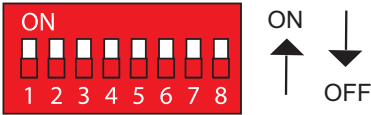


 Max. daisy chain distance from InfraBox to the 2nd fan unit up to 40M

 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	RF-1.3 / 1.6 / 1.9		RF-33.6 / 33.9
	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	Model	Product Dimension	Packing Dimension
	RF-1.3	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
	RF-1.6	480 x 458.3 x 43.5 mm 18.9 x 18 x 1.71 inch	550 x 550 x 120 mm 21.7 x 21.7 x 4.7 inch
	RF-1.9	480 x 623.3 x 43.5 mm 18.9 x 24.5 x 1.71 inch	550 x 730 x 120 mm 21.7 x 28.7 x 4.7 inch
	RF-33.6	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
	RF-33.9	195 x 42.9 x 1466 mm 7.7 x 1.7 x 57.7 inch	263 x 106 x 1650 mm 10.4 x 4.2 x 65.0 inch

Weight	Model	Net Weight	Gross Weight
	RF-1.3	4 kgs / 8.8 lbs	5 kgs / 11 lbs
	RF-1.6	6.8 kgs / 15 lbs	8 kgs / 17.6 lbs
	RF-1.9	9 kgs / 19.8 lbs	11 kgs / 24.2 lbs
	RF-33.6	4.3 kgs / 9.5 lbs	6.6 kgs / 14.5 lbs
	RF-33.9	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.



REACH

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

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

< 4.4 > Water Sensor

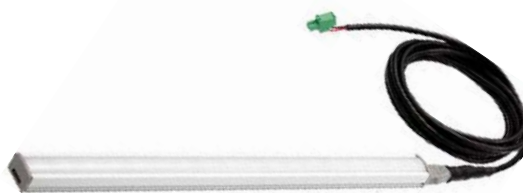


		Water Sensor
Part no.		IG-W01-3M
	Measurement Range	Wet or Dry (-20°C to 60°C)
	Rope Sensor Length	5m
Power Requirement	Voltage	5VDC, powered by sensor port
	Power consumption	125 mWatt
Connection	Extension cable length	3m (non-detection)
Environmental	Operating	-20 to 60°C Degree
	Storage	-20 to 80°C 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

		LED Light Bar
Part no.		CLB-IX-002-2M

Light	Color	Cool White
	Output	250 Lumens
	Color Temperature	5600-7000K
	Number of LED	18 High Output CREE SMD LED
	Life Expectancy	30,000 hrs

Power Requirement	Voltage	12VDC, powered by sensor port
	Current Consumption	0.375A
	Power consumption	4.5 Watt

Housing	Chassis	Extruded aluminum with silver powder coat
	Diffuser	Acrylic with milky white
	Installation	Magnetic base for unrestricted installation

Connection	Cable Length	2m / 3m (option)
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Environmental	Operating	-20 to 50°C Degree
	Storage	-20 to 60°C Degree
	Relative Humidity	5~90%, non-condensing

Dimensions	Product	300L x 20W x 12H mm
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Weight	Net	84g
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Compatibility	InfraSolution	X-2000 series
	InfraGuard	EC-300M & EC-300

Safety Regulatory	FCC & CE certified	
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Environmental	RoHS2 & REACH compliant by SGS	
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< 4.6 > LED Beacon

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



REACH

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

Network Connection

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

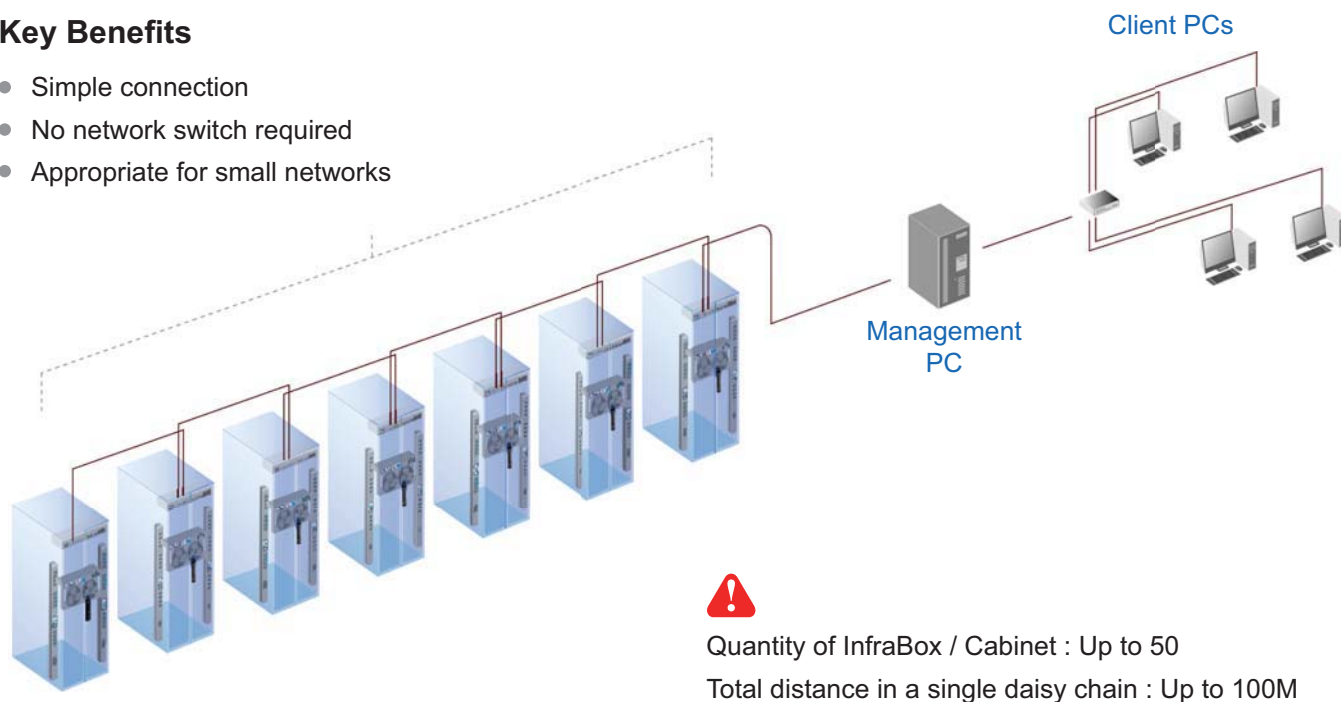
Which connection applied is subject to the site scale, environment and users' requirements.

< 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

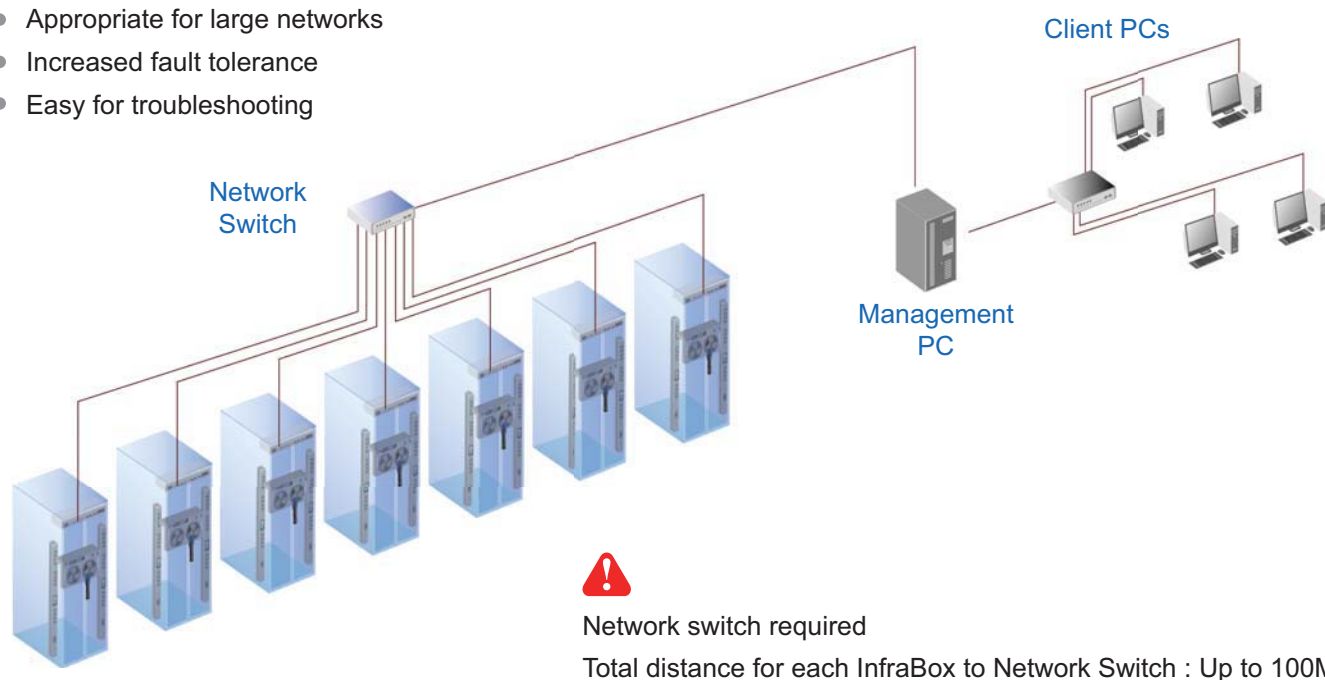


< 5.2 > Star

Connect to network switch by a point-to-point connection

Key Benefits

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



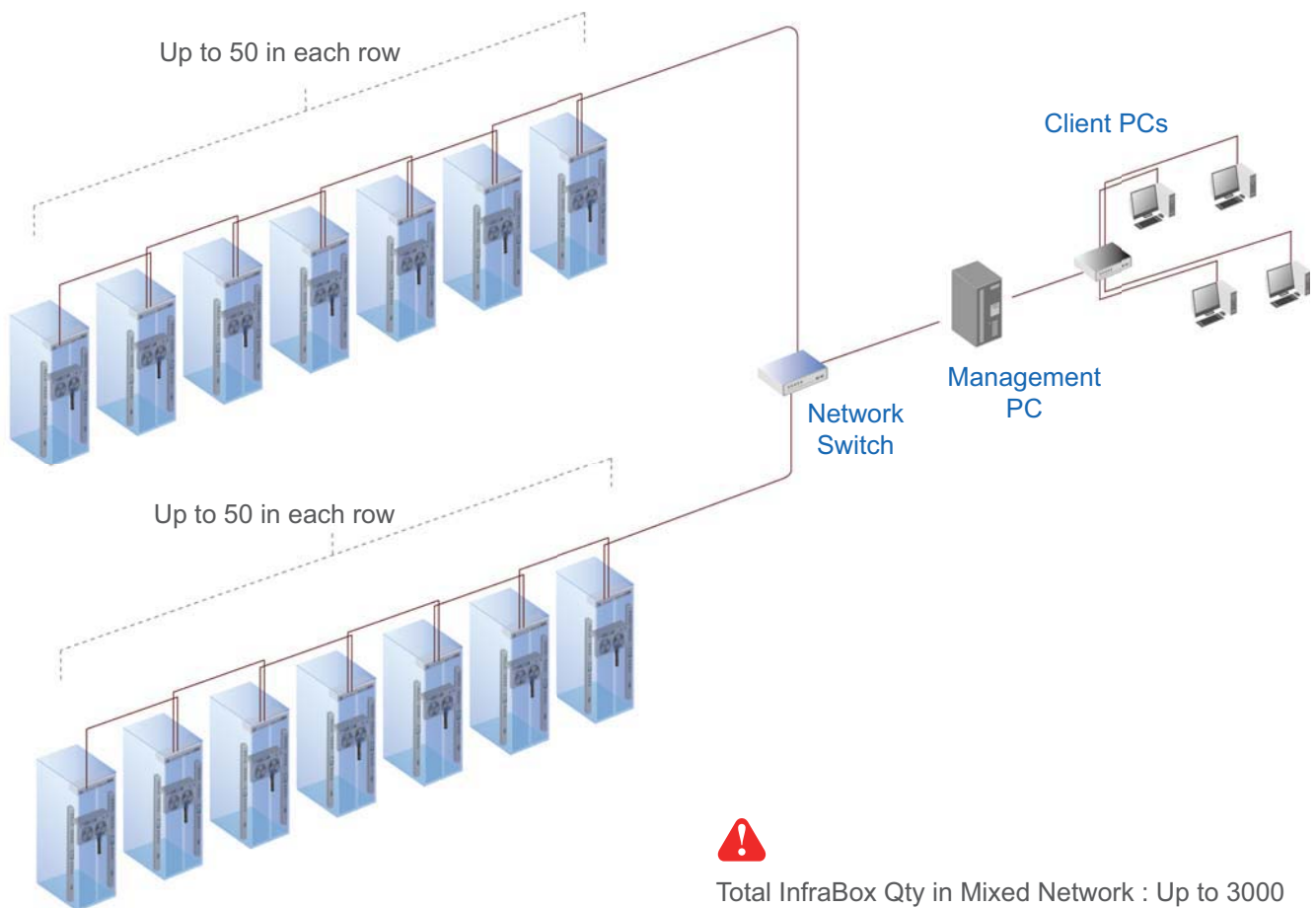
Network Connection

< 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

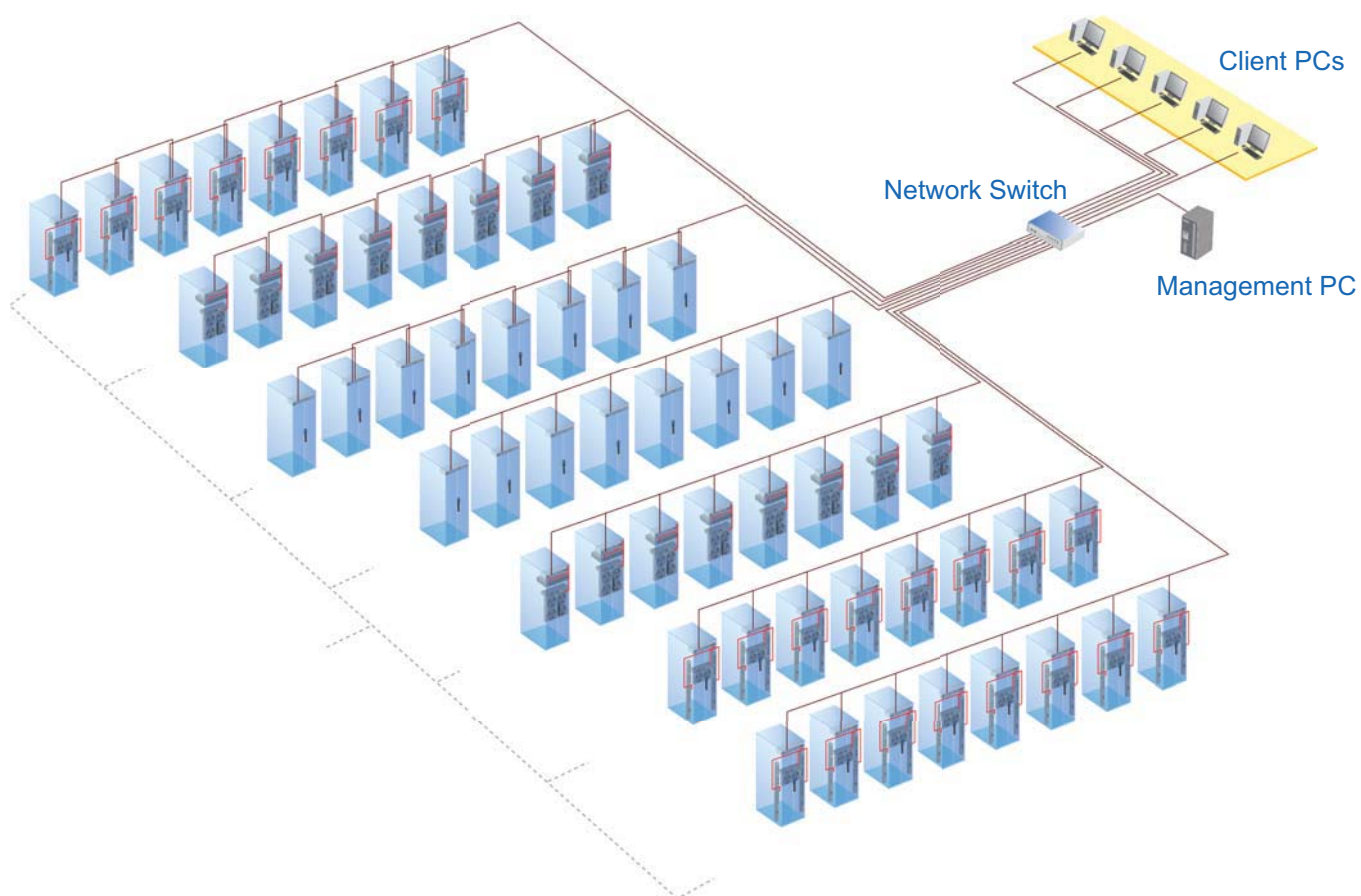


Application

< 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

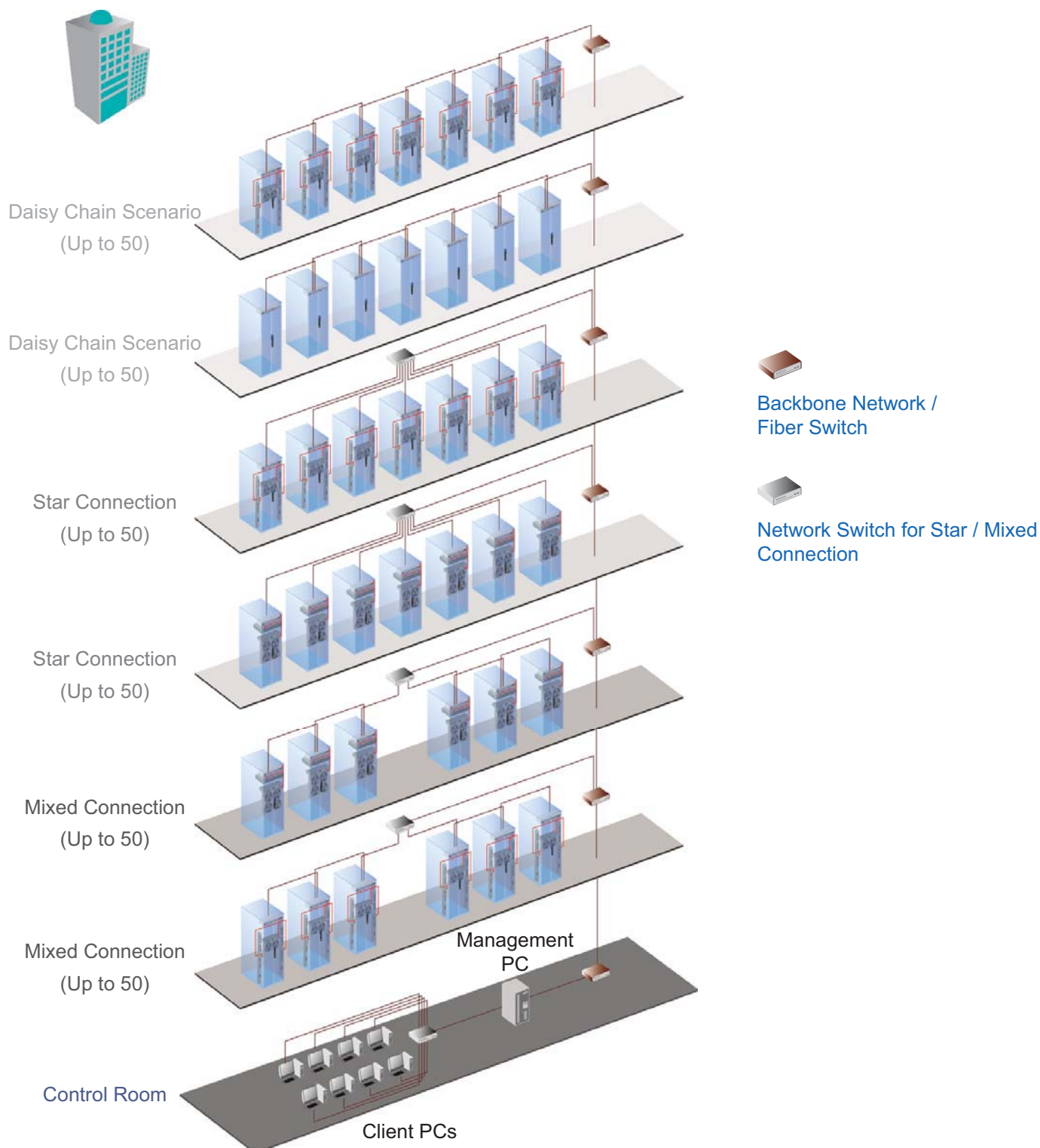


< 6.2 > Intelligent Building

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

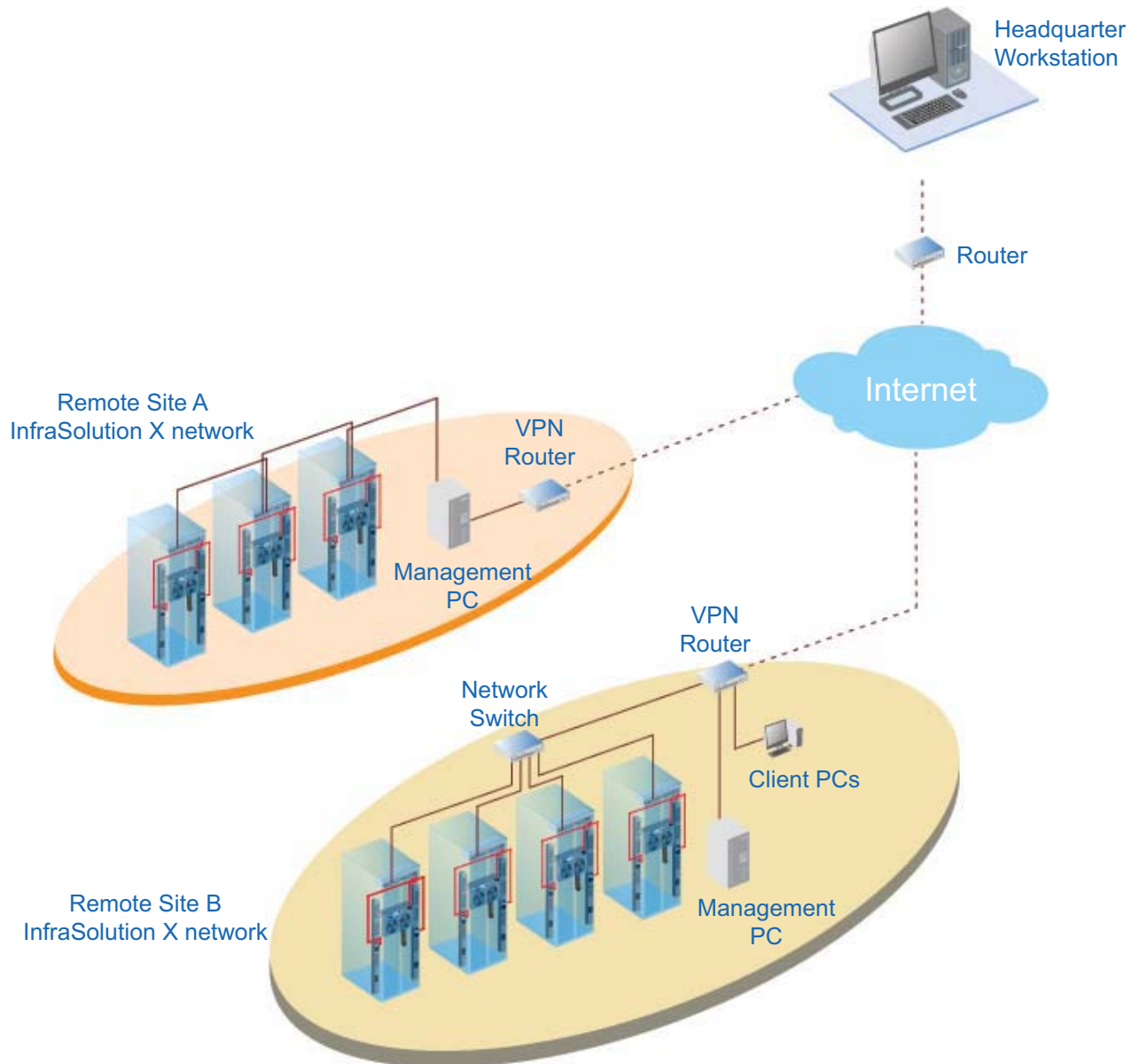


< 6.3 > Remote Site

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

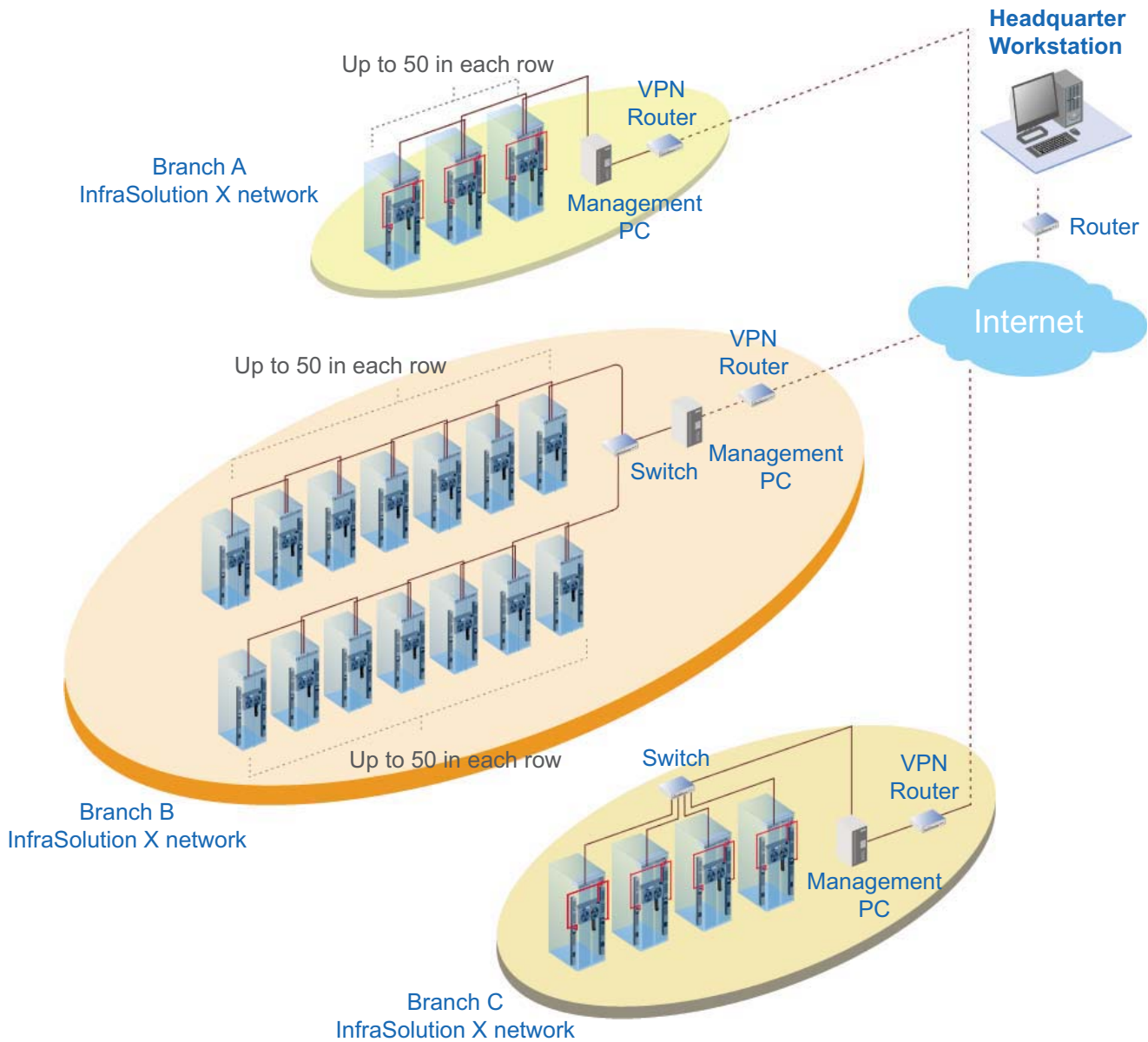


< 6.4 > Branches

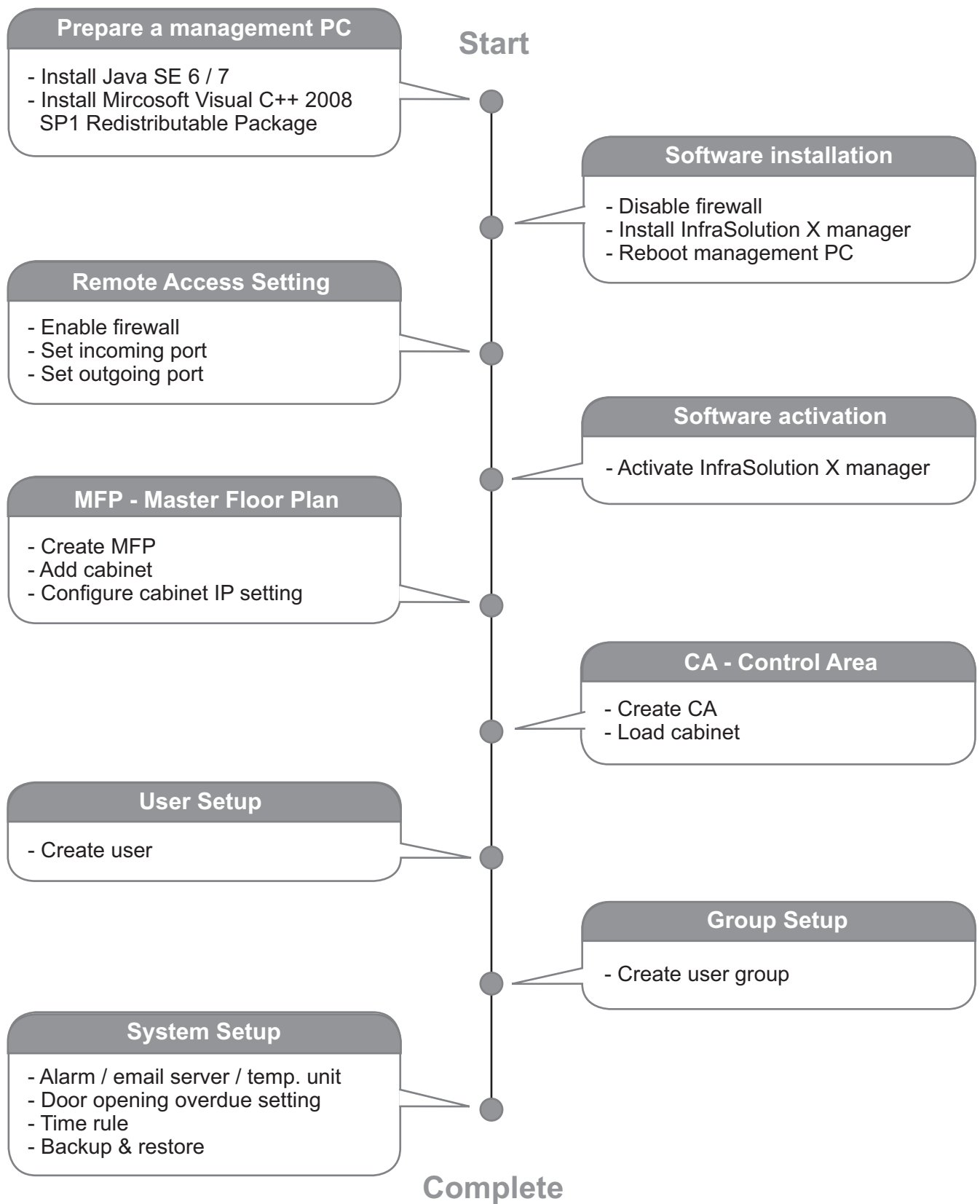
For a global or scalable company, it is vital to remote access and monitor the network of their nationwide and worldwide branches. InfraSolution X provides an ideal solution to keep an eye on cabinet access security and environmental condition.



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

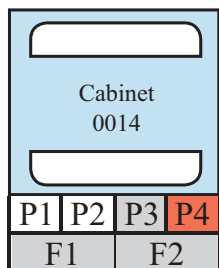
- Time rule is designed for security. It tries to restrict the users with a time period to access the system and cabinet.
- In system setup section < 11.5 >, you can set time rules up to 32.
- Afterward, all time rules will be shown in user group for their selection.
- Only one time rule can be assigned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

< 8.1 > Cabinet Icon

Cabinet Icon layer

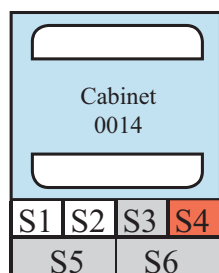
Cabinet icon has two layers, the layer one by default shows on all control area under view mode for status monitoring. User can click cabinet icon to switch to layer two.

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

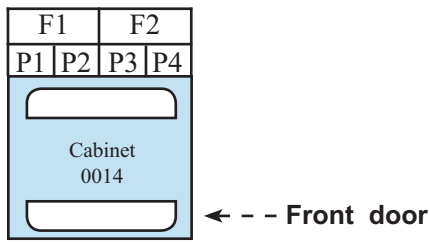
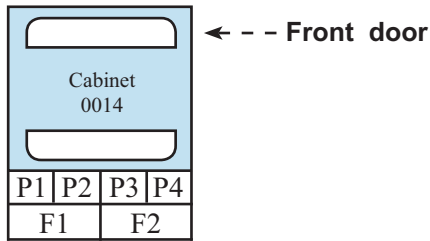
Layer two



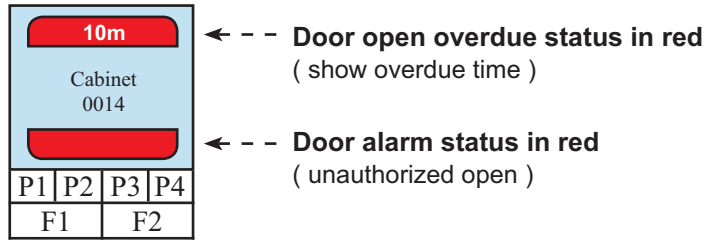
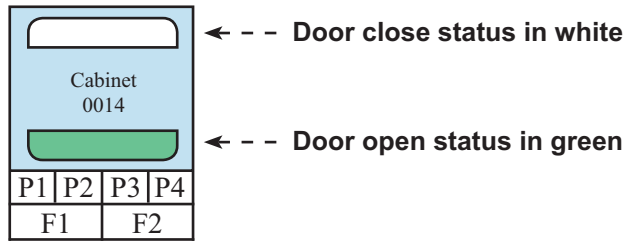
- show TH sensor status (**S1, S2**)
- if TH sensor is enabled & connected, **S1, S2** icon in WHITE color
- if TH sensor is enabled BUT disconnected, **S1, S2** icon in RED color
- if TH sensor is on alarm status, **S1, S2** icon also in RED color
- if TH sensor is disabled, **S1, S2** icon in GREY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

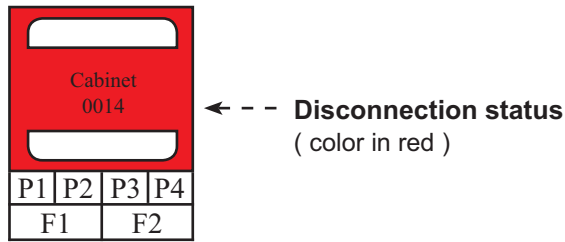
Door direction



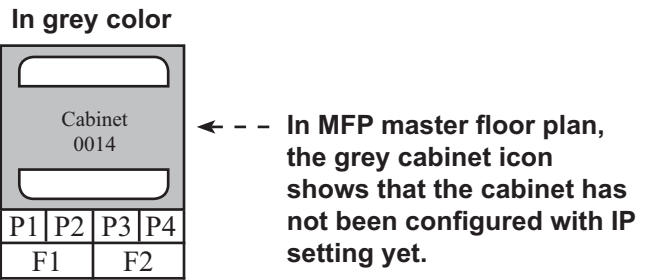
Door status



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
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

< 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)		✓	✓

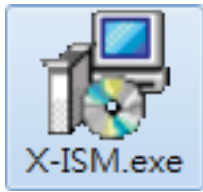


The firewall setting of the management PC MUST be OFF

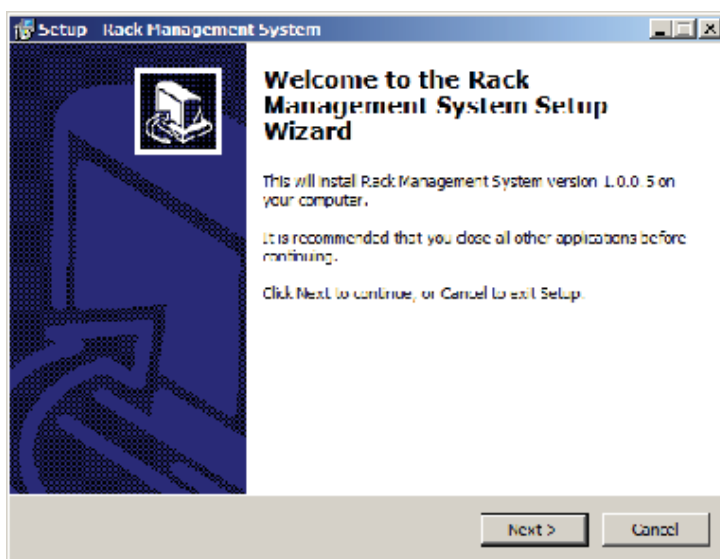
< 9.6 > Software Installation

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 >

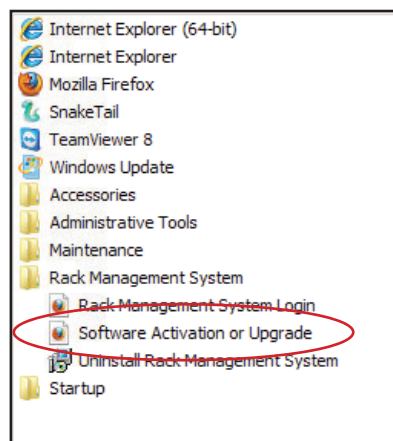
< 9.8 > Software Activation

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

* 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

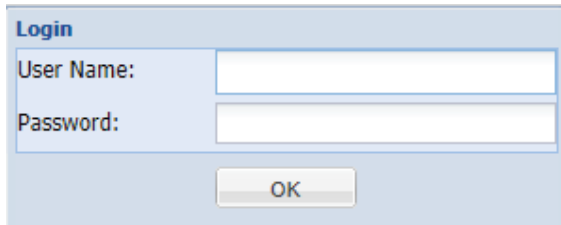


..... **Complete**

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 bar contains the word "Login" in blue. Below the title bar, there are two input fields. The first is labeled "User Name:" and the second is labeled "Password:". Below these fields is a button labeled "OK".

Login

User Name:

Password:

OK

Default login name : admin

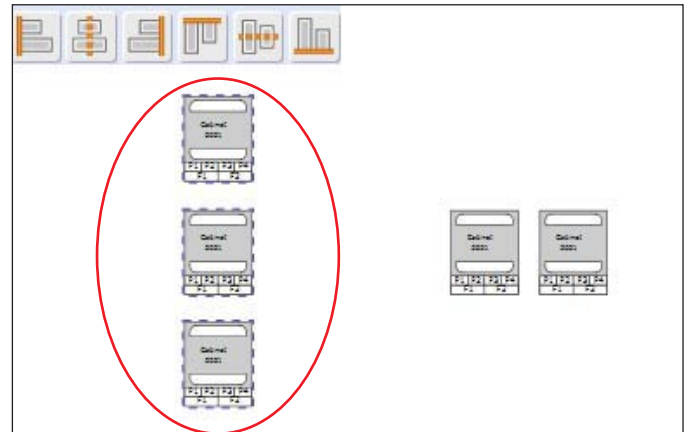
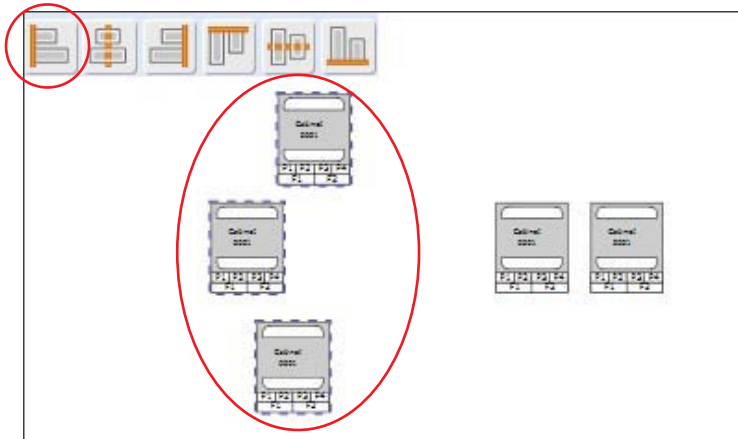
Default login password : admin

< 10.1 > Cabinet Alignment

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

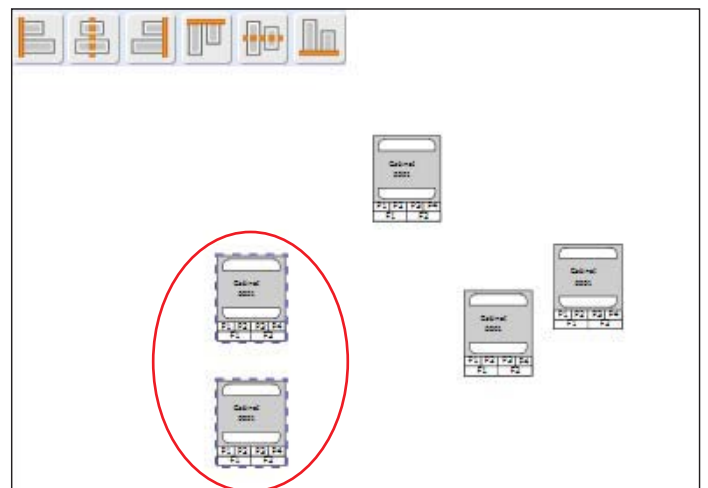
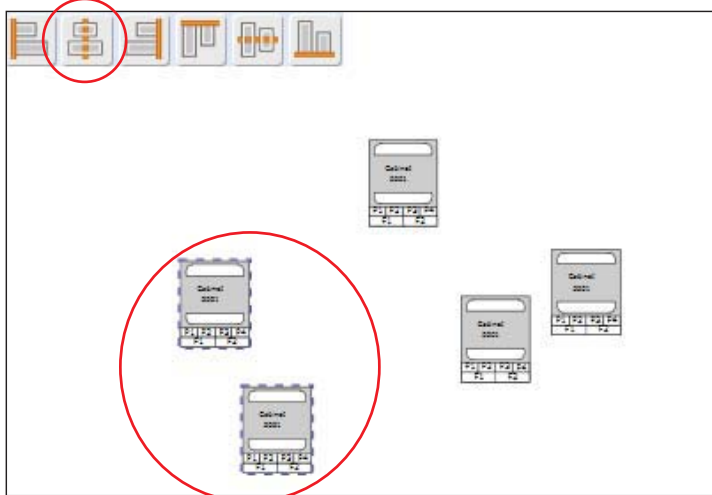
Alignment - Left

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



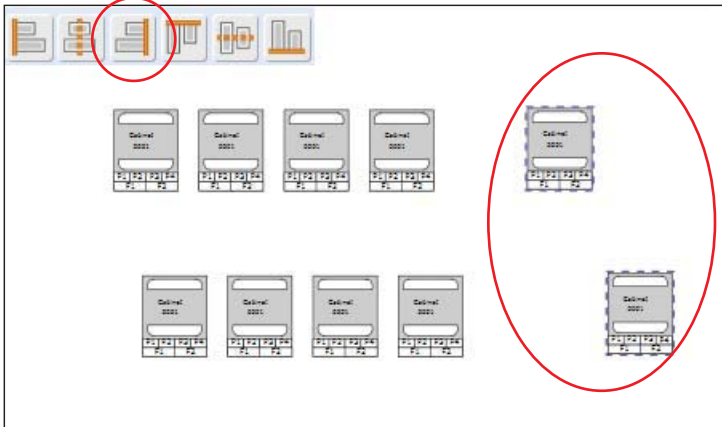
Alignment - Center

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

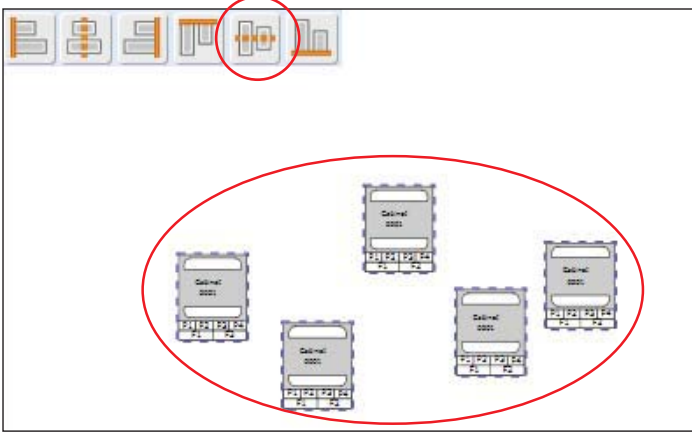
1. Press < Shift > to select the 5 highlighted cabinets
2. Release < Shift >
3. Press < Align Top >



< 10.1 > Cabinet Alignment

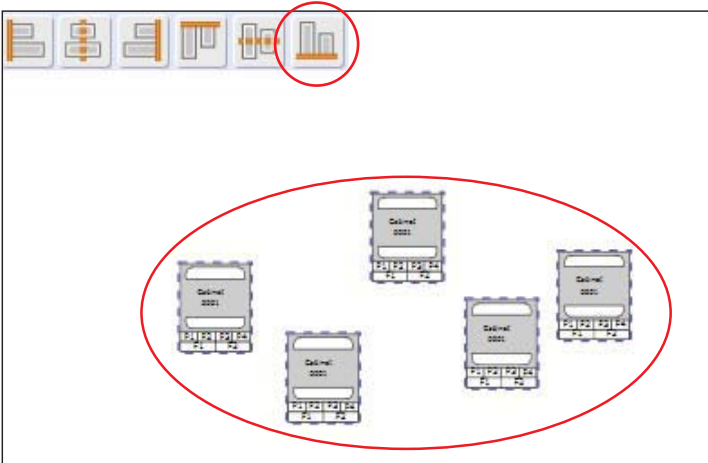
Alignment - Middle

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

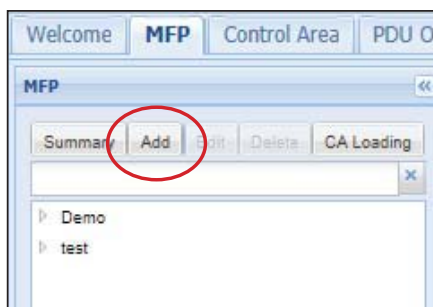
- An actual cabinet floor plan.
- Only in MFP, you can create cabinet & configure the IP setting for the cabinet.
- If you want to monitor & control cabinets & their devices, you need to build the control area.
- MFP can be more than one. No. of MFP is subject to the site scale & plan by floor, zone,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

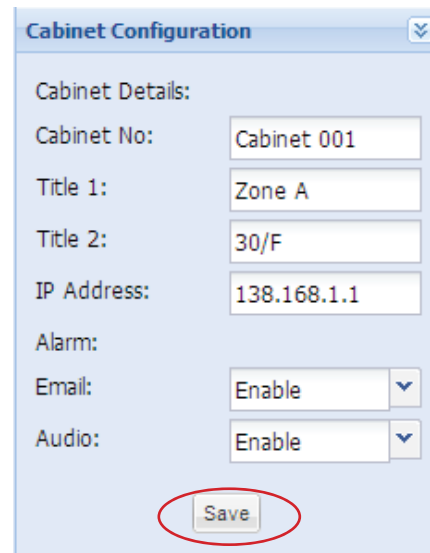
1. Select a cabinet
2. Input : “ **Cabinet No.** ” (min 4 char / max. 16 char.),
“ **Title 1** ” (min. 2 char / max. 8 char),
“ **Title 2** ”(min. 2 char / max. 8 char),
“ **IP address** ”, Enable / Disable the email & audio alarm
(If email alarm is “ **Disable** ” , NO alarm email will be sent to user.)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

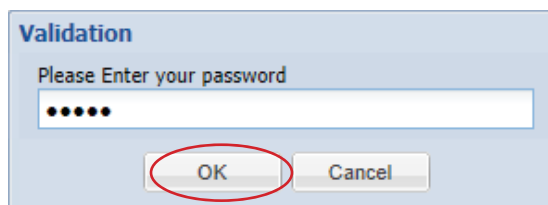
1. Select the MFP you want to delete
2. Select all cabinets in the MFP to clear first
3. Click “” & Click “**Yes**” to confirm to clear all cabinet
4. Then select the MFP & Click “ **Delete** ”
5. Click “ **Yes** ” in the confirmation window to confirm MFP deletion

< 10.3 > CA - Control Area

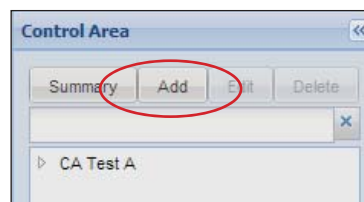
- You can build a Control Area for some specific cabinets which you want to monitor, configure & control.
- All cabinets in the CA should be loaded from the MFP by CA Loading button.
- CA can be more than one. How many CA is subject to your plan.
- CA has 2 modes : Edit mode & View mode.
- Under Edit 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

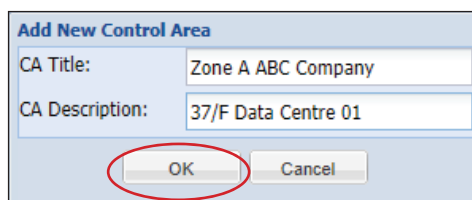
1. Click “ **Control Area** ” tab
2. Click “  ” & input the login password
in validation window to enter “ **Edit Mode** ”



3. Click “ **Add** ”

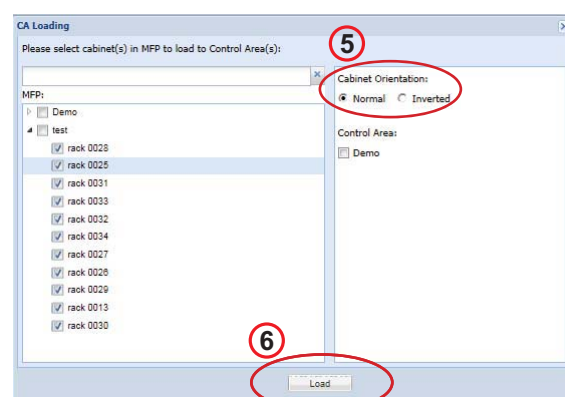


4. Input the CA title & Description
(min. 1 char / max. 32 char)
5. Click “ **OK** ” to finish CA addition



Load Cabinet

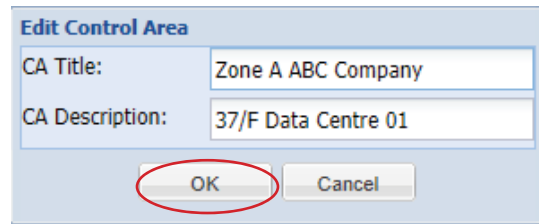
1. Go back to “ **MFP** ” tab
2. Select the MFP where the cabinet(s) you want to load to CA
3. Click “ **CA loading** ”
4. You can load whole MFP cabinets or part of them by tick
5. In “ **Cabinet Orientation** ”, you can select Normal if the rear door at bottom side, or select Inverted if the rear door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

Checkboxes and their states:

- ☒ Enforce to change password in next login
- ☒ Email Alert (Circled with a red circle and a circled '4')
- ☐ User Suspended (Circled with a red circle and a circled '5')

Buttons: 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

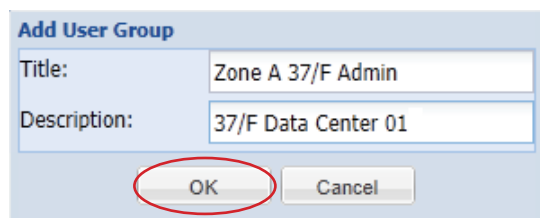
1. Select the user you want to delete
2. Click “ **Delete** ” in “ **User Details** ” window & Click “ **Yes** ” in the warning window to confirm user deletion

< 10.5 > Group Setup

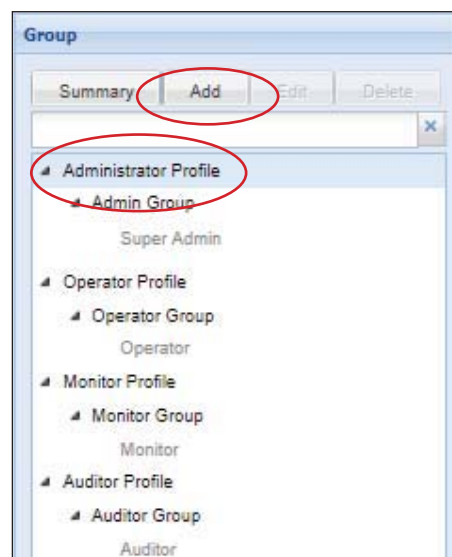
- You can form a user group from the user list.
- You can define the user group with authority and which control area / areas to monitor & access.
- Each user subordinated to ONLY ONE user group.
- If the user wants to join another user group, a new login name, password & smartcard MUST BE assigned.
- 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

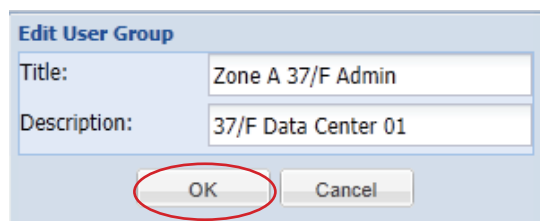


The 'Add User Group' dialog box contains two text input fields. The first field, labeled 'Title:', contains the text 'Zone A 37/F Admin'. The second field, labeled 'Description:', contains the text '37/F Data Center 01'. At the bottom of the dialog, there are two buttons: 'OK' and 'Cancel'. The 'OK'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

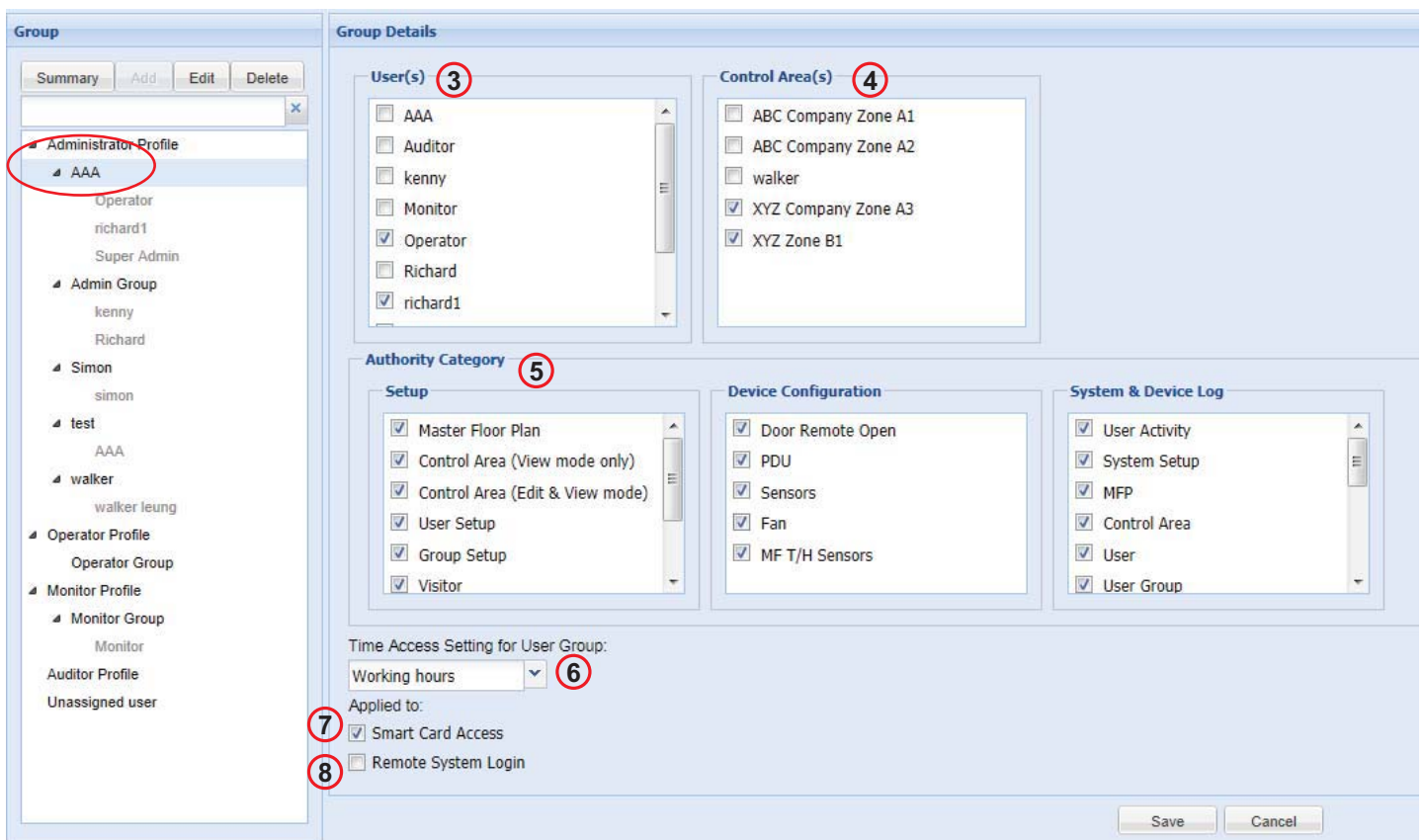


The 'Edit User Group' dialog box is identical to the 'Add User Group' dialog box. It contains the same text input fields with 'Zone A 37/F Admin' and '37/F Data Center 01', and the same 'OK' and 'Cancel' buttons at the bottom. The 'OK' button is circled in red.

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, the 'Group' list has 'AAA' selected and circled with a red circle and the number 3. The main area is divided into several sections:

- User(s)** (3): A list of users with checkboxes. 'Operator' and 'richard1' are checked.
- Control Area(s)** (4): A list of control areas with checkboxes. 'XYZ Company Zone A3' and 'XYZ Zone B1' are checked.
- Authority Category** (5): Three sub-sections:
 - Setup**: 'Master Floor Plan', 'Control Area (View mode only)', 'Control Area (Edit & View mode)', 'User Setup', 'Group Setup', and 'Visitor' are all checked.
 - Device Configuration**: 'Door Remote Open', 'PDU', 'Sensors', 'Fan', and 'MF T/H Sensors' are all checked.
 - System & Device Log**: 'User Activity', 'System Setup', 'MFP', 'Control Area', 'User', and 'User Group' are all checked.
- Time Access Setting for User Group:** (6) A dropdown menu is set to 'Working hours'.
- Applied to:** (7) 'Smart Card Access' is checked.
- Remote System Login** (8): This checkbox is unchecked.

At the bottom right, there are 'Save' and 'Cancel' buttons.

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

The screenshot shows the 'Add Visitor' window with the following fields and options:

- 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: [X]
- Walker: [X]
- XYZ Zone B1: [X]
- XYZ Company Zone A3: [X]
- ABC Company Zone A1: [X]
- ABC Company Zone A2: [X]
 - ☐ 13816811
 - ☐ Rack024
 - ☐ Rack025

Buttons: 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

System Setup

Backup

Backup File Path:
C:\RackMgt_v2\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
Restore File:
Upload

Alarm Setting
☒ Email alert
☐ Audio alert

Temperature unit
☒ Celsius(°C)
☐ Fahrenheit(°F)

Handle Setting
Door Overdue: 30 min(s).

Time Rule
Setup

Mail Server Setting

smtp host:
smtp.gmail.com
smtp port:
587
☒ smtp auth
smtp username:
infrsolutionx@gmail.com
smtp password:

smtp secure:
tls
Default mail from address:
infrsolutionx@gmail.com
Default mail from user name:
X-ISM Email ALARM

Audio Visual Alarm

Sensor Event	Buzzer	Beacon	Alarm out
S1 (T / TH 1) temp. / humid. alarm	☐	☐	☐
S2 (T / TH 2) temp. / humid. alarm	☐	☐	☐
S3 Smoke alarm	☐	☐	☐
S4 Shock alarm	☐	☐	☐
S5 (Water1) alarm	☐	☐	☐
S6 (Water2) alarm	☐	☐	☐

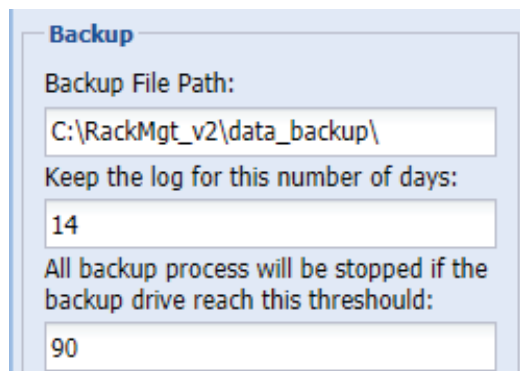
Save

< 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** ” *logbackdist* folder

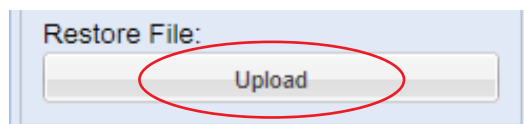
The system setup backup file will be saved in the “ **Backup File Path** ” *sysbackdist* folder

Restore



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

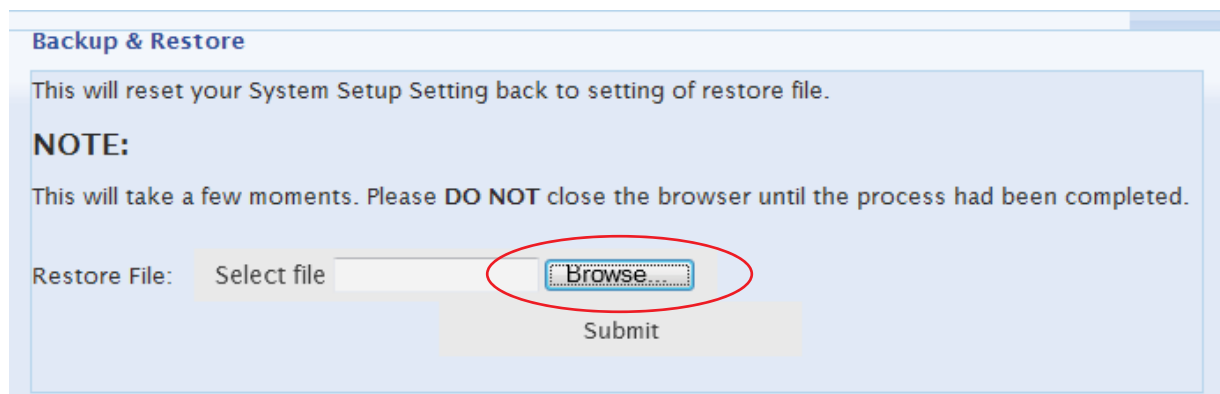
1. Click “ **Upload** ” button



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



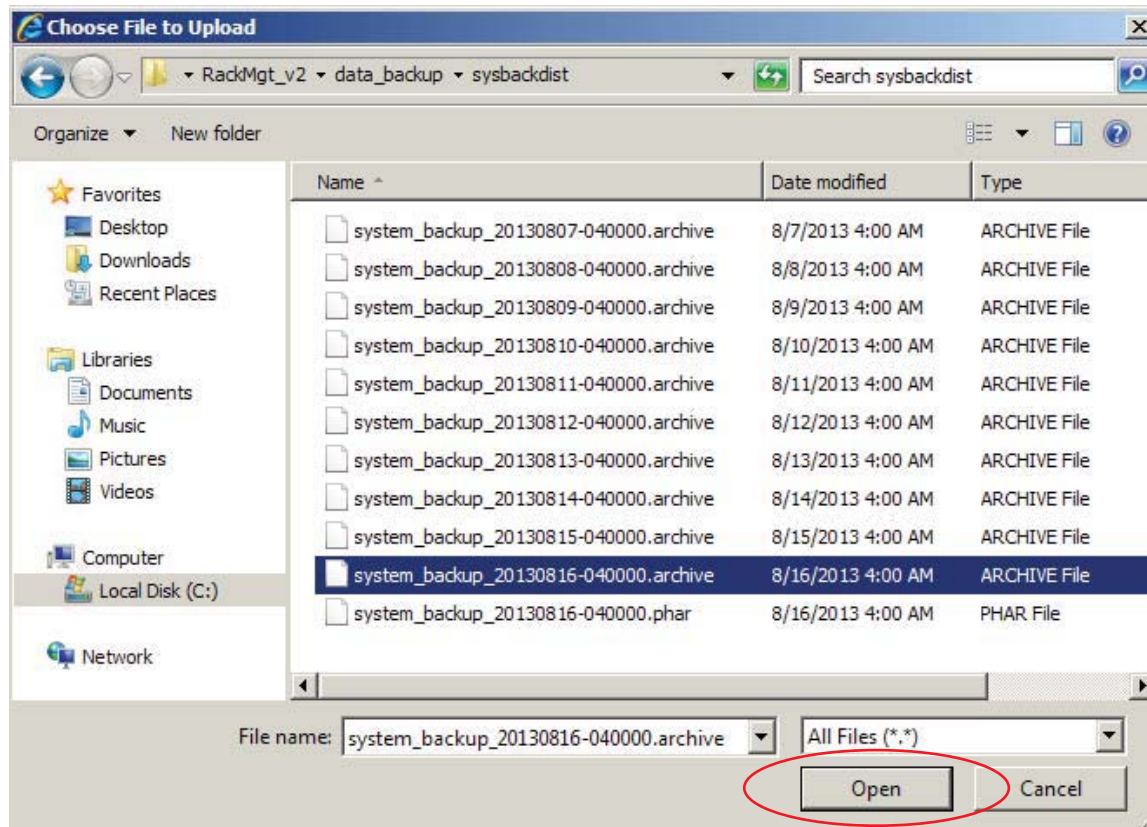
2. Click “ **Browse** ” to select the file you want to restore



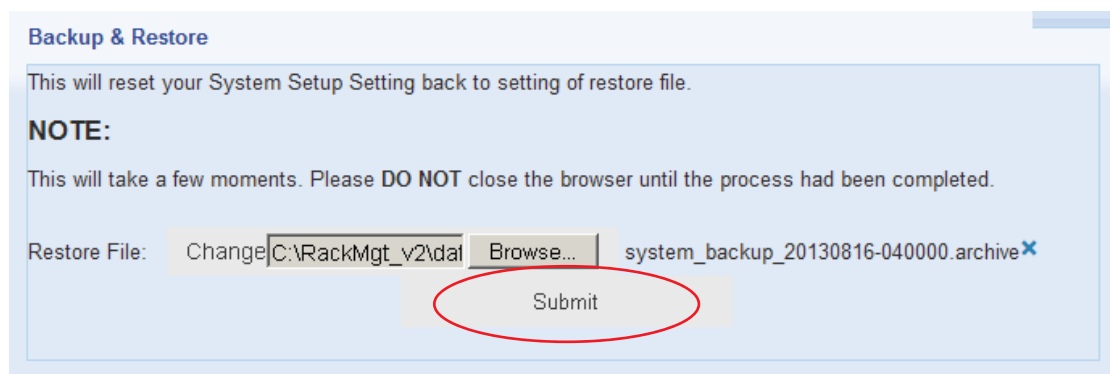
The screenshot shows the 'Backup & Restore' interface. It includes a message: 'This will reset your System Setup Setting back to setting of restore file.' followed by a 'NOTE:' section stating 'This will take a few moments. Please DO NOT close the browser until the process had been completed.' Below this, there is a 'Restore File:' section with a 'Select file' text input, a 'Browse' button (circled with a red oval), and 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	☐	☐	☐
S2 (T / TH 2) temp. / humid. alarm	☐	☐	☐
S3 Smoke alarm	☐	☐	☐
S4 Shock alarm	☐	☐	☐
S5 (Water1) alarm	☐	☐	☐
S6 (Water2) alarm	☐	☐	☐

< 11.3 > Temperature unit

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

Temperature unit

☒ Celsius(°C)

☐ Fahrenheit(°F)

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.

Handle Setting

Door Overdue: min(s).

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

Time Slot	☐	☐	☐	☐	☐	☐	☐
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
00:00 - 01:00	☐	☐	☐	☐	☐	☐	☐
00:00 - 00:15	☐	☐	☐	☐	☐	☐	☐
00:15 - 00:30	☐	☐	☐	☐	☐	☐	☐
00:30 - 00:45	☐	☐	☐	☐	☐	☐	☐
00:45 - 01:00	☐	☐	☐	☐	☐	☐	☐
01:00 - 02:00	☐	☐	☐	☐	☐	☐	☐
02:00 - 03:00	☐	☐	☐	☐	☐	☐	☐
03:00 - 04:00	☐	☐	☐	☐	☐	☐	☐
04:00 - 05:00	☐	☐	☐	☐	☐	☐	☐
05:00 - 06:00	☐	☐	☐	☐	☐	☐	☐
06:00 - 07:00	☐	☐	☐	☐	☐	☐	☐
07:00 - 08:00	☐	☐	☐	☐	☐	☐	☐
08:00 - 09:00	☐	☐	☐	☐	☐	☐	☐
09:00 - 10:00	☐	☐	☐	☐	☐	☐	☐
10:00 - 11:00	☐	☐	☐	☐	☐	☐	☐
11:00 - 12:00	☐	☐	☐	☐	☐	☐	☐
12:00 - 13:00	☐	☐	☐	☐	☐	☐	☐
13:00 - 14:00	☐	☐	☐	☐	☐	☐	☐
14:00 - 15:00	☐	☐	☐	☐	☐	☐	☐
15:00 - 16:00	☐	☐	☐	☐	☐	☐	☐

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 B1 - Rack 018

Cabinet

No.: 0018
Title: Rack 018
IP Address: 138.168.1.18

Alarm:
Audio Alarm: Disable
Email Alarm: Enable

T / H

Temp1 / Alarm: DISABLED
Humid1 / Alarm: DISABLED
Temp2 / Alarm: DISABLED
Humid2 / Alarm: DISABLED

Chart
Edit Apply

Fan

Fan 1-
Name:
Model:
Position:
Status:
CFM:
Temp/Alarm: Disable Fan Details Temp Settings

Fan 2-
Name:
Model:
Position:
Status:
CFM:
Temp/Alarm: Disable Fan Details Temp Settings

PDU

PDU 1-
Name:
Model:
Location:
Status:
Amp:
KWh:
TH1:
TH2: Disable PDU Details TH Status

PDU 2-
Name:
Model:
Location:
Status:
Amp:
KWh:
TH1:
TH2: Disable PDU Details TH Status

PDU 3-
Name:
Model:
Location:
Status:
Amp:
KWh:

Door

Front:
Status: Handle locked remotely, door close.
Last user: kenny
Opened: 2013-08-19 11:24:58
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 Apply

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

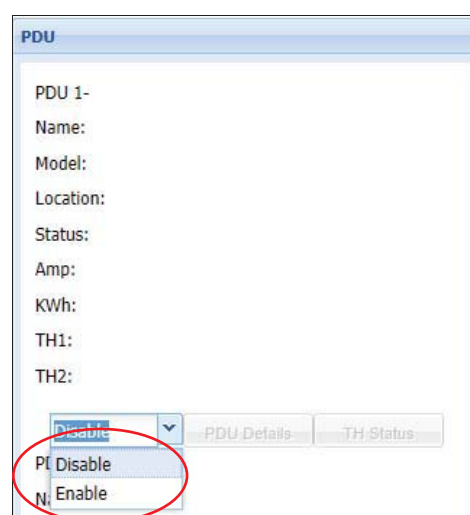
< 12.1 > Individual Cabinet Devices Enable & Disable

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



The screenshot shows the 'Sensors' configuration window. It contains several dropdown menus for different sensors: Water 1, Water 2, Smoke, Shock, LED1, LED2, Beacon, and Alarm out. The 'Water 2' dropdown is currently open, showing three options: 'Disable' (which is highlighted), 'Enable', and 'Disable'. At the bottom of the window, there are two buttons: 'View' and 'Apply'. The 'Apply' button is circled in red.

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

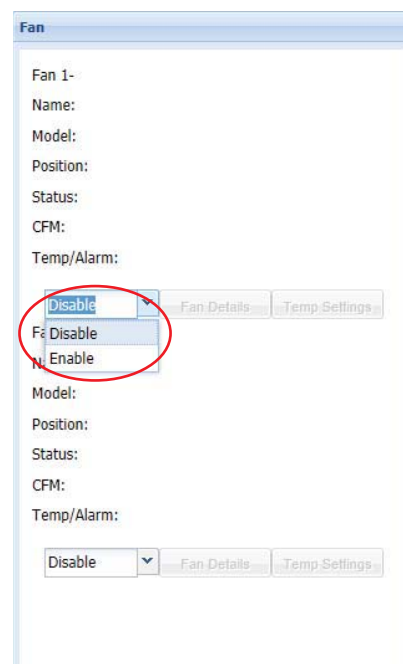


The screenshot shows the 'PDU' configuration window. It contains several fields: Name, Model, Location, Status, Amp, KWh, TH1, and TH2. At the bottom, there is a dropdown menu for 'PDU 1-'. This dropdown is open, showing three options: 'Disable' (which is highlighted), 'Enable', and 'Enable'. To the right of the dropdown are two buttons: 'PDU Details' and 'TH Status'. The 'Disable' option in the dropdown is circled in red.

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



The screenshot shows the 'Fan' configuration window. It contains several fields: Name, Model, Position, Status, CFM, and Temp/Alarm. At the bottom, there is a dropdown menu for 'Fan 1-'. This dropdown is open, showing three options: 'Disable' (which is highlighted), 'Enable', and 'Enable'. To the right of the dropdown are two buttons: 'Fan Details' and 'Temp Settings'. The 'Disable' option in the dropdown is circled in red.

< 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 B1 - Rack 018 - PDU Details

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

Status: Connected PDU load amp: 0.0

Name: Rack 18 23C13WSi Power Factor: 0.4

Location: Rack 18 23C13WSi 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 2013-08-15 11:12:24 Reset

kWh: 0.0 2013-08-07 14:03:55 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 2013-08-12 18:22:50 Reset

kWh: 0.0 2013-08-07 14:04:01 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)	Humd / Alarm (%)	Location	Temp / Alarm (°C)	Humd / 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 18#_C13WSi	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 B1 - 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: ---

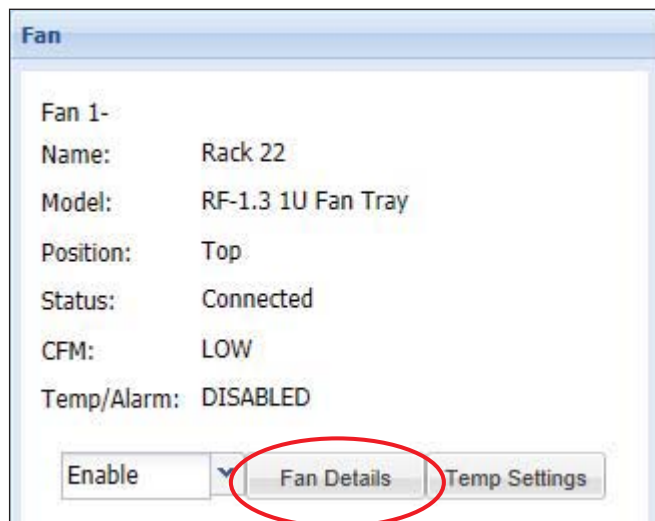
TH 2
 Status: ☒ Activate ☐ Deactivate
 Location: THSen_#2
 Alarm Setting: Temp. (°C): 35.0 Humid. (%): 65
 Reading: ---

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

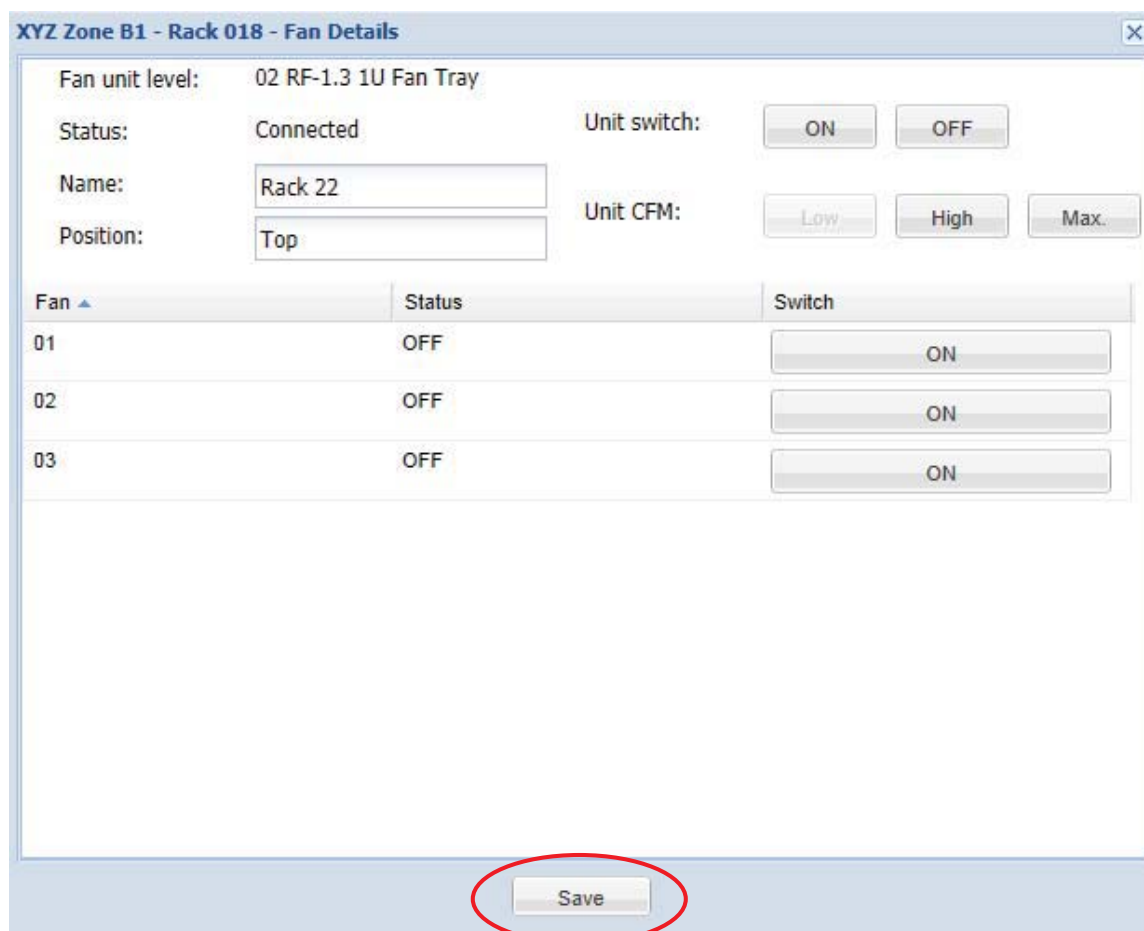
CFM: LOW

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

XYZ Zone B1 - Rack 018 - Temp Settings

Fan unit level:	02 RF-1.3 1U Fan Tray
Status:	Connected
Name:	Rack 22
Position:	Front_top

Temp. sensor

Status:	☒ Activative ☐ Deactivate
Position:	Front_top
Auto CFM Control:	☒ Enable ☐ Disable
Temp. (°C):	22.5
Alarm (°C):	99.9

- DO NOT activate temp. sensor if no sensor installed. Otherwise, temp. sensor disconnection event will be triggered.

- When install temp. sensor, please tick activate. Otherwise, no readings display.

- When temp. alarm triggers:

1. All individual fans will change to Max. speed if auto CFM is enabled.
2. If the temp. drops under the alarm temp. MINUS 2C with 10 mins, the buzzer will not sound.

Save

< 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 018(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

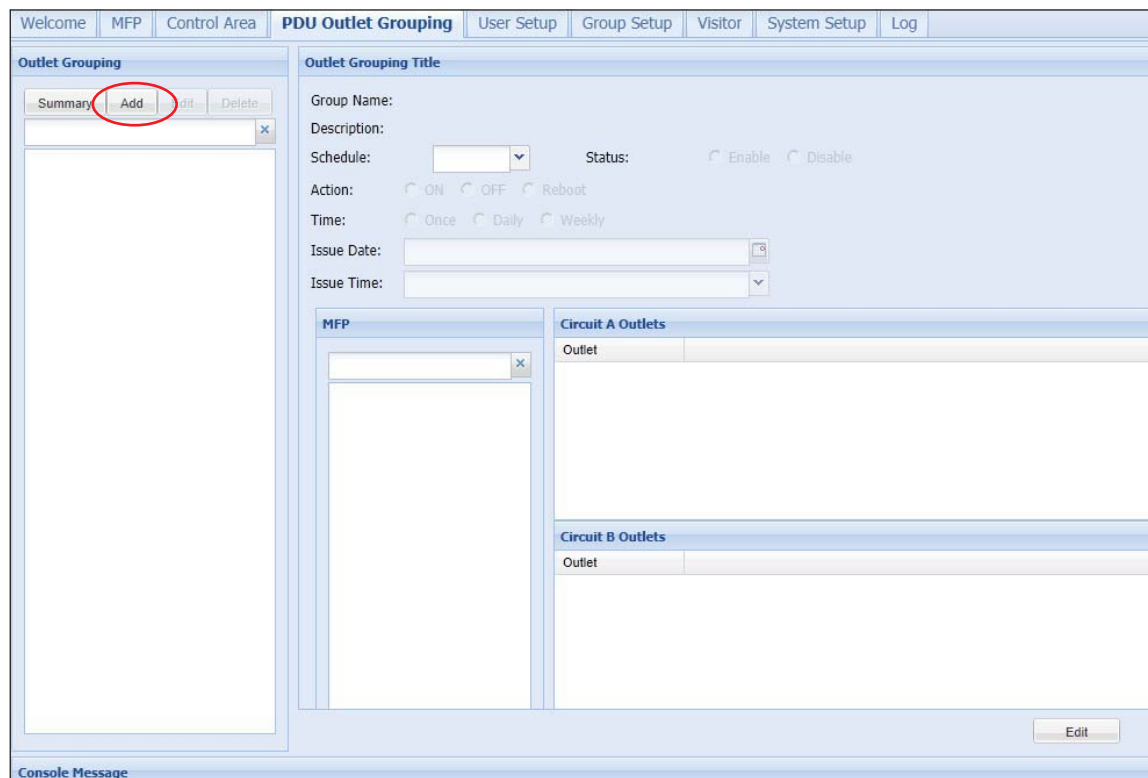


< 12.6 > PDU Outlet Grouping

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

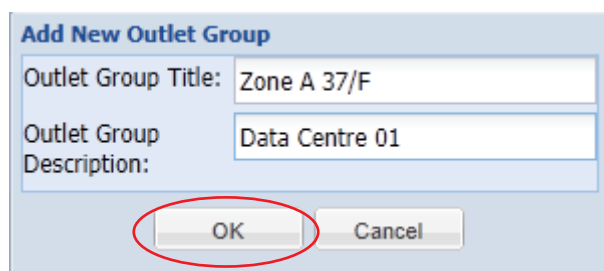
To add a PDU outlet grouping, please follow the steps below:

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



The screenshot shows the 'PDU Outlet Grouping' tab selected in the top navigation bar. On the left, the 'Outlet Grouping' panel has an 'Add' button circled in red. The main area contains a form for creating a new group with fields for 'Group Name', 'Description', 'Schedule' (a dropdown), 'Status' (radio buttons for 'Enable' and 'Disable'), 'Action' (radio buttons for 'ON', 'OFF', and 'Reboot'), 'Time' (radio buttons for 'Once', 'Daily', and 'Weekly'), 'Issue Date' (a date picker), and 'Issue Time' (a dropdown). Below the form are two panels: 'MFP' and 'Circuit A Outlets', each with an 'Outlet' table. A 'Circuit B Outlets' panel is also visible at the bottom. An 'Edit' button is located at the bottom right of the main area.

3. Input “ **Outlet Group Title** ” & “ **Outlet Group Description** ”
4. Click “ **OK** ” in “ **Add New Outlet Group** ” window to finish



The 'Add New Outlet Group' dialog box is shown. It has two 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, the 'OK' button is circled in red, next to a 'Cancel' button.

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

1. Select one of the outlet group
2. Click “ **Edit** ”

Outlet Grouping

Summary Add Edit Delete

Zone A 37/F

Zone A 37/F

Group Name: Zone A 37/F
 Description: Data Centre 01
 Schedule: 1 Status: ☐ Enable ☒ Disable
 Action: ☐ ON ☒ OFF ☐ Reboot
 Time: ☒ Once ☐ Daily ☐ Weekly
 Issue Date: 2013-01-03
 Issue Time: 00:00

MFP

Assigned List

Circuit A Outlets

Outlet

Circuit B Outlets

Outlet

Edit

Console Message

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: 1 Status: ☒ Enable ☐ Disable

Action: ☐ ON ☒ OFF ☐ Reboot

Time: ☒ Once ☐ Daily ☐ Weekly

Issue Date:

Issue Time:

once

Group Name:

Description:

Schedule: 1 Status: ☒ Enable ☐ Disable

Action: ☐ ON ☒ OFF ☐ Reboot

Time: ☐ Once ☒ Daily ☐ Weekly

Issue Time:

Daily

Group Name:

Description:

Schedule: 1 Status: ☒ Enable ☐ Disable

Action: ☐ ON ☒ OFF ☐ Reboot

Time: ☐ Once ☐ Daily ☒ Weekly

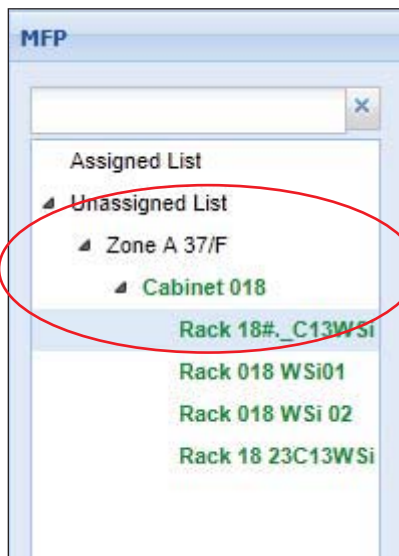
Issue Weekday:

Issue Time:

Weekly

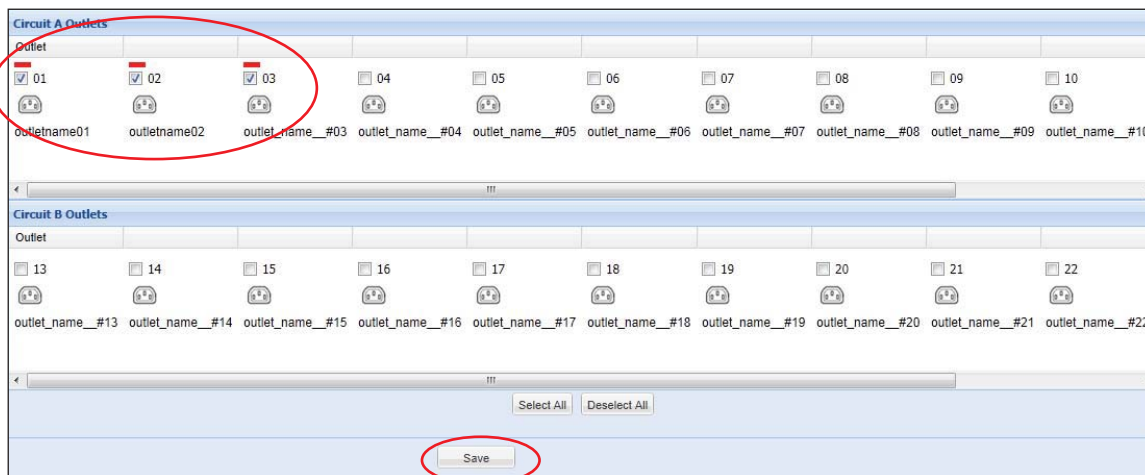
< 12.6 > PDU Outlet Grouping

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 displays the 'Log' tab interface. On the left is a sidebar with a tree view containing 'Device Event Log' (with sub-items: Cabinet, Door Access, Fan, PDU, Sensors, T / H Sensor) and 'System Event Log' (with sub-items: Console, Control Area, MFP, Outlet Grouping, System Setup, User, User Activity, User Group, Visitor). The 'Door Access Log' is selected. The main area has a 'Filter-Option' section with 'Date:' set to 'All', 'Specific Date' selected, and fields for 'Start Date & Time' and 'End Date & Time'. Below this are 'Print' and 'CSV' buttons, both circled in red. The main table has two columns: 'Event' and 'Description'. It lists 20 log entries for the date 2013-09-27, showing various door access events. The footer shows 'Page 1 of 10' and 'Displaying 1 - 20 of 189'.

Event	Description
2013-09-27 06:27:49 +08:00	In Cabinet 014(138.168.1.14), Rear Handle was locked by Auth card User 'kenny'-10803532
2013-09-27 06:27:49 +08:00	In Cabinet 014(138.168.1.14), Front Handle was locked by Auth card User 'kenny'-10803532
2013-09-27 06:27:43 +08:00	In Cabinet 014(138.168.1.14), Rear Handle was closed by Auth card by User 'kenny'-10803532
2013-09-27 06:27:39 +08:00	In Cabinet 014(138.168.1.14), Front Handle was closed by Auth card by User 'kenny'-10803532
2013-09-27 06:27:37 +08:00	In Cabinet 014(138.168.1.14), Rear Handle was opened by Auth card by User 'kenny'-10803532
2013-09-27 06:27:37 +08:00	In Cabinet 014(138.168.1.14), Front Handle was opened by Auth card by User 'kenny'-10803532
2013-09-27 06:27:31 +08:00	In Cabinet 014(138.168.1.14), Rear Handle was unlocked by Auth card by User 'kenny'-10803532
2013-09-27 06:27:31 +08:00	In Cabinet 014(138.168.1.14), Front Handle was unlocked by Auth card by User 'kenny'-10803532
2013-09-27 06:26:07 +08:00	In Cabinet 014(138.168.1.14), Rear Handle was opened by Auth card by User 'kenny'-10803532
2013-09-27 06:25:00 +08:00	In Cabinet 014(138.168.1.14), Front Handle was opened by Auth card by User 'kenny'-10803532
2013-09-27 06:21:48 +08:00	In Cabinet 014(138.168.1.14), Rear Handle was unlocked by Auth card by User 'kenny'-10803532
2013-09-27 06:21:48 +08:00	In Cabinet 014(138.168.1.14), Front Handle was unlocked by Auth card by User 'kenny'-10803532
2013-09-27 06:21:22 +08:00	In Cabinet 014(138.168.1.14), Rear Handle was opened by Auth card by User 'kenny'-10803532
2013-09-27 06:21:22 +08:00	In Cabinet 014(138.168.1.14), Front Handle was opened by Auth card by User 'kenny'-10803532
2013-09-27 06:20:13 +08:00	In Cabinet 014(138.168.1.14), Rear Handle was unlocked by Auth card by User 'kenny'-10803532
2013-09-27 06:20:13 +08:00	In Cabinet 014(138.168.1.14), Front Handle was unlocked by Auth card by User 'kenny'-10803532
2013-09-27 06:19:48 +08:00	In Cabinet 014(138.168.1.14), Rear Handle was opened by Auth card by User 'kenny'-10803532
2013-09-27 06:19:48 +08:00	In Cabinet 014(138.168.1.14), Front Handle was opened by Auth card by User 'kenny'-10803532
2013-09-27 06:19:09 +08:00	In Cabinet 014(138.168.1.14), Rear Handle was unlocked by Auth card by User 'kenny'-10803532
2013-09-27 06:19:09 +08:00	In Cabinet 014(138.168.1.14), Front Handle was unlocked by Auth card by User 'kenny'-10803532

< 13.1 > SNMP

(I). Accessing MIB Files

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

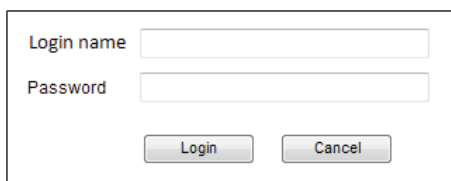
<http://www.austin-hughes.com/support/utilities/infrasolutionX/X-ISM-MIB.mib>

(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** ”

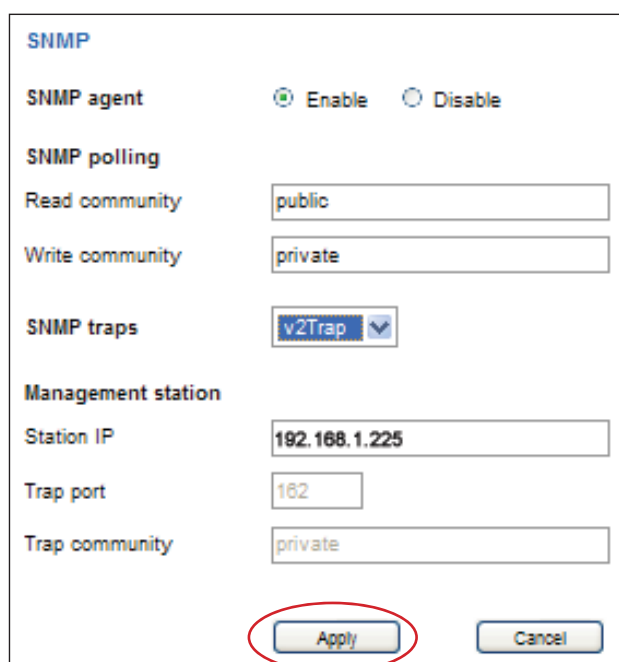
4. Enter “ **Login name** ” & “ **Password** ”.
Default login name & password are “ **00000000** ”



Login name

Password

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



SNMP

SNMP agent ☒ Enable ☐ Disable

SNMP polling

Read community

Write community

SNMP traps ▼

Management station

Station IP

Trap port

Trap community

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

3. How can I get a further support?

Please send an email to support@austin-hughes.com or 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.

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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