

# **User Manual**

# **IGM-03** Environmental Sensor Management Software



Designed and manufactured by Austin Hughes

FC (E REACH

UM-IGM-03-Q415V2 www.austin-hughes.com

### **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 dam age 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 labelled 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 dam aged 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.
  - $\hfill \square$  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.
  - $\hfill \square$  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:

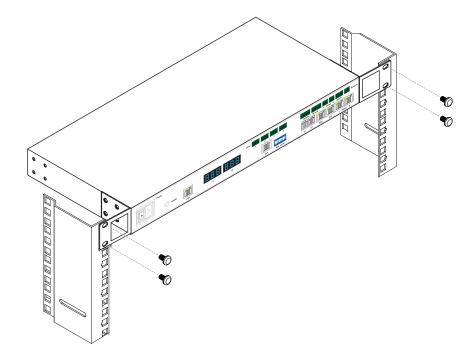
- Re-position or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

### **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 rack.
- 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.

## **EC Box Installation**

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



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## Part I. Hardware

# < 1.1 > Package Contents

# Unpacking

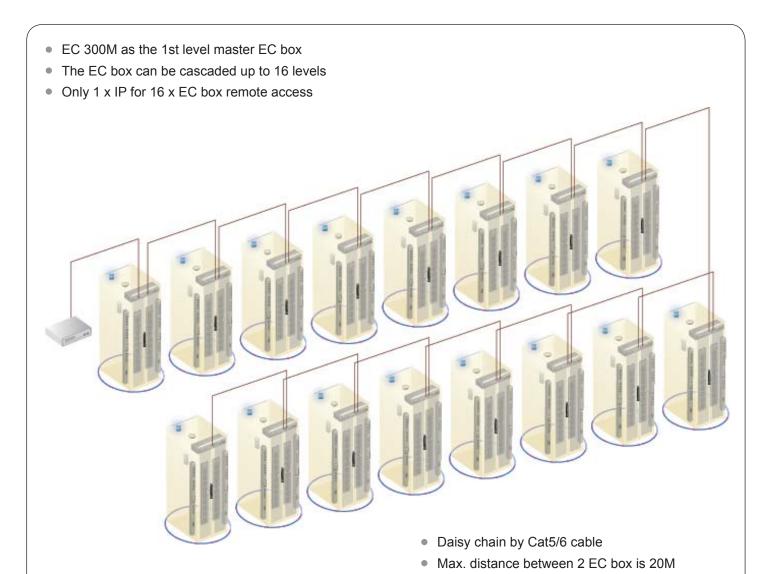
The equipment comes with the standard parts shown on the package contents. Check and make sure they are included and in good condition. If anything is missing, or damage, contact the supplier immediately.



# < 1.2 > InfraGuard Features & Specifications

	EC-300M ( Master Box )	EC-300 ( Slave Box )
Daisy Chain SNMP LAN Port Daisy Chain Port - LINK Daisy Chain Port - OUT Dual Power Input Option Temperature LED	1st Level	2nd - 16th Level via Master Box
Temp-Humid Sensor Smoke / Shock Sensor Water Sensor Door Sensor LED Light Bar LED Flashing Beacon Alarm Board Integrated PDU Integrated Fan Unit	2 2 4 2 1 1 4 ( daisy chain ) 4 ( daisy chain )	2 2 4 2 1 1 4 ( daisy chain ) 4 ( daisy chain )
Product Dimension (WxDxH) Packing Dimension (WxDxH) Net Weight Gross Weight Power Consumption Operating Temperature Storage Temperature Relative Humidity Mounting Safety Regulatory Environmental	400 x 135 x 39.7 mm / 15.7 x 5.3 x 1.6 inch 557 x 367 x 98 mm / 21.9 x 14.4 x 3.9 inch 1.06 kgs / 2.3 lbs 2.2 kgs / 4.8 lbs Auto-sensing 100 to 240VAC, 50 / 60Hz, Max. 48 Wa 0 to 55°C Degree -5 to 60°C Degree 5~90%, non-condensing 1U Rackmount FCC & CE certified RoHS & REACH compliant	

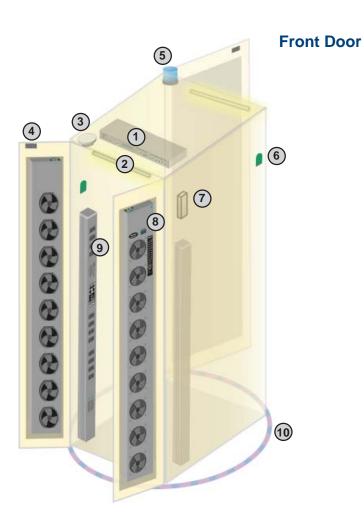
# < 1.3 > Daisy Chain Group



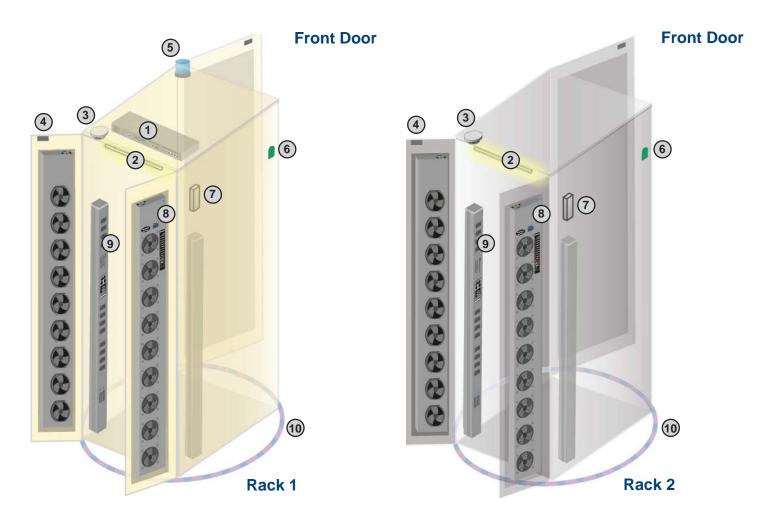


- One InfraGuard network can expand up to 30 daisy chain groups ( master IP group ).
- Each daisy chain group supports up to 16 EC Boxes
- Each InfraGuard network can monitor 480 EC Boxes
- Each EC Box supports PDU x 4 & fan unit x 4
- Up to 1920 PDUs & 1920 fan units can be installed under one InfraGuard network

Max. distance in a daisy chain group up to 300M



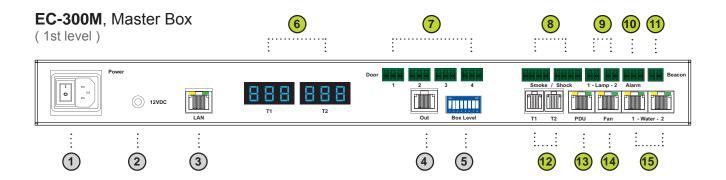
	Item	Qty.	Location
1	EC Box	1	rackmount on rear top
2	LED Light Bar	2	front & rear top inside
3	Smoke Sensor	1	rear inside top
4	Door Sensor	2	top corner of door
5	Flashing LED Beacon	1	front rack roof
6	Temp. & Humid. Sensor	2	any inside position
7	Shock Sensor	1	upper inside
8	Fan Unit	4	door mount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



 $^{*}$  either smoke sensor or shock sensor

	Item	Rack 1	Rack 2
1	EC Box	1	-
2	LED Light Bar	1	1
3	Smoke Sensor	1 *	1 *
4	Door Sensor	2	2
5	Flashing LED Beacon	1	-
6	Temp. & Humid. Sensor	1	1
7	Shock Sensor	1 *	1 *
8	Fan Unit	2	2
9	PDU	2	2
10	Water Sensor	1	1

#### < 1.4 > EC Box

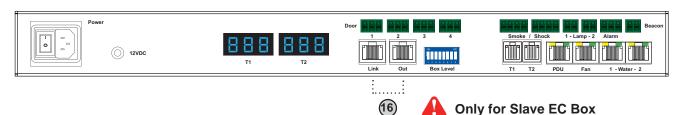


- 1 Power input
- 2 Dual power input ( option )
- 3 LAN port (RJ-45 connect to network device)
- 4 OUT port (RJ-45 connect to level 2nd slave EC box)
- **5** Dip switch (level setting)

- 6 Temp. LED display x 2
- Door sensor port x 4
- 8 Smoke / Shock sensor port x 2
- 9 LED Light Bar port x 2
- 10 Port for 3rd party alarm board x 1
- 11 LED beacon port x 1
- 12 Temp. & Humid. sensor port x 2
- PDU port x 1
  ( RJ-45, up to PDU daisy chain level x 4 )
- Fan unit port x 1
  (RJ-45, up to fan unit daisy chain level x 4)
- Water sensor port x 2

# EC-300, Slave Box

(From 2nd - 16th level)

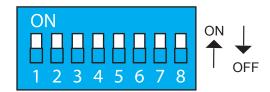


Link & Out port
(RJ-45 for daisy chain connection)

# < 1.5 > EC Box Level Setting

## Steps:

- Only Master EC Box built-in IP remote access module.
- Master EC Box MUST be set on the 1st daisy chain level according to the table below.
- For the 2nd 16th levels ( slave EC box ), please make the level setting according to the table below.
- For the cabling connection, please refer to the next page.



# Daisy chain level setting

Using the dip switch no. 1, 2, 3, & 4 to setup each EC box level level as below :

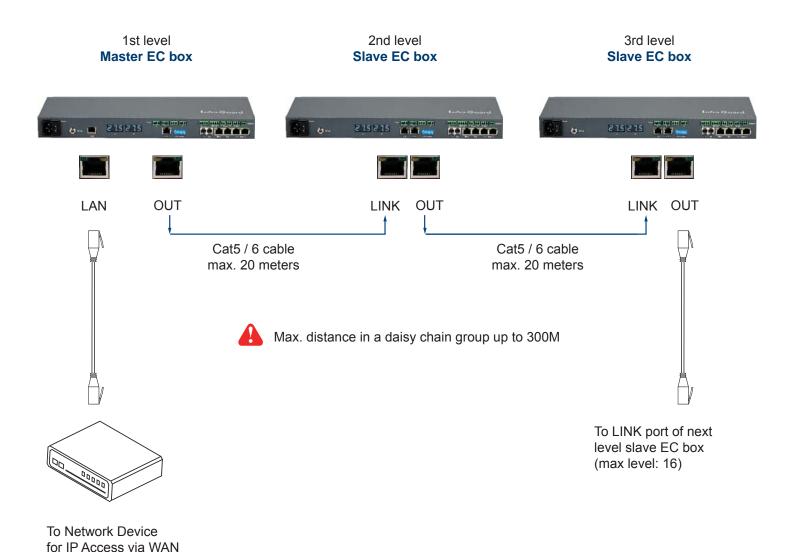
Cascaded EC boxes				Dip sw	itch no.			
	1	2	3	4	5	6	7	8
1st level <b>Master</b> EC box	On	On	On	On	Off	Off	Off	Off
2nd level Slave EC box	Off	On	On	On	Off	Off	Off	Off
3rd level Slave EC box	On	Off	On	On	Off	Off	Off	Off
4th level Slave EC box	Off	Off	On	On	Off	Off	Off	Off
5th level Slave EC box	On	On	Off	On	Off	Off	Off	Off
6th level Slave EC box	Off	On	Off	On	Off	Off	Off	Off
7th level Slave EC box	On	Off	Off	On	Off	Off	Off	Off
8th level Slave EC box	Off	Off	Off	On	Off	Off	Off	Off
9th level Slave EC box	On	On	On	Off	Off	Off	Off	Off
10th level Slave EC box	Off	On	On	Off	Off	Off	Off	Off
11th level Slave EC box	On	Off	On	Off	Off	Off	Off	Off
12th level Slave EC box	Off	Off	On	Off	Off	Off	Off	Off
13th level Slave EC box	On	On	Off	Off	Off	Off	Off	Off
14th level Slave EC box	Off	On	Off	Off	Off	Off	Off	Off
15th level Slave EC box	On	Off	Off	Off	Off	Off	Off	Off
16th level Slave EC box	Off	Off	Off	Off	Off	Off	Off	Off

<sup>\*\*</sup> No. 5, 6, 7 & 8 dip switch reserved

# < 1.6 > EC Box Daisy Chain

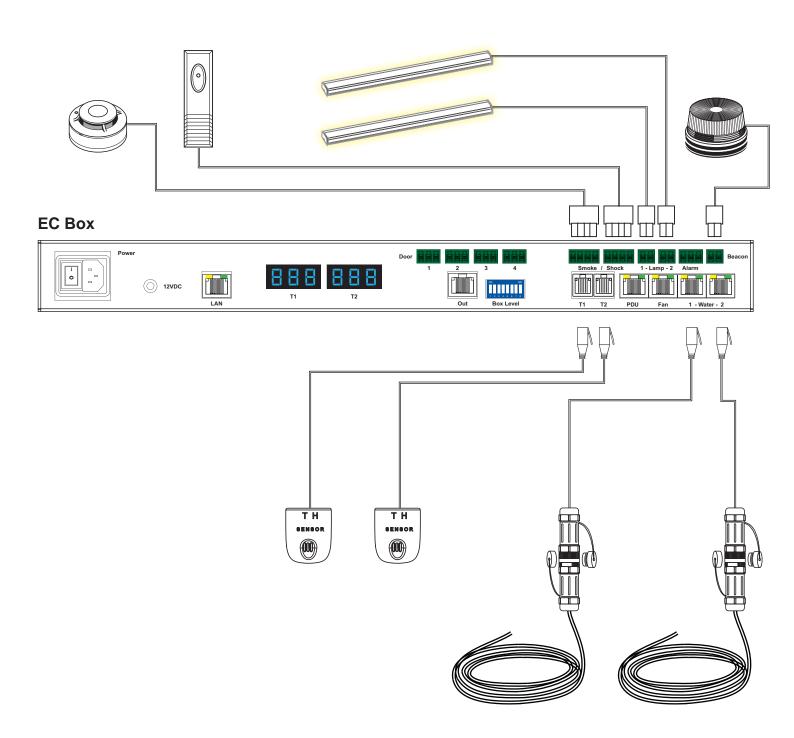
#### Remarks:

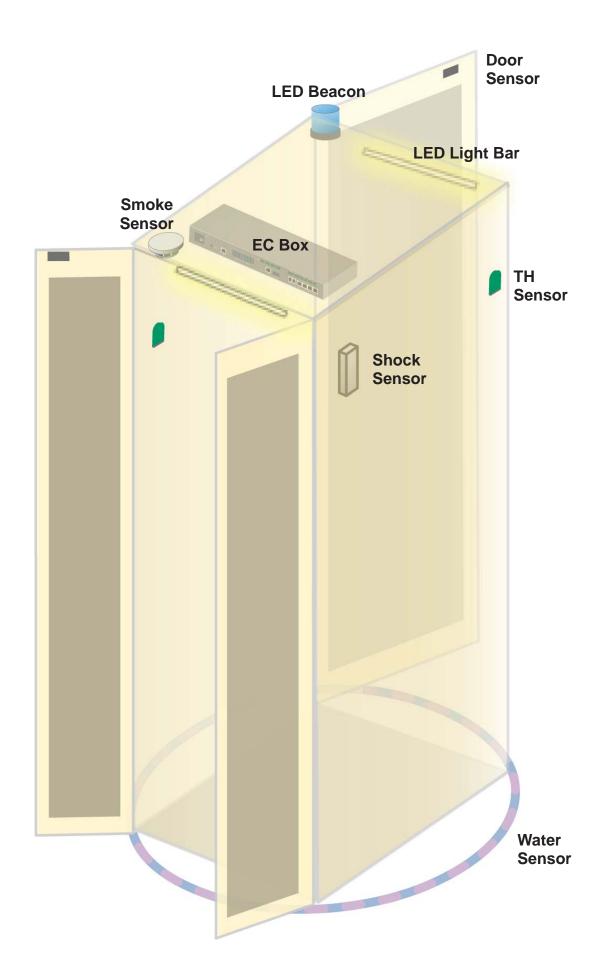
- Each Master IP group supports 16 daisy chain levels.
- The 1st level EC box must be Master EC box.
- 1 x Master EC box allows access to 16 levels.
- For remote access of EC boxes, simply connect 1 x Master EC box.
- The 2nd 16th level EC boxes must be slave EC box.



# Part II. Sensor Installation & Specifications

# < 2.1 > Overview









		Inductive Door Sensor	Mechanical Door Sensor	
Part no.		IG-DSI-2M	IG-DSW-2M	
Sensitivity	Actuation	/	3.00 mm	
	Travelling Distance	/	9.25 mm	
	Operating Force	/	3.5±1 N	
	Sensing distance	Max. 3mm	/	
	Sensing object	Ferrous metal	1	
	_			
Power Requirement	Voltage	12VDC, powered by sensor port	1	
	Current Consumption	100mA	1	
	_			
Housing	Material	Plas	tic	
	Color	Blad	ck	
	_			
Connection	Cable Length	sensor w/ 2m cal	ble ( standard )	
		sensor w/ 4m c	able ( option )	
Environmental	Operating	20 to 60°C	2 Dograd	
Environmental	Operating	-20 to 60°C		
	Storage	-20 to 60°C Degree	-30 to 70°C Degree	
	Relative Humidity	5~90%, non-	condensing	
Dimensions			52W x 22.5L mm	
Dilliensions	Product	32.5L x 12.2W x 9.2H mm	( with metal plate )	
	Packing	/	1	
Weight	Net / Gross	6g	14g ( with metal plate )	
Supply includes	1	Inductive door sensor	Mechanical door sensor	
		with 2m cable		
	2	2mm Adhesive tape	Metal plate	
	3	l	2m cable	
0	•			
Compatibility		InfraGuard only		
Safety Regulatory	FCC & CE certified			
	•			
Environmental	RoHS2 & REACH compliant			

## < 2.2 > Door Sensor

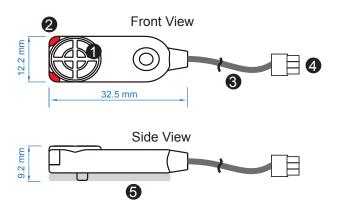
Optional door sensor is an essential accessories as users can be alerted by visual and audio alarm for unauthorized access.

## Inductive Door Sensor, pair ( IG-DSI-2M)

#### **Features**

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





0	Sensor area
2	Red LED ( light up while door opening )
3	2m cable
4	Cable jack ( connect to EC box )
6	2mm adhesive tape

#### Package content

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



# Requirements 4



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

# **Installation steps**

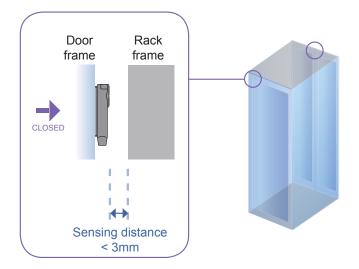
- connect to the EC box
- guide & fix the cable with cable clips
- place the sensor at the top of the door, close to the opening side
- adjust the sensor with adhesive tape to ensure the sensing distance between door to frame within 3mm while door in close status



## **Sensor Operation**

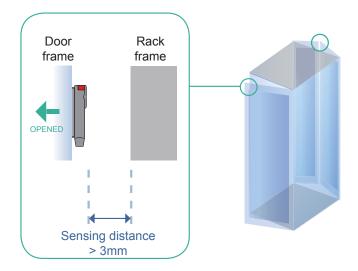
#### **DOOR CLOSE**

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



#### **DOOR OPEN**

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

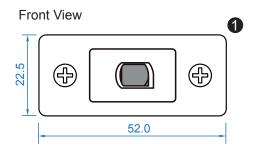


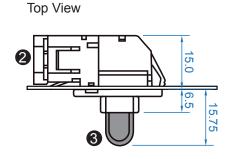
## Mechanical Door Sensor ( IG-DSW-2M)

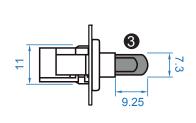
#### **Features**

- low cost / precise
- · cost efficient integration to new rack

unit: mm







Side View

- 1 Steel mounting plate with 2 screw holes
- Cable connector
- 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

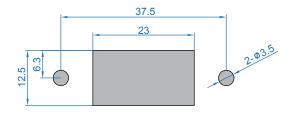


### **Requirements**



- 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



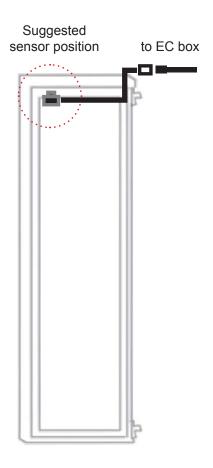
#### Dimension of door cutting hole

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

### < 2.2 > Door Sensor

## **Installation steps**

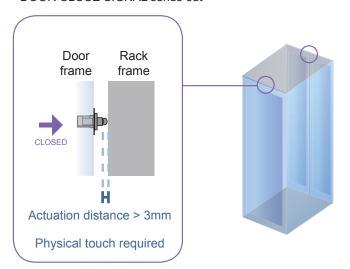
- connect to the EC box
- place the sensor at the top middle of the door
- install the sensor in the custom hole
- secure it with bundled mounting screws 6#32x4.5mm x 2



## **Sensor Operation**

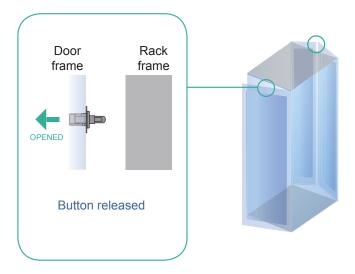
## DOOR CLOSE

- 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



# < 2.3 > Temp. & Humidity Sensor

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

			RoHS RIZOT		
		Temp. & Humid. Sensor	Temp. Sensor		
Part no.		IG-TH01	IG-T01		
Temperature	Range	0 to 80°C ( 32 to 176°F )			
Sensitivity	Accuracy	±0.5°C typical (±1°F)	±1°C ( ±2°F)		
	Resolution	0.1°C (	· ,		
	Response Time	5 to 30	sec		
Relative	Range	0 to 100% R.H			
Humidity	Accuracy	0 to 100, ±8.0% R.H			
Sensitivity		20 to 80, ±4.5% R.H.	1		
	Resolution	1% R.H.			
	Response Time	8 sec	1		
Power	Voltage	12VDC, powered	by sensor port		
Requirement	Current Consumption	20m	nA		
	Power consumption	0.24 V	Vatt		
	Power on indicator	Red	Green		
Housing	Chassis & Cover	Plas	tic		
	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 3.5m	nm 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	x 18H mm		
Weight	Net	666	n		
	1101		9		
Supply includes	1	TH Sensor	Temperature Sensor		
	2	4-wired 3.5mm to RJ11 c	able ( 2m, black color )		
Compatibility	InfraPower	W / WS / Wi / WSi series PDU			
	InfraSolution	X-2000	series		
	InfraGuard	EC-300M 8	& EC-300		
Safety Regulatory		FCC & CE certified			
Environmental		RoHS2 & REACH complian	nt		
	RoHS2 & REACH compliant				

## < 2.4 > Smoke Sensor

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



		Smoke Sensor	
Part no.		IG-S01	
Sensitivity	Smoke sensitivity	0.15 ~ 0.3 dB/m	
	0 1110/ / D 1		
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	
Harratan	Oharaia A Oassa	400 + #	
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		

# < 2.5 > Shock Sensor

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



Part no.   IG-V01			Shock Sensor
Adjustable sensitivity  Internal micro knob with screwdriver cross  Solid State Relay Alarm Output Solid State Relay Alarm hold time Approx. 2.0 sec. Alarm LED Red  Power Requirement Current Consumption Power consumption ABS plastic Color ABS plastic Color  Cable Length Approx. 2.0 sec. Alarm LED Red  12VDC, powered by sensor port ABS plastic Color White  Connection Cable Length ABS plastic Connection Cable Length Am / 3m (option)  Environmental Operating Storage -10 to 60°C Degree Humidity  Dimensions  Product ABS plastic Connection  Storage -10 to 60°C Degree Aumidity  Dimensions  Product ABS plastic ABS plastic Connection  Storage -10 to 60°C Degree Aumidity  Shock Sensor with 1m cable  Compatibility InfraSolution InfraGuard EC-300M & EC-300	Part no.		IG-V01
Adjustable sensitivity  Internal micro knob with screwdriver cross  Solid State Relay Alarm Output Solid State Relay Alarm LED Red  Power Requirement Voltage Current Consumption Power consumption O.18 Watt  Color Alarm Lend Connection Cable Length Abs plastic Connection Abs plastic Abs plas	Sensitivity	Detection radius	3.5 m
Alarm hold time		Adjustable sensitivity	Internal micro knob with screwdriver cross slot
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  Veight Net 40g  Supply includes 1 Shock Sensor with 1m cable  Compatibility InfraSolution X-2000 series InfraGuard EC-300M & EC-300	Alarm Output	Solid State Relay	12VDC@100mA
Alarm LED   Red			-
Current Consumption Power consumption O.18 Watt  Color		Alarm LED	**
Current Consumption Power consumption O.18 Watt  Clousing Chassis & Cover Color Color Cable Length Operating Storage Humidity Connection Cable Length Operating Storage Humidity Operating	ower Requirement	Voltage	12VDC, powered by sensor port
Chassis & Cover		Current Consumption	
Color		Power consumption	0.18 Watt
Color	lousing	Chassis & Cover	ABS plastic
Operating		Color	<u> </u>
Storage	connection	Cable Length	1m / 3m ( option )
Storage	un dina non a natal	On posting	5.4. 55°0 D
Humidity 5~90%, non-condensing  Product 26 x 85 x 24 mm  Veight Net 40g  Supply includes 1 Shock Sensor with 1m cable  Compatibility InfraSolution X-2000 series InfraGuard EC-300M & EC-300	invironinientai		
Veight Net 40g  Supply includes 1 Shock Sensor with 1m cable  Compatibility InfraSolution X-2000 series InfraGuard EC-300M & EC-300			<u> </u>
Veight Net 40g  Supply includes 1 Shock Sensor with 1m cable  Compatibility InfraSolution X-2000 series InfraGuard EC-300M & EC-300	limonojono	Draduct	26 v 95 v 94 mm
Shock Sensor with 1m cable  Compatibility  InfraSolution  InfraGuard  Shock Sensor with 1m cable  X-2000 series  EC-300M & EC-300	olinensions	Product	20 X 80 X 24 IIIII
InfraSolution X-2000 series InfraGuard EC-300M & EC-300	Veight	Net	40g
InfraGuard EC-300M & EC-300	Supply includes	1	Shock Sensor with 1m cable
InfraGuard EC-300M & EC-300	Compatibility	InfraSolution	X-2000 series
Safety Regulatory FCC & CE certified			
	Safety Regulatory_		FCC & CE certified
Environmental RoHS2 & REACH compliant			

# < 2.6 > Water Sensor



		Water Sensor	
Part no.		IG-W01	
	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	

# < 2.7 > LED Light Bar

LED light bar can be ON / OFF by door sensor OR always ON by IGM-03 management software setting.



		LED Light Bar	
Part no.		CLB-IX-002	
_ight	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	
	1		
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 )	
Environmental Environmental	On a ratio s	20 to 50°C Domino	
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	
Veight	Net	84g	
		<u>-</u>	
Compatibility	InfraSolution	X-2000 series	
	InfraGuard	EC-300M & EC-300	
Safety Regulatory		FCC & CE certified	
		D 1100 0 DE1011	
Environmental		RoHS2 & REACH compliant	

# < 2.8 > LED Beacon

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



		LED Beacon	
Part no.		IG-FB03	
Notification	Len Color	Blue	
	Light Source	White	
	Flash Rate	120 flashes per minute	
Power Requirement	Voltage	12VDC, powered by sensor port	
1 ower Requirement	Current Consumption	0.175A	
	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	701 v 701M v 4511 mm	
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	D-LIOO & DEAGLE 11 /		
Liivii Oliillelitai	RoHS2 & REACH compliant		

# Part III. PDU / Fan Unit Installation & Specifications

#### < 3.1 > PDU

Under an **InfraGuard** network, each EC Box 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

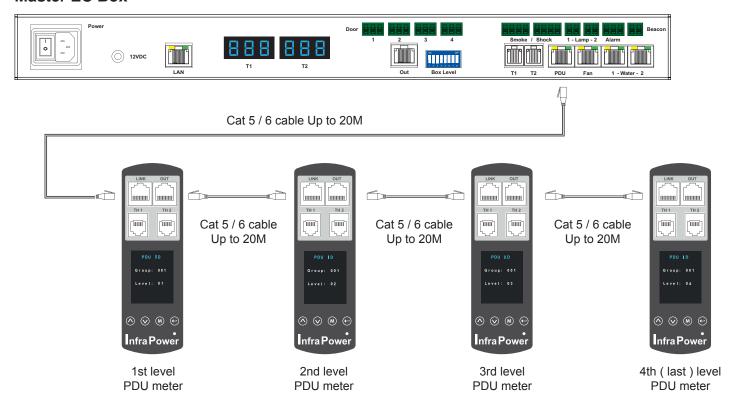
WSi series: outlet level measurement switched PDU



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

#### **Master EC Box**



4

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

### PDU level setting:





Step 1 - Press the 🔨 & 👽 button to display no.9 and press (M) to confirm

Step 2 - Press the 🔨 & 👽 button to PDU ID and press (M) to confirm

Step 3 - In display 9.1, Press the ( ) & ( ) button to select PDU level no. & press ( M ) to confirm

Step 4 - Press ← to exit

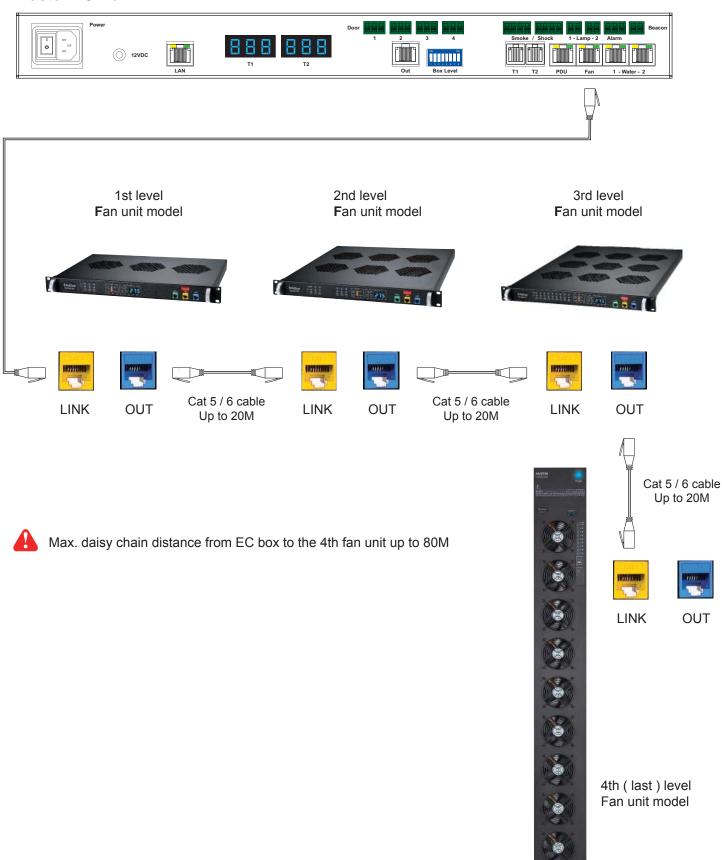


For details about PDU level setting, please refer to IPM-03 user manual < 3.1 > : http://www.austin-hughes.com/support/usermanual/infrapower/UM-IPM-03.pdf

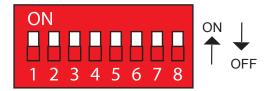
### < 3.2 > Fan Unit

Under an **InfraGuard** network, each EC Box supports **InfraCool** remote fan unit x 4 in a daisy chain. Each fan unit comes with TEMP. sensor port x 1

#### **Master EC Box**



### < 3.2 > Fan Unit



## Fan unit level setting:

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

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

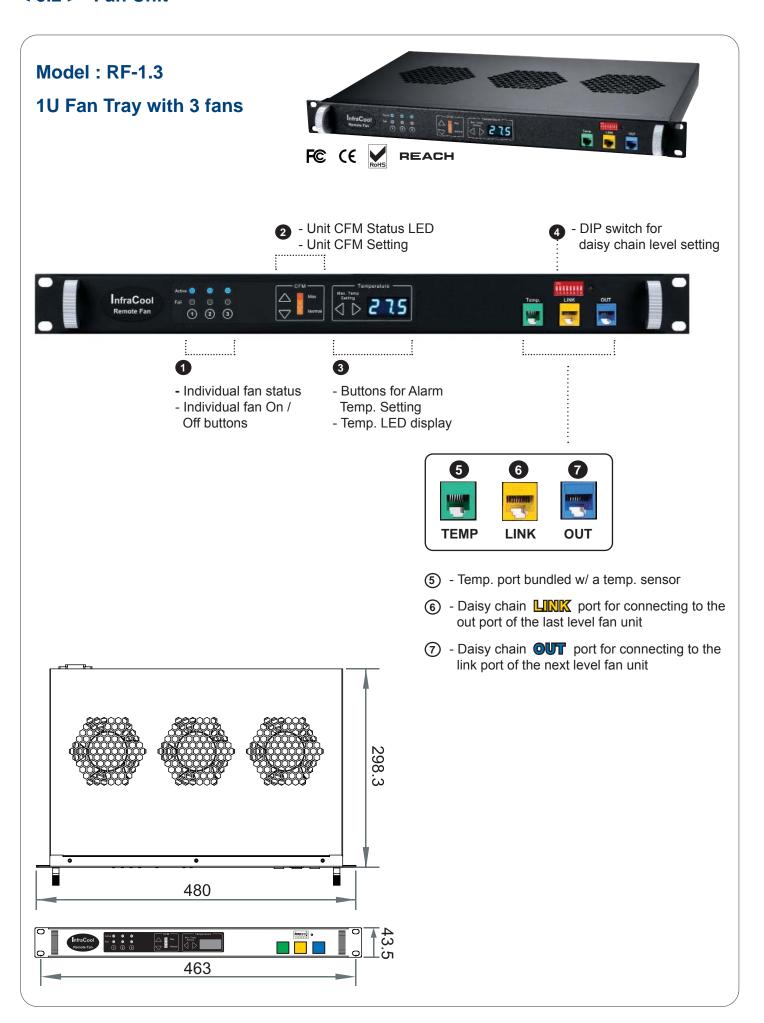
<sup>\*\*</sup> No. 7 dip switch only for audio alarm setting

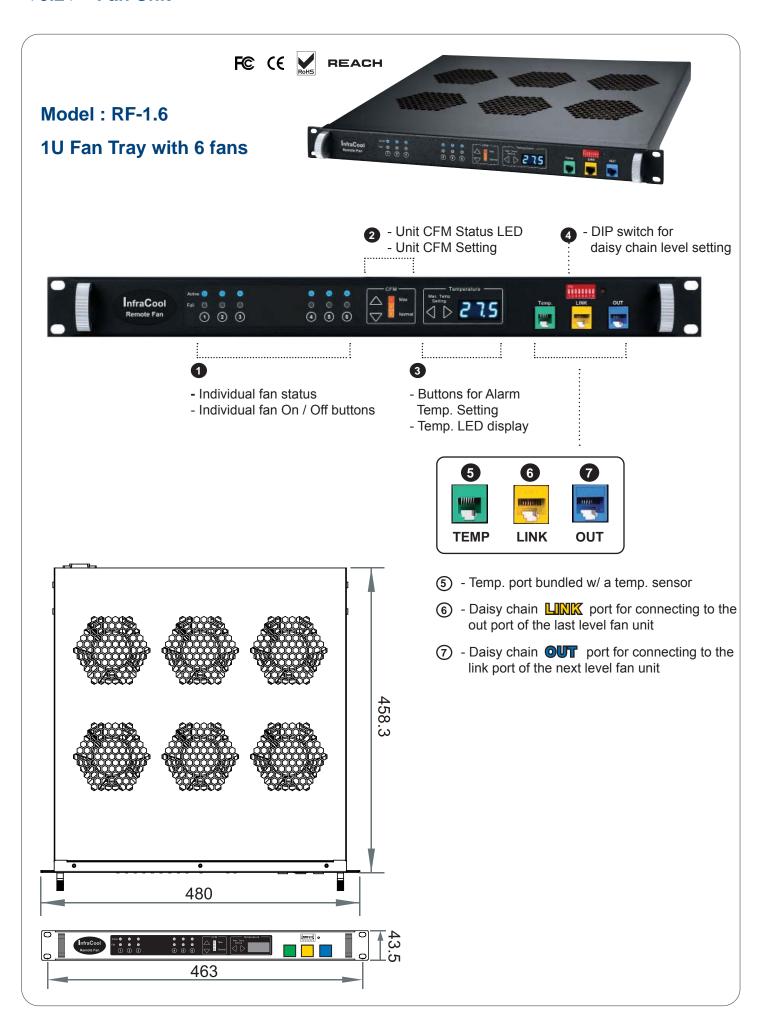
Using the dip switch no. 7 to setup each FAN unit audio alarm as below:

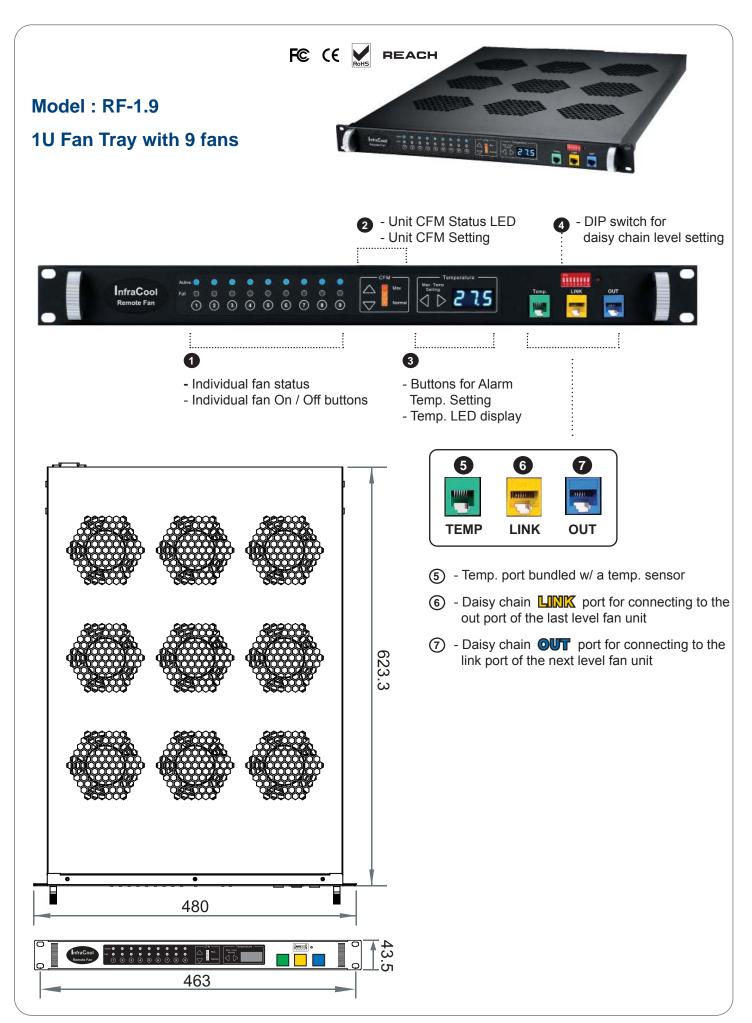
	Dip switch 7		
Enable	On		
Disable	Off		

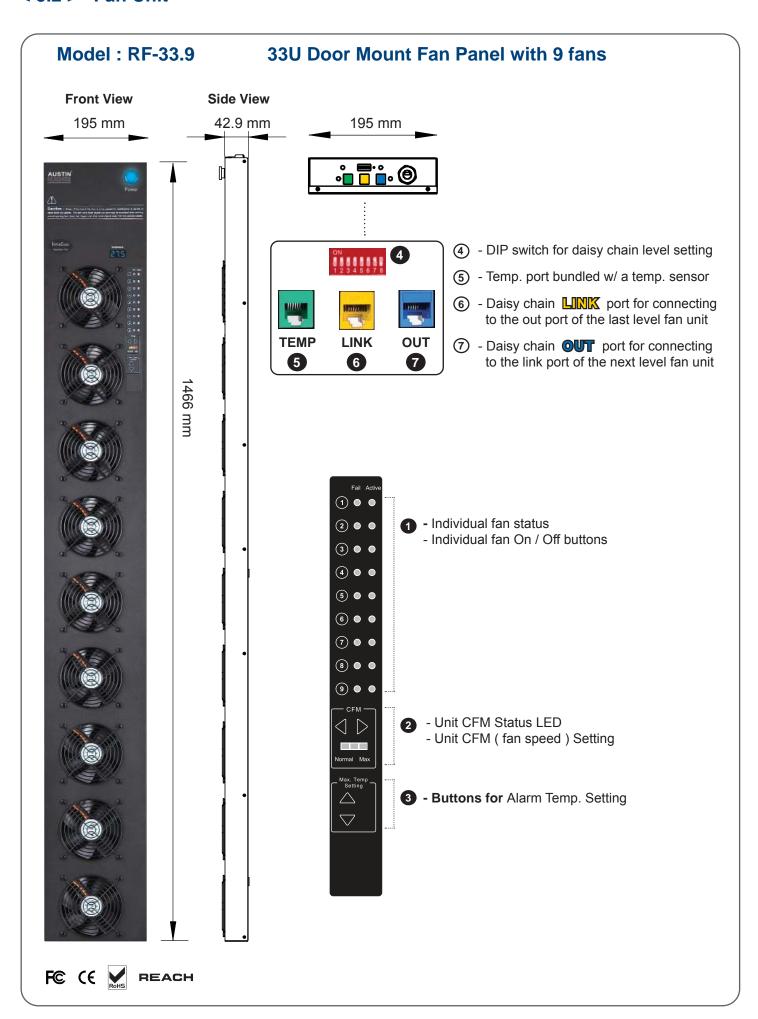


If enable the audio alarm, the buzzer will sound when the outside temperature is over the preset alarm temperature.









# < 3.2 > Fan Unit

Remote Fan	Model	RF-1.3 / 1.6 / 1.9	RF-33.9		
Kemote i an	No. of Fan	3 / 6 / 9	9		
	Mounting	1U Door mount			
	CFM Level	Normal / High / Max.			
	Individual Fan ON / OFF	Yes			
	Individual Fan CFM	108	CFM		
	Unit CFM (Approximately)	324 / 648 / 972 CFM	972 CFM		
	IP Remote Access	Not available, must be via Master IP fan on the 1s			
	Daisy Chain Level	2nd to 16th level			
	MTBF				
	WILDI	00,00	00 1110		
	Tampayati ya Dart	1 v tomonomotivno concer mont (			
Temperature	Temperature Port  Measurement Range	1 x temperature sensor port ( 0 to 99.9°C	sensor bundled )		
Sensor	Measurement Accuracy	+/- 1.5%			
	Temperature Alarm	Yes			
	Temperature Alaim	163			
		T			
Power	Input	100V or 240V AC at 50 or 60	<u> </u>		
	Consumption	20W / 40W / 60W	60W		
Environmental	Operating	0 to 50°C			
Environmental Conditions	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 )			
	Model	Product Dimension	Packing Dimension		
Dimensions	RF-1.3	480 x 298.3 x 43.5 mm	380 x 535 x 120 mm		
		18.9 x 11.7 x 1.71 inch	15 x 21.1 x 4.7 inch		
	RF-1.6	480 x 458.3 x 43.5 mm	550 x 550 x 120 mm		
		18.9 x 18 x 1.71 inch	21.7 x 21.7 x 4.7 inch		
	RF-1.9	480 x 623.3 x 43.5 mm	550 x 730 x 120 mm		
		18.9 x 24.5 x 1.71 inch	21.7 x 28.7 x 4.7 inch		
	RF-33.9	195 x 42.9 x 1466 mm	263 x 106 x 1650 mm		
		7.7 x 1.7 x 57.7 inch	10.4 x 4.2 x 65.0 inch		
Mainlet .	Model	Net Weight	Gross Weight		
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			
	RF-1.9				
	RF-33.9				
	KF-33.8	5 kgs / 11 lbs	7.4 kgs / 16.3 lbs		
Regulatory		FCC & CE certified			

Environmental RoHS2 & REACH compliant
---------------------------------------

### Part IV. Software

# < 4.1 > Key Features

InfraGuard Manager IGM-03 is a FREE environmental sensor management software to monitor up to 30 Master IP Groups remotely ( max. 16 EC box levels in each Master IP Group ), total 480 EC boxes.

Each EC box can connect a variety of sensors to provide an environmental monitoring solution to secure high levels of data center operational stability and flexibility.

To enhance the functionality, up to 1920 x kWh PDU / Fan Unit can be monitored through IGM-03 GUI as well.

5 concurrent user license is bundled to achieve the demand of multi-user / multi-tasking in nowadays' time sharing data center operation.

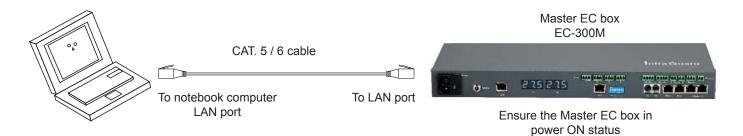
### InfraGuard IGM-03

	Features	
Capacity	Master IP Group ( Just 1 IP for 16 EC box levels )	30
	EC box number	480
	Concurrent user	5
Device	Status of Sensor, PDU, Fan Unit & Door	V
Overview	Device / Audio and Visual Output Setting	<b>V</b>
Sensor	Status Monitoring	V
Peripherals	Location of Sensor / Peripherals	<b>V</b>
	Temp-Humid Alarm / Rising Alert Threshold Setting	<b>V</b>
PDU	Energy Consumption kWh / Amp Monitoring	V
	Outlet Level Measurement	<b>V</b>
	PDU Outlet Schedule	<b>V</b>
	Outlet Switch ON / OFF	<b>V</b>
	Amp Alarm Threshold Setting	<b>V</b>
	Amp Rising / Low Alert Threshold Setting	<b>V</b>
	Temp-Humid / Circuit Breaker Monitoring	<b>V</b>
Fan Unit	CFM & Temp. Monitoring	~
	Unit CFM (fan speed ) Setting	<b>V</b>
	Auto CFM Control Setting	<b>V</b>
	Individual Fan Kit ON / OFF	<b>V</b>
	Fan Unit ON / OFF	<b>V</b>
Event	System & Device Event	V
Log / Report	Device Log / Reporting	<b>~</b>

# < 4.2 > Master IP Configuration

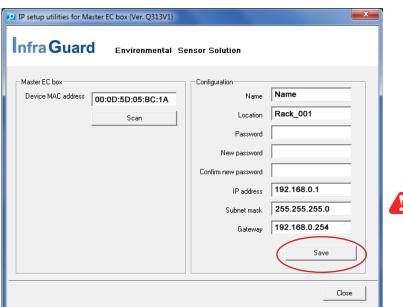
Please take the following steps to configure the Master EC box.

- **Step 1**. Prepare a notebook computer to download the IP setup utilities from the link : http://www.austin-hughes.com/support/utilities/infraguard/MasterIPsetup.msi
- Step 2. Double Click the MasterIPsetup.msi and follow the instruction to complete the installation
- **Step 3**. Go to each Master EC box with the notebook computer & a piece of CAT. 5 / 6 cable to set up the IP configuration by IP setup utilities as below. Please take the procedures for all Master EC box **ONE BY ONE**





Reconnect the Master EC box with the network device (router or hub), after finish master IP configuration.





Write down the new IP address & password for < Setup > purpose, refer to P.40

- Step 4. Click " Scan " to search the Master EC box
- Step 5. Enter device name in "Name" (min. 4 char. / max. 16 char.). Default is "Name"
- Step 6. Enter device location in "Location" (min. 4 char. / max. 16 char.). Default is "Rack\_001"
- Step 7. Enter password in "Password "for authentication (min. 8 char. / max. 16 char.). Default is "00000000"
- Step 8. Enter new password in "New password" (min. 8 char. / max. 16 char.).
- Step 9. Re-enter new password in "Confirm new password"
- **Step 10**. Change the desired "**IP address**" / "**Subnet mask**" / "**Gateway**", then Click "**Save**" to confirm the changes The default IP setting is as below:

IP address: 192.168.0.1 Subnet mask: 255.255.255.0 Gateway: 192.168.0.254

# < 4.3 > Hardware Requirements of The Management PC

Please prepare a management PC with the hardware requirements as below for InfraGuard Manager - IGM-03

## Recommended hardware requirements:

- Processor : Dual Core 2GHz or above

- Memory : 2GB RAM- Available Disk Space : 500GB

- Display: 1440 x 900 or higher resolution monitor



- The default service port of web server is 80.
- A dedicated PC to run InfraGuard Manager IGM-03 is recommended.
- Make sure the management PC is POWER ON & IGM-03 is under operation. Otherwise, daily data backup will NOT be proceeded.

## < 4.4 > Supported OS Platform & Language

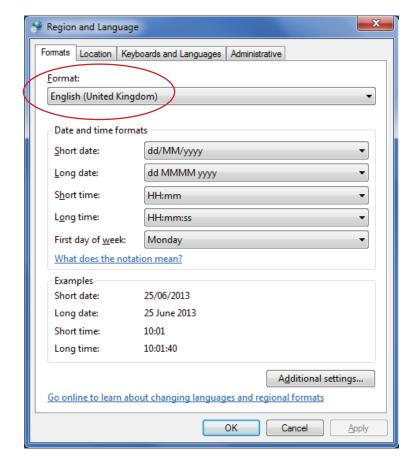
InfraGuard Manager – IGM-03 supports the OS platforms & languages as below:

- MS Windows 7 Professional with SP1 (English Edition)
- MS Windows 7 Ultimate with SP1 (English Edition)
- MS Windows 8 Professional (32bit & 64bit, English edition only)
- MS Windows Server 2003 R2 Standard Edition with SP2 (English Edition)
- MS Windows Server 2008 Standard Edition SP2 (English Edition)
- MS Windows Server 2008 R2 Standard Edition SP1 (English Edition)

# Make sure users login the management PC as a member of "Administrator "Group before IGM-03 installation & execution

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

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



#### < 4.5 > Software Download

#### Software download

Please download the InfraGuard Manager - IGM-03 to the management PC from the link http://www.austin-hughes.com/support/software/infraguard/IGM-03.msi

Double click the

IGM-03.msi

and follow the instruction to complete the installation.









click "Finish"

Complete

## < 4.6 > First Time Start-up Setting

**Step 1.** Double Click InfraGuard Manager - IGM-03 and follow the instruction to complete start-up setting.

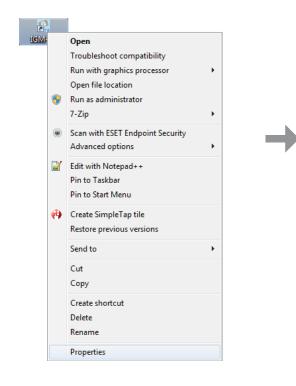


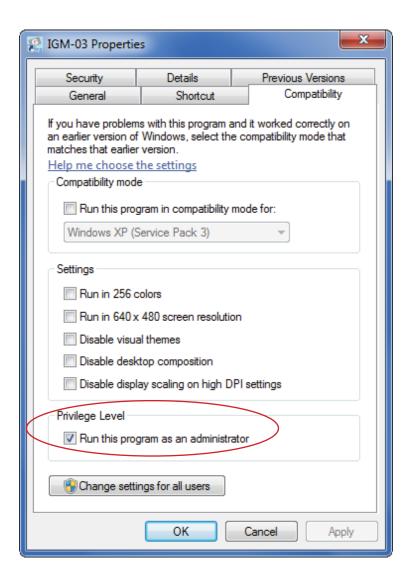


For MS Windows 7 and MS Windows server 2008,

it requires to run a program with administrator rights before execution:

- Right click | InfraGuard Manager IGM-03 | , and then select **Properties**.
- Click the Compatibility tab.
- Tick the box Run this program as an administrator, and then click OK.



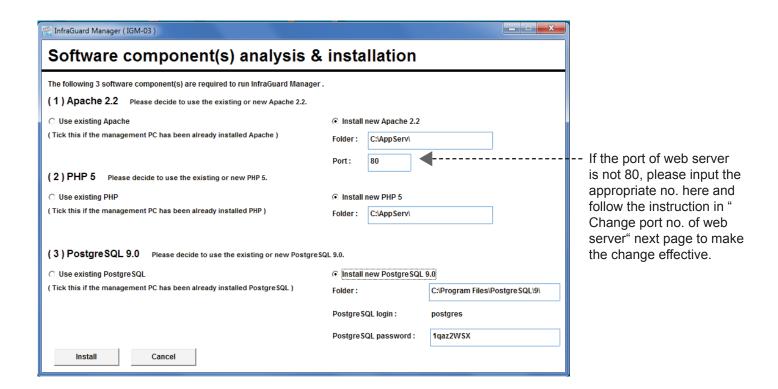




## < 4.6 > First Time Start-up Setting

#### Step 2. Click "Next" in "InfraGuard Manager start-up setting box

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





PostgreSQL password can be changed by user.

The password **MUST** contain at least three of the following four character groups:

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

· · · · · · · · · · · · · · · · · · Complete

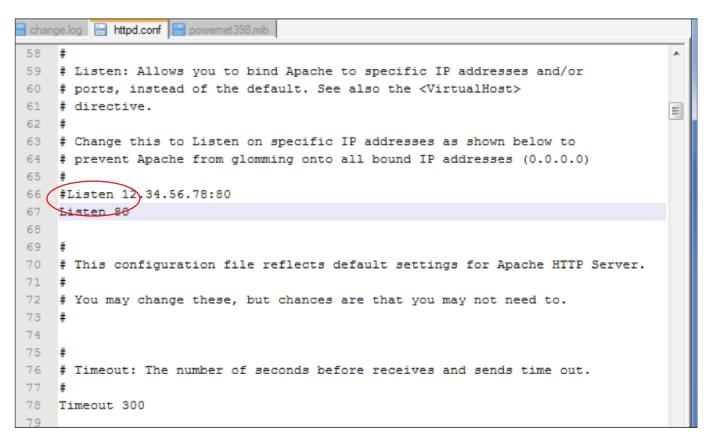
## < 4.7 > Change Port no. of Web Server



If users want to use another port no. instead of 80, please take the following steps after InfraGuard Manager IGM-03 " First time start-up setting " is completed.

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

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



**Step 3.** Restart Apache services.

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

· · · · · · · · · · · · · · · · Complete

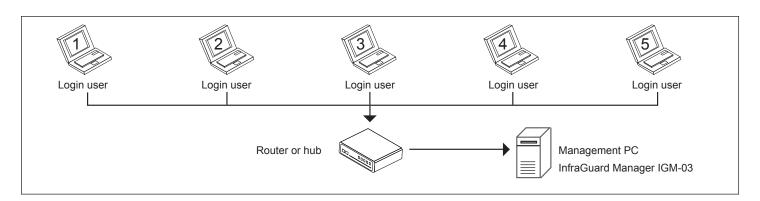
## Part V. System Setup & Remote Access

## < 5.1 > System Setup

Users can follow below step 1 - 3 to access the management PC and InfraGuard Manager IGM-03

- Step 1. Open Internet Explorer (I.E.), version 8.0, 9.0 or 10.0
- Step 2. Enter the URL of management PC into the address bar
  - (If fail to access, please ask MIS to check if the port for web server is enable. Default port: 80)
  - e.g. http://192.168.0.1/IGM-03/
- Step 3. Enter " User name " . Default is " admin " Enter " Password " . Default is " 00000000 "

System authen	System authentication		
User name	admin		
Password	• • • • • •		
Login	Cancel		



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

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

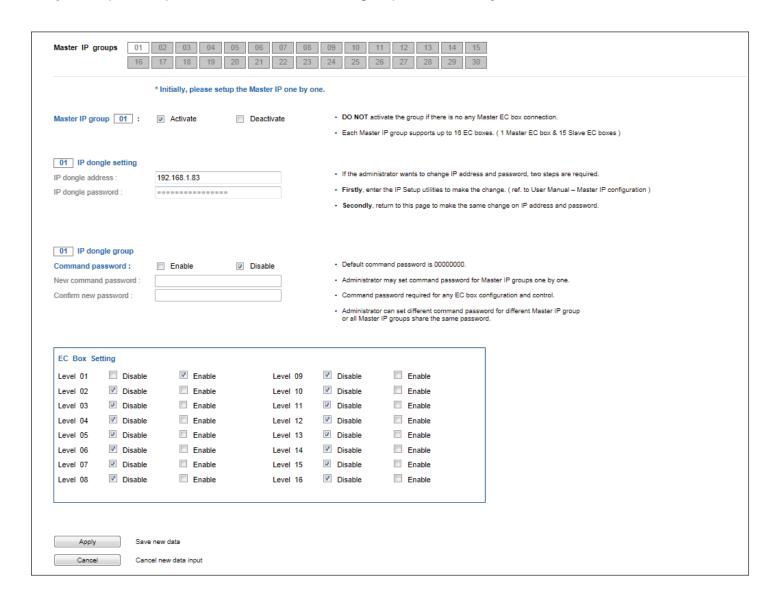
In < **User** > page, administrator can create 4 more operators.

- Step 1. Tick "Operator 1: "
- Step 2. Input " User name " & " User login password "
- Step 3. Input user login password in "Confirm password" again
- **Step 4.** Repeat Step 1 to 3 for other operators if necessary
- Step 5. Click "Apply " to finish the user setup

	Activate	User name	User login password	Confirm password
Administrator:	~	admin	***********	************
Only administrate	or is authorise	d to access SYSTEM SETTING.		
Only administrate	or is authorise	d to set and change all users' passy	word.	
Min. 4 char. and	max. 16 char	for user name		
min. Tonar. and		. Tor door marrio.		
	max. 16 char	r. for user login password.		
• Min. 8 char. and		r. for user login password.	elete the original operator and create a new one. A	, new user looin nassword is required
• Min. 8 char. and		r. for user login password.	elete the original operator and create a new one. A	new user login password is required.
<ul> <li>Min. 8 char, and</li> <li>If there is any c</li> </ul>	hange of user	r. for user login password.	elete the original operator and create a new one. A	new user login password is required.
<ul> <li>Min. 8 char, and</li> <li>If there is any c</li> </ul> Operator 01:	hange of user	r. for user login password.  name, system will automatically de		
• Min. 8 char. and	hange of user	r. for user login password.	000000000000000000000000000000000000000	***************************************
<ul> <li>Min. 8 char, and</li> <li>If there is any c</li> <li>Operator 01:</li> <li>Operator 02:</li> </ul>	hange of user	r. for user login password.  name, system will automatically de	000000000000000000000000000000000000000	***************************************

In < Setup > page, administrator can

- Activate max. 30 Master IP groups
- Set the group command password
- Enable / disable the EC box levels
- Step 1. " Activate " Master IP group 01
- Step 2. Input " IP address " & " password " of the IP dongle
- Step 3. " Enable " Command password
- Step 4. Input "New command password". Default is "00000000"
- Step 5. Input new command password in "Confirm new password" again.
- Step 6. Click "Apply " to finish the Master IP group setup
- Step 7. "Enable" the EC box connected to the Master IP group
- Step 8. Click "Apply " to finish the EC box setting
- Step 9. Repeat step 1 to 9 for other Master IP groups if necessary



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

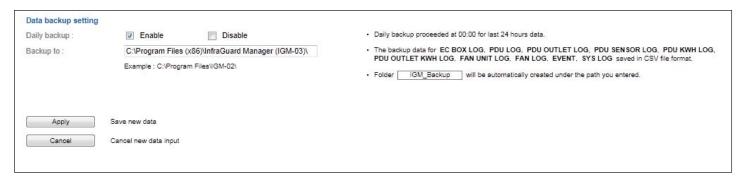
- Step 1. " Enable " alarm email
- Step 2. Input "SMTP server" and "SMTP port"
- Step 3. Input "User email"
- Step 4. " Enable " or " Disable " the " SMTP authentication "
- Step 5. Input "User name" and "Password"
- Step 6. Select the "SMTP secure" (None / SSL / TLS)
- Step 7. Input the " Alarm interval "
- Step 8. Input the alarm recipient email account in " Alarm mail recipient 01 "
- **Step 9.** Repeat step 8 for other alarm recipients if necessary
- Step 10. Click "Apply " to finish the alarm email server setting

Alarm email server sett	ing	
Alarm email:	✓ Enable ☐ Dis	able • This alarm setting is for all Master IP groups
SMTP server:	192.168.0.1	
SMTP port :	25	
User email:	example@email.com	
SMTP authentication :	✓ Enable ☐ Dis	able
User name :	example@email.com	
Password:	*********	
SMTP secure :	SSL V	
Alarm interval:	10 (Min. 10, Max. 60 minutes)	
Alarm email to		
Alarm mail recipient 01 :	user01@email.com	
Alarm mail recipient 02 :		
Alarm mail recipient 03 :		
Alarm mail recipient 04:		
Alarm mail recipient 05:		
Apply	Save new data	
Cancel	Cancel new data input	

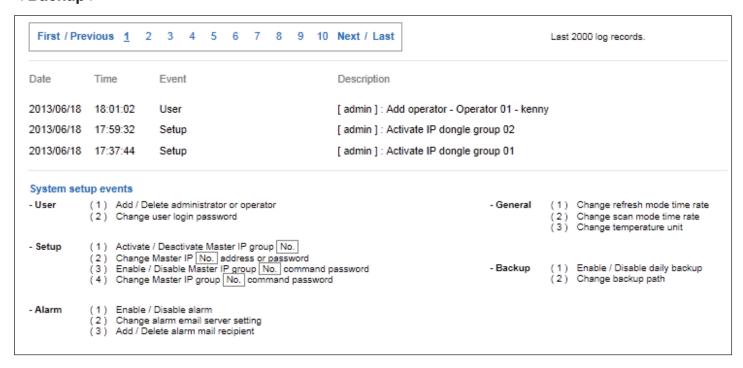
In < General > , administrator can change the "Refresh rate", "Scan rate" & "Temperature unit" across all Master IP groups



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



< Sys log > provides past 2000 event records of < User >, < Setup >, < Alarm >, < General > & < Backup >



#### < 5.2 > Remote Access

After administrator completes < System Setup >, up to 4 additional users can access the management PC remotely. User can follow the steps below to access management PC & InfraGuard Manager IGM-03

- **Step 1.** Add the port of web server in the firewall settings of the management PC.
  - Open " Control Panel "
  - Select " Windows Firewall "
  - Select " Advanced settings "
  - Right Click " Inbound Rules " & select " New Rule... "
  - Select " Port " & Click " Next> "
  - Select "TCP" then "All local ports" & Click "Next>"
  - Select " Allow the connection " & Click " Next> "
  - Tick all three options & Click " Next> "
  - Input the " Name " & " Description " of the port & Click " Finish "
- Step 2. Open the web browser of remote client PC
- **Step 3.** Input the URL of InfraGuard Manager IGM-03 in the address bar e.g. http://192.168.0.1/IGM-03/
  - If the port no. of web server is not 80, please enter the appropriate port no. follow the IP address e.g. <a href="http://192.168.0.1:81/IGM-03/">http://192.168.0.1:81/IGM-03/</a>
- **Step 4.** System authentication page pops up automatically.

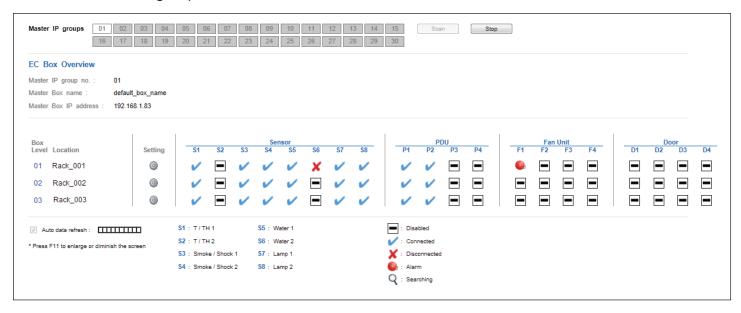
  Input " **User name** ", " **Password** " & Click " **Login** "

System auther	tication
User name	admin
Password	• • • • • •
Login	Cancel

## Part VI. Devices Monitoring & Setting

#### < 6.1 > Devices Overview

< EC Box Overview > provides a scan overview on the status of sensors, PDUs, fan units & doors based on Master IP group

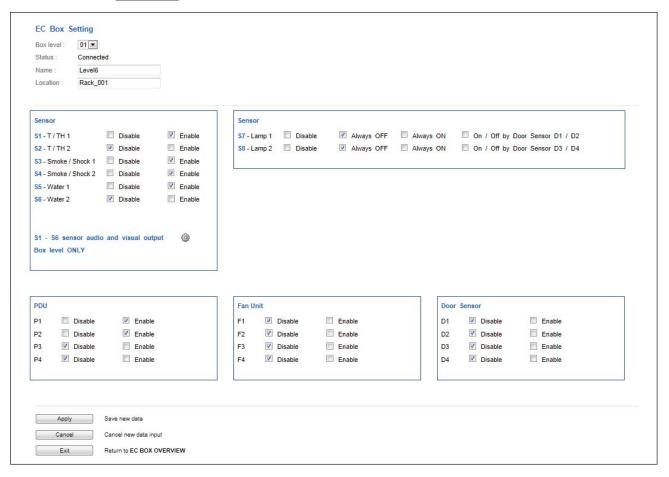


#### In < EC Box Device Setting > user can disable or enable :

- T / TH sensor, Smoke / Shock sensor, Water sensor, Door sensor
- PDU, Fan unit, LED light bar
- Click " Apply " to finish the above settings

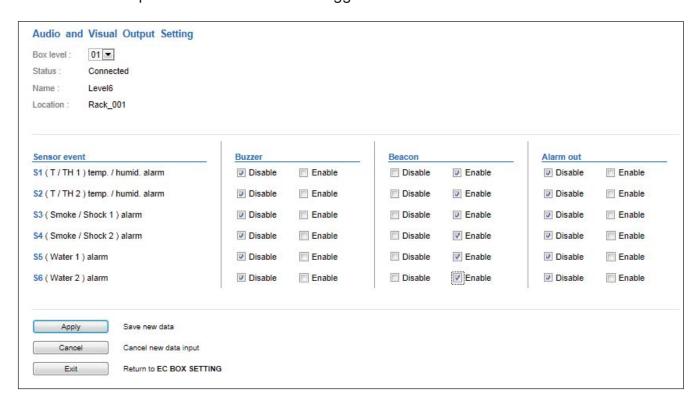


DO NOT Enable devices if not connected



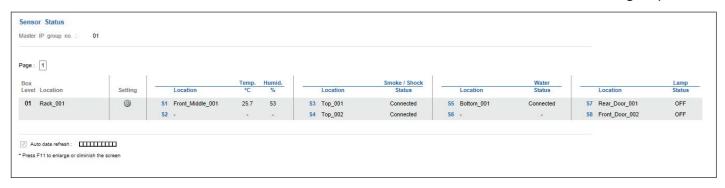
#### < 6.1 > Devices Overview

In < Audio and Visual Output Setting >, user can enable or disable "Buzzer ", "Beacon " & "Alarm out " output when sensor event is triggered



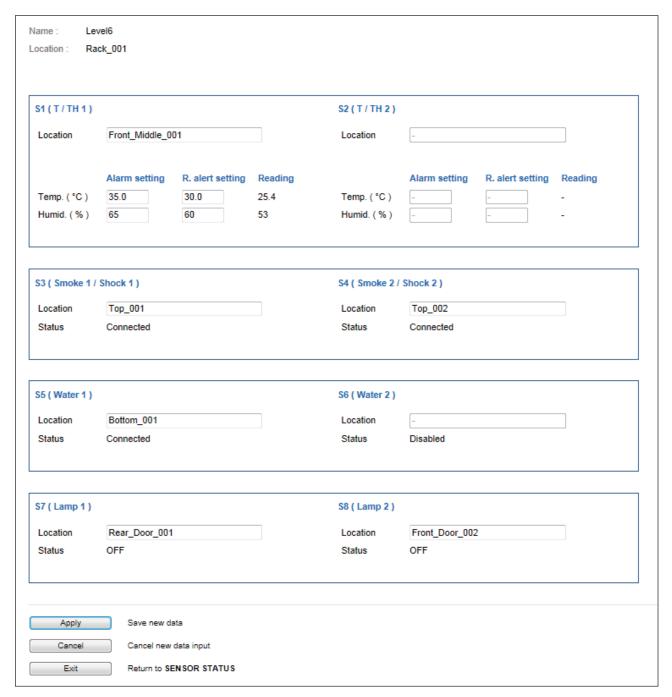
#### < 6.2 > Sensors

In < Sensor Status >, user can monitor sensors's status in details based on Master IP group

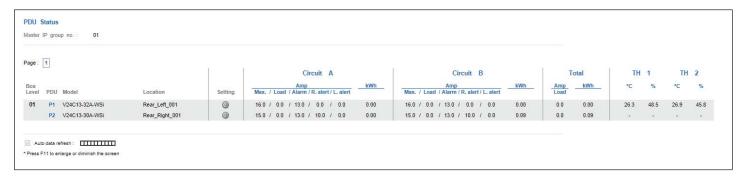


#### In < Sensor Setting >, user can modify

- " Location " of T / TH sensor, smoke / shock sensor, water sensor & LED light bar
- " Alarm setting " & " Rising alert setting " of T / TH sensor
- Click " Apply " to finish the above settings

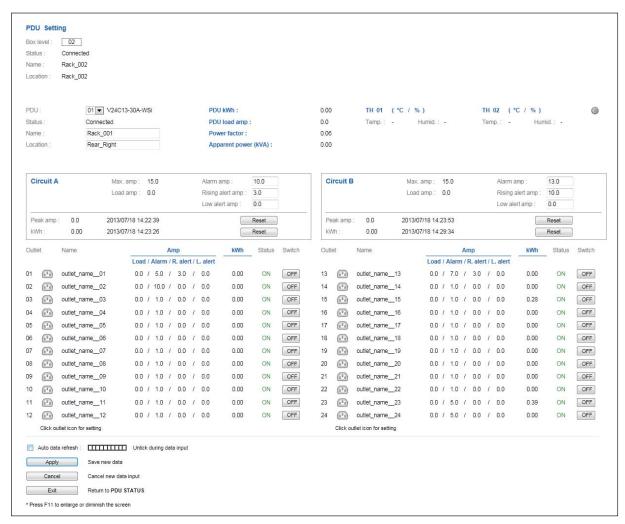


#### In < PDU Status >, user can monitor PDU's status in details based on Master IP group



#### In < PDU Setting >, users can

- Change " Name " and " Location " of PDU
- Change " Alarm amp. ", " Rising alert amp. " & " Low alert amp. " of PDU's circuits
- Click " Apply " to finish the above settings
- Click "Reset "to reset peak amp. or kWh of PDU's circuits
- Click " ON / OFF " to switch On / Off outlet ( Switched PDU models only )
- View On / Off status of outlets
- View aggregated current on the PDU
- View lastest loading & energy consumption of outlets ( Outlet level measurement PDU models only )
- View the lastest T / TH reading connected to the PDU



#### In < Outlet Setting >, user can

- Change " Name " of outlet
- Change " Power up sequence delay " of outlet ( Switched PDU models only )
- Change " **Alarm amp.** ", " **Rising alert amp.** " & " **Low alert amp.** " of outlet ( Outlet level measurement PDU models only )

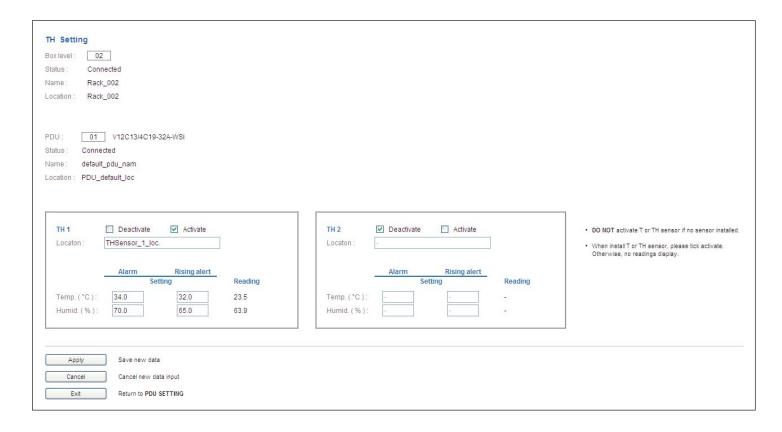


- Click " Apply " to finish the above settings
- Click " Reset " to reset peak amp. or kWh of outlet ( Outlet kWh Switched PDU only )



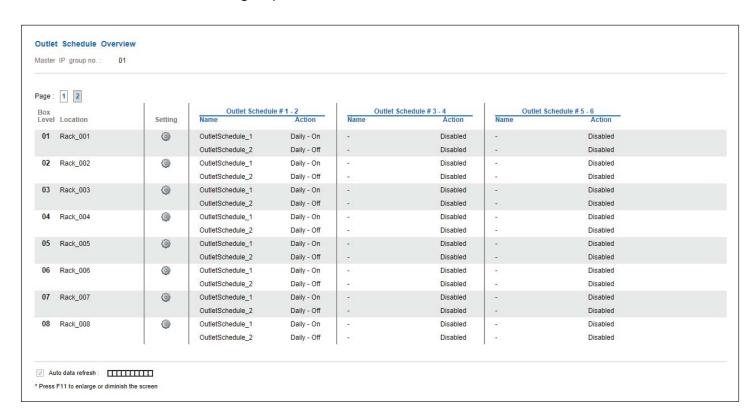
#### In < TH setting >, user can

- " Activate " or " Deactivate " Temp. & Humid. sensor
- Change "Location ", "Alarm setting "& "Rising alert setting " of Temp. & Humid. sensor
- Click " Apply " to finish the above settings



#### <6.3> PDU

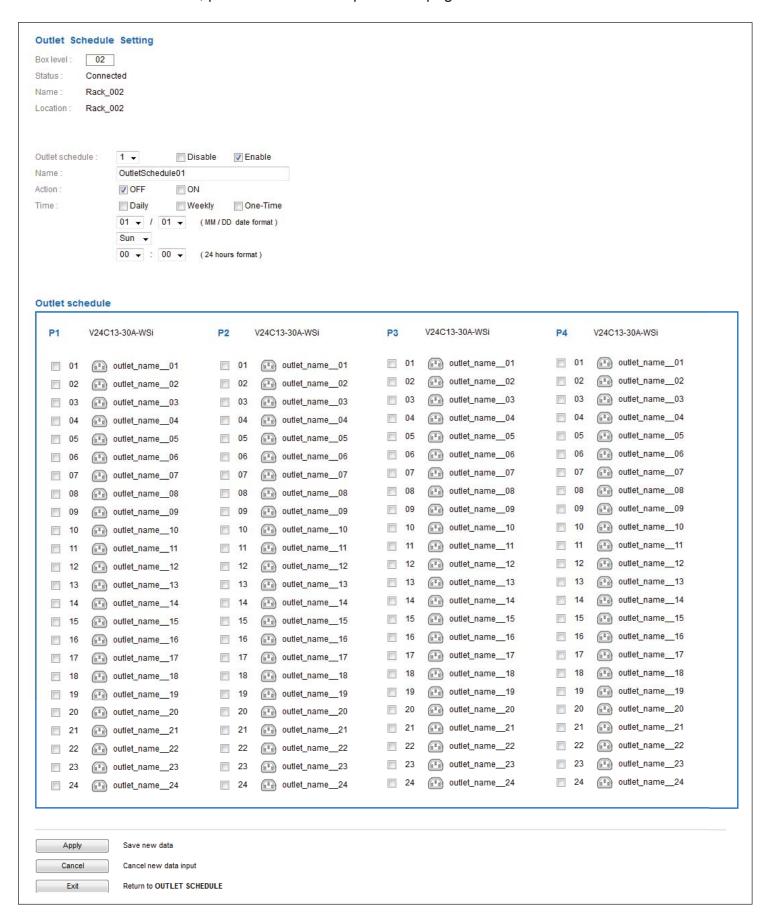
< **Outlet Schedule Overview** > provides a scan overview on all settings of PDU's outlet schedules based on Master IP group



In < Outlet Schedule Setting >, user can set max. 6 outlet On / Off schedules in each EC Box.

The outlet schedule can be set on one-time, daily or weekly basis.

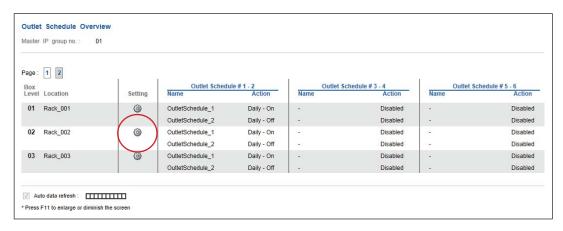
To set the outlet schedule, please follow the steps in next page



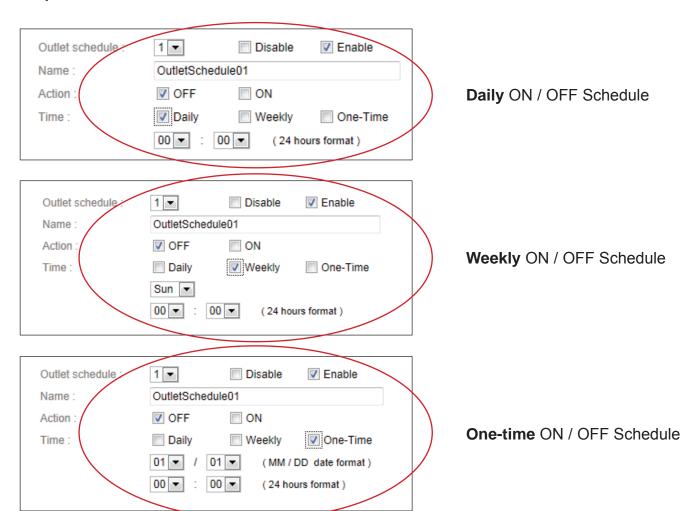
PDU outlet schedule is a function allowing users to set a specific time to switch either ON or OFF the outlets on daily, weekly or one-time basis.

Each EC box provides **6 schedule tasks**. Users can follow the steps below to enable the PDU outlet schedule

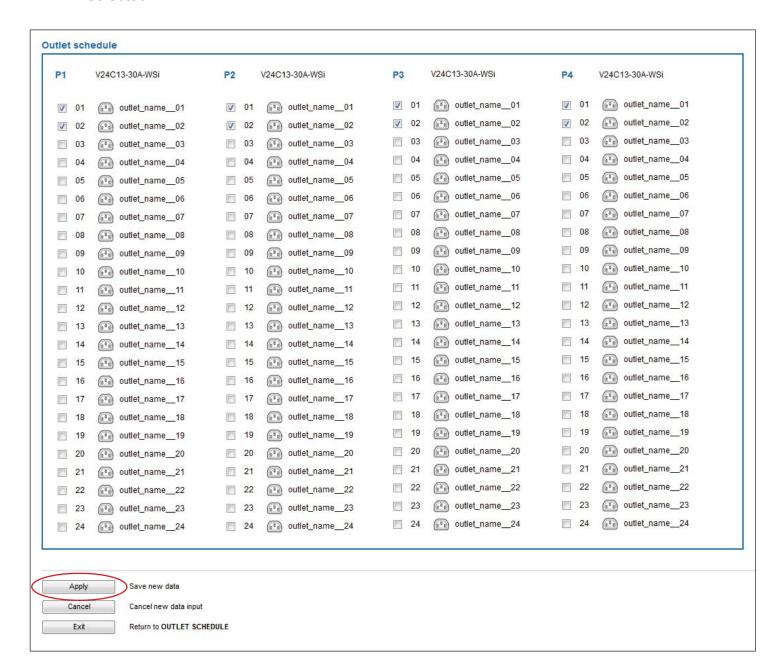
Step 1. Go to < Outlet Schedule Overview > page, Click "Setting"



- Step 2. In < Outlet Schedule Setting > page, Select "Oultet schedule 1 " & Tick "Enable "
- Step 3. Provide the name of the outlet schedule
- Step 4. Select the action (either ON or OFF)
- **Step 5.** Select the time for outlet schedule.



**Step 6.** Tick the outlets of the connected PDU (s) to switch ON / OFF based on the action you selected



Step 7. Click "Apply " to save the settings

Step 8. Repeat step 2 to 7 for Outlet Schedule 2 to 6 if necessary



If the outlet schedule task is " **One-Time** ", that specific task will be disabled automatically once the action is completed.

To cancel the outlet schedule, tick " Disable " & Click " Apply " to finish the changes.

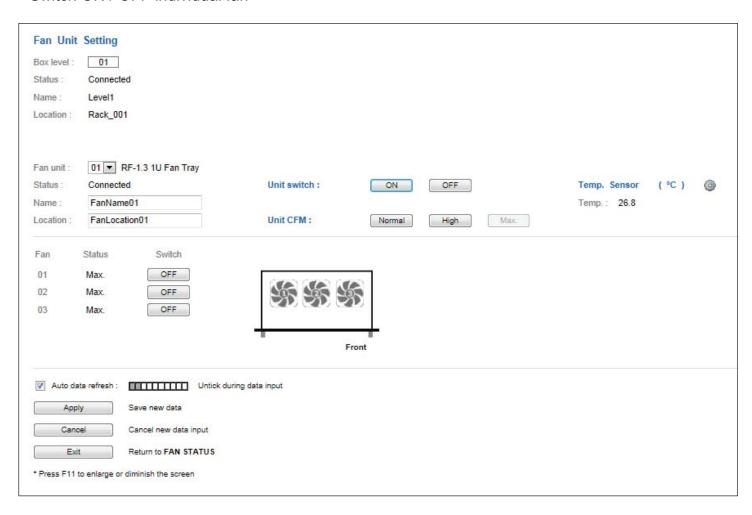
#### < 6.4 > Fan Unit

< Fan Unit Status > provides a scan function to monitor the Fan unit status based on Master IP group



#### In < Fan Unit Setting >, user can

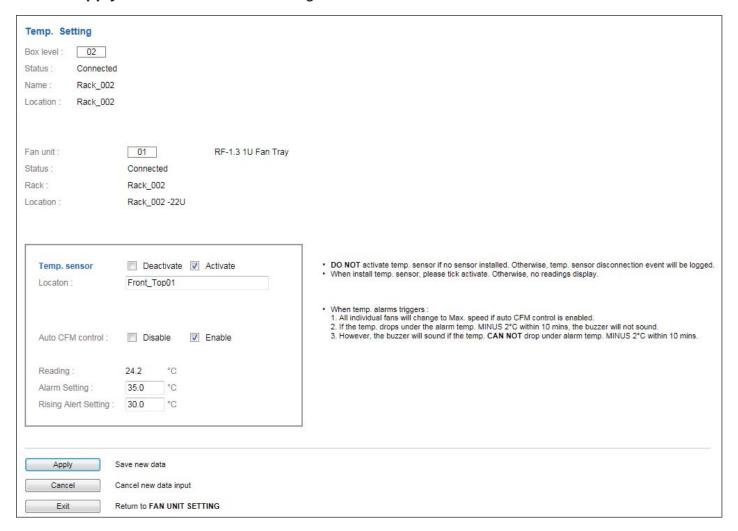
- Change "Rack " & "Position " & Click "Apply "
- Switch ON / OFF fan unit
- Change fan unit CFM ( normal / high / max. )
- Switch ON / OFF individual fan



#### < 6.4 > Fan Unit

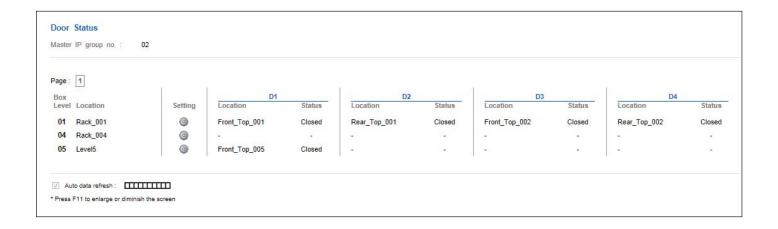
#### In < Temp Setting >, user can

- " Activate " or " Deactivate " temp. sensor
- Change " Location " of temp. sensor
- " Enable " or " Disable " auto CFM control
- Change " Alarm temp. " & " Rising alert temp. " of temp. sensor
- Click " Apply " to finish the above settings

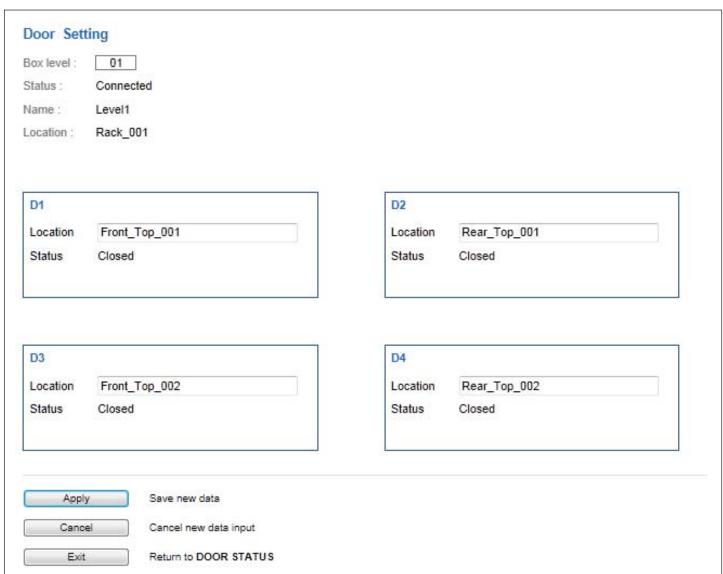


#### < 6.5 > Door

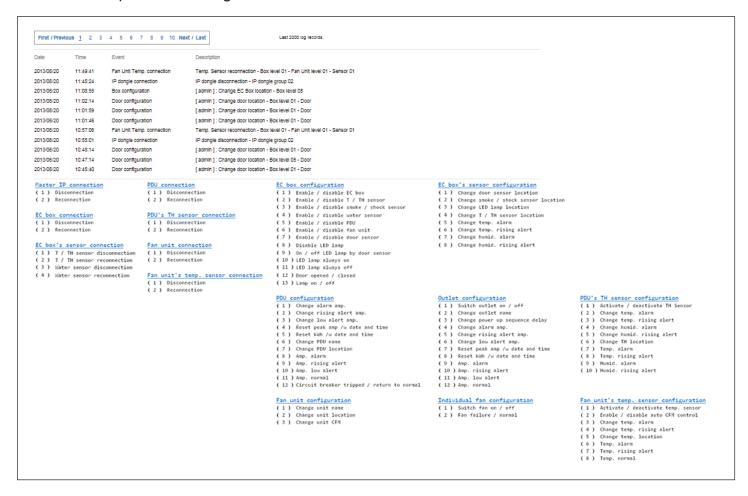
< Door Status > provides a scan function to monitor the door sensor status based on Master IP group



In < **Door Setting** >, user can change " **Location** " of door sensor & Click " **Apply** " to finish the settings



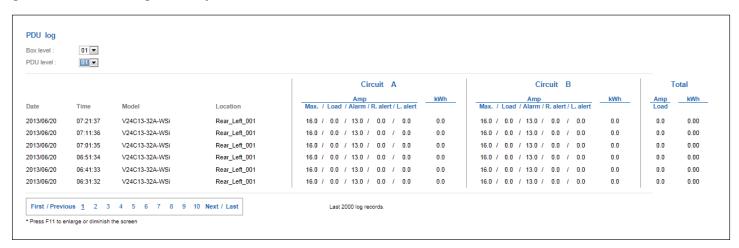
- < Event > provides past 2000 events of the following devices in an Master IP group
- EC box configuration & connection
- Sensor configuration & connection
- PDU configuration & connection
- PDU's outlet & TH sensor configuration
- Fan unit configuration & connection
- Fan unit Temp. sensor configuration



< **EC Box log** > provides past 2000 log records of each EC box in a Master IP group. The software will generate an EC box log in every 10 mins



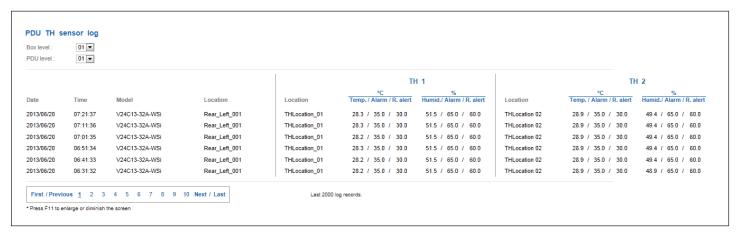
< **PDU log** > provides past 2000 log records of PDUs connect in each EC box. The software will generate a PDU log in every 10 mins



< **PDU Outlet log** > provides past 2000 log records of each PDU's outlet. The software will generate an outlet log record in every 10 mins



< PDU TH Sensor log > provides past 2000 TH log records of each PDU. The software will generate an outlet log record in every 10 mins



< Daily kWh log - PDU > provides past 2000 daily energy consumption log records of each PDU.

The record is logged at 00:00 everyday ( + / - 5 mins ) for previous day

The PDU kWh log will not be recorded at 00:00 if the PDU connected is less than 24 hours

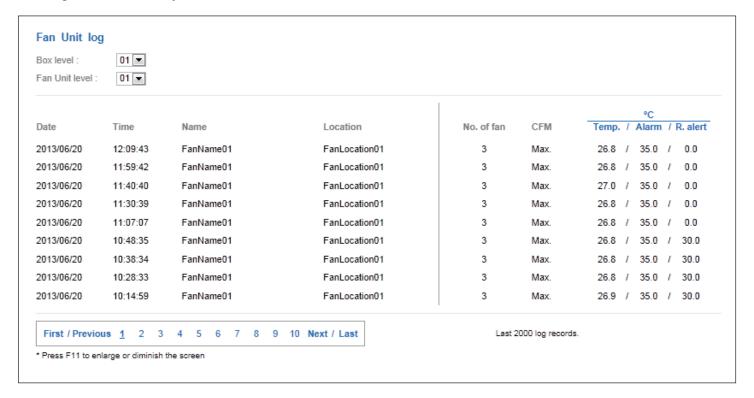


< Daily kWh log - PDU outlet > provides past 2000 daily energy consumption log records of each PDU's outlet. The record is logged at 00:00 everyday ( + / - 5 mins ) for previous day ( Outlet level PDU models only )

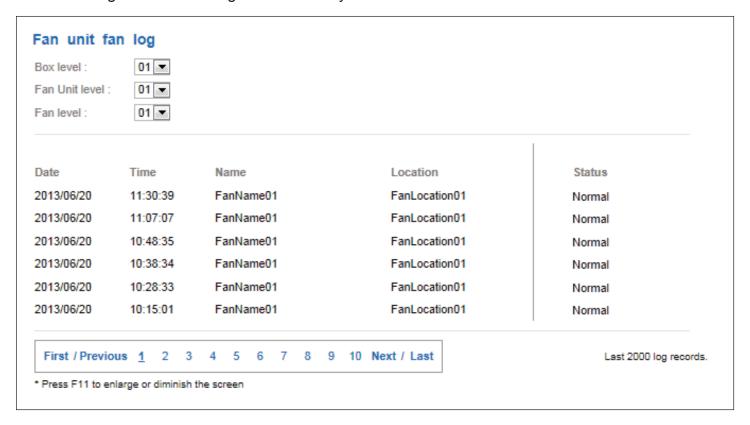
The PDU outlet kWh log will not be recorded at 00:00 if the PDU connected is less than 24 hours

Box level:	01 ▼			
PDU level :	01 💌			
Outlet level :	01 ▼			
Date	Time	Model	Location	kWh
2013/06/20	00:00:00	V24C13-32A-WSi	Rear_Left_001	0.0
2013/06/19	00:00:00	V24C13-32A-WSi	PDULocation	-
First / Previo	ous 1 2 3	4 5 6 7 8	9 10 Next / Last	Last 2000 log records.

< Fan Unit log > provides past 2000 log records of each Fan unit. The software will generate a Fan unit log record in every 10 mins



< Fan Unit fan log > provides past 2000 log records about an individual fan of each Fan unit. The software will generate a fan log record in every 10 mins



< **Door sensor log** > provides past 2000 log records about the door sensor. The software will generate a door log record in every 10 mins



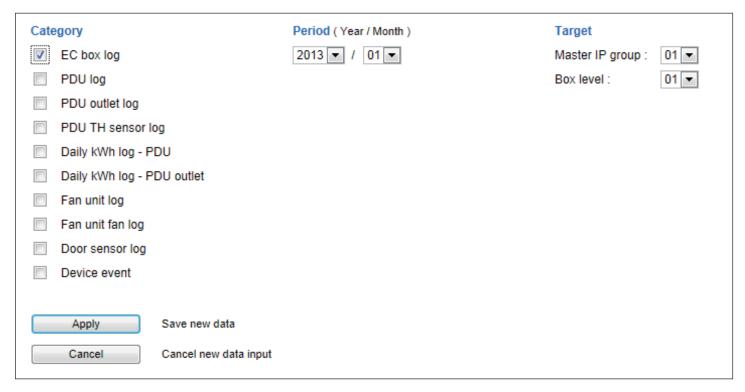
< Report > provides monthly report for EC box log , PDU log , PDU Outlet log ,

PDU TH sensor log , Daily kWh log – PDU , Daily kWh log – PDU outlet ,

Fan unit log , Fan unit fan log , Door sensor log , Device event in CSV format

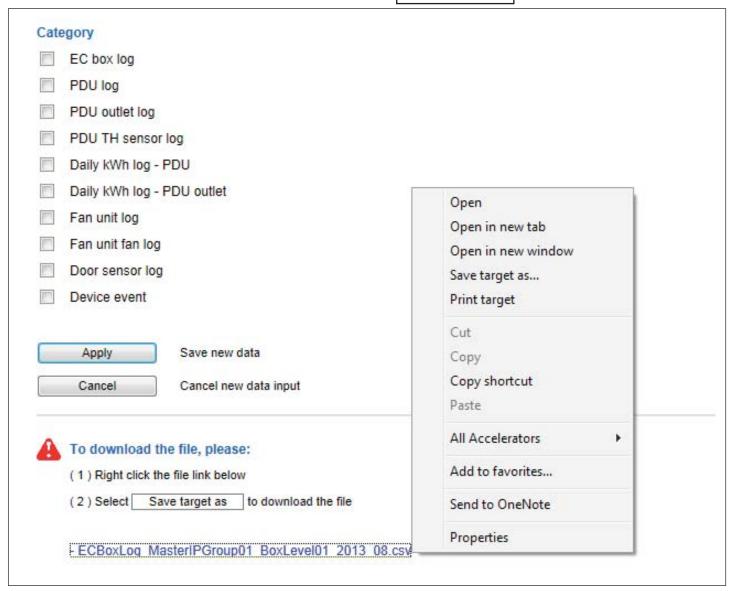
Please take the following steps to export the log category you want :

**Step 1** - Select the category, period and target



Step 2 - Click "Apply " and Click "OK " from the pop up window. It takes a few mins to complete

Step 3 – Right Click the file name below and SELECT Save target as to download the log file



Step 4 - Click "Close" to complete or "Open" to view the content of log

#### Part VIII. SNMP

The EC-300M master box can manage the connected EC-300 slave box in a single daisy-chain up to 16 levels via SNMP v2c (Simple Network Management Protocol).



Only EC-300M master box can support 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/infraguard/IGM-MIB.mib

#### (II). Enabling SNMP Support

The following procedure summarizes how to enable the EC-300M master box for SNMP support.

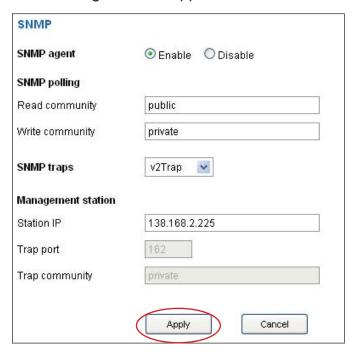
- **Step 1**. Connect the EC-300M master box to a computer. (Please refer to < 4.2 > Master IP Configuration)
- Step 2. Open the Internet Explorer (I.E.) version 8.0 or above
- **Step 3**. Enter the configured IP address of EC-300M master box into the I.E. address bar. Default IP address is " **192.168.0.1** "
- Step 4. Enter "Login name " & "Password ". Default login name & password are "00000000"



#### Part VIII. SNMP

#### Step 5. Select SNMP from the left navigation pane

**Step 6**. The SNMP Settings window appears as below:



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



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

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

#### Part IX. FAQ

#### **InfraGuard Manager - IGM-03**

#### 1. What is InfraGuard Manger - IGM-03?

InfraGuard Manager IGM-03 is a FREE environmental sensor management software to monitor up to 30 Master IP Groups remotely ( max. 16 EC box levels in each Master IP Group ), total 480 EC boxes. Each EC box can connect a variety of sensors to provide an environmental monitoring solution to secure high levels of data center operational stability and flexibility.

To enhance the functionality, up to 1920 x kWh PDU / Fan Unit can be monitored through IGM-03 GUI as well.

#### 2. What OS platform does IGM-03 support?

MS Windows XP Professional with SP3 (32 bit, English edition only)

MS Windows 7 Professional with SP1 (32 & 64 bit, English edition only)

MS Windows 7 Ultimate with SP1 (32 & 64 bit, English edition only)

MS Windows 8 Professional with SP3 (32 & 64 bit, English edition only)

MS Windows Server 2003 R2 Standard edition with SP2 (32 & 64 bit, English edition only)

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

MS Windows Server 2008 R2 Standard edition with SP1

Ensure users login to the management PC as a member of "Administrators " group before IGM-03 installation and execution

#### 3. Why user cannot login to the management PC remotely?

Make sure the port for web server is added in the firewall setting and the services of web server is started in the management PC

#### 4. Which database does IGM-03 support?

PostgreSQL

#### 5. What is the PostgreSQL default password for IGM-03?

1qaz2WSX

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

Make sure IGM-03 is executed and the alarm server is enabled and configured properly

#### 7. What is the default user name and password of IGM-03?

Default user name "admin" and password "00000000"

## 8. What is the command password of IGM-03?

Each Master IP group has its command password. It will be requested for any device configuration and control connected to the EC Box. The administrator can set different password for each Master IP group or all Master IP groups use the same command password.

#### Part IX. FAQ

#### 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?

 $0.15 \sim 0.3 \text{ dB/m}$ 

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

3.5m

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

250 lumen

#### **Master EC Box**

#### 1. What is the Master EC Box?

The Master EC Box has a built-in IP remote module which provides a simple and economical way to consolidate management of max. 16 EC boxes, by a single IP connection to the network.

#### 2. What is the IP Setup Utilities?

This is a Windows based application used to assign the IP address of Master EC Box. You can download the IP Setup Utilities from the link below:

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

#### 3. Does the EC Box has dual power input?

Yes. (MUST order before delivery)

#### **Others**

#### 1. Where can I find the Catalogue / User manual / Model list of InfraGuard EC Box?

Please visit www.austin-hughes.com

#### 2. How can I get a further support?

Please send an email to <a href="mailto:support@austin-hughes.com">support@austin-hughes.com</a> or <a href="mailto:sales@austin-hughes.com">sales@austin-hughes.com</a>

## **EC Box Disconnection**

- 1. GUI shows a certain level EC Box disconnected
  - Step 1 EC Box power off?

Check the EC Box is power ON or not

Step 2 - EC Box level setting duplicated in the same Master IP group?

Check and make sure EC Box level is unique and not duplicated in the same Master IP group.

(Please refer to user manual < 1.5 > for details)

A

The other EC box with same level shows " **Searching** " in < **Overview** > page

**Step 3** - This level EC Box is enabled in < **Setup** > page but not connected to the daisy chain ? Make sure to enable the EC Box in < **Setup** > page ONLY when it is connected to the daisy chain

- 2. GUI shows from a certain level EC Box to the last one disconnected
  - Step 1 Cable disconnected, loose or defective?

Check the Cat. 5 / 6 cable connection between the first disconnected EC Box and the previous one. 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 - The first disconnected EC Box failed?

Unplug the Cat. 5 / 6 cable on the first disconnected EC Box, then plug it to the second disconnected EC Box to check if the problem caused by the first disconnected EC Box

- 3. GUI shows the whole group of EC Boxes disconnected
  - Step 1 Cable disconnected, loose or defective?

Check the Cat. 5 / 6 cable connection to EC Boxes 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 - Master EC Box failed?

- i. Check if the network setting of the Master EC Box is correct or not. If duplicate IP address is in the network, it may cause such problem
- ii. Disconnect the Master EC Box 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 Master EC Box can be found or not. If it cannot be found, the Master EC Box may be failed

#### Replacement, Removal Or Addition For EC Box

- 1. How to replace the failed Master EC Box with a new one?
  - **Step 1** Prepare a new Master EC Box and set it to 1st level. (Please refer to user manual < 1.5 > for details)
  - **Step 2** Configure the IP address of the new Master EC Box as the failed one ( Please refer to user manual < 4.2 > for details )
  - Step 3 Disable alarm email in < Alarm > page
  - Step 4 Power off and remove the failed Master EC Box from connection
  - Step 5 Install the new Master EC Box to the connection and power it on
  - Step 6 Click "Start Connection "in < Overview > page for the relevant Master IP group
  - Step 7 Configure the new Master EC Box in < EC Box Setting > page such as Name, Location
  - Step 8 Enable alarm email in < Alarm > page
- 2. How to replace a failed certain level slave EC Box with a new one?
  - **Step 1 -** Prepare a new slave EC Box and set the slave EC Box level accordingly (Please refer to user manual < 1.5 > for details )
  - Step 2 Prepare an appropriate length Cat. 5 / 6 cable
  - Step 3 Disable alarm email in < Alarm > page
  - **Step 4** Use a Cat. 5 / 6 cable to bridge over the failed slave EC Box which will be replaced to minimize log / data loss
  - Step 5 Power off and remove the failed slave EC Box from connection
  - **Step 6** Install the new slave EC Box, cancel the cable-bridging and reconnect the slave EC Box to the previous and next one
  - Step 7 Power on the new slave EC Box
  - Step 8 Configure the new slave EC Box in < EC Box Setting > page such as Name, Location
  - Step 9 Enable alarm email in < Alarm > page



Ignore step 2 and 4 if the failed slave EC Box is in the last level

- 3. How to move out a slave EC Box ( without a replacement )?
  - Step 1 Prepare an appropriate length Cat. 5 / 6 cable
  - Step 2 Disable alarm email in < Alarm > page
  - Step 3 Use the Cat. 5 / 6 cable to bridge over the removed slave EC Box to minimize log / data loss
  - **Step 4 -** Power off and remove the slave EC Box from connection
  - **Step 5 -** Reconfigure and reset the level for the affected slave EC Box ( es ) which next to the removed slave EC Box
  - **Step 6 -** Disable the removed slave EC Box in **< Setup >** page
  - Step 7 Enable the EC Box (es) in < Setup > page based on the new level setting in Step 5
  - Step 8 Click "Apply " to save the setting change
  - Step 9 Enable alarm email in < Alarm > page



Ignore step 1, 3, 5 and 7 if the removed slave EC Box is in the last level

- 4. How to add an extra slave EC Box to an existing Master IP group?
  - **Step 1 -** Prepare a new slave EC Box and set the slave EC Box level accordingly ( Please refer to user manual < 1.5 > for details )
  - Step 2 Prepare an appropriate length Cat. 5 / 6 cable
  - **Step 3 -** Disable alarm email in **< Alarm >** page
  - Step 4 Install, connect and power on the new slave EC Box
  - **Step 5 -** Reconfigure and reset the level for the affected slave EC Box ( es ) which next to the added slave EC Box
  - Step 6 Enable the added slave EC Box in < Setup > page
  - Step 7 Enable the EC Box (es) in < Setup > page based on the new level setting in Step 5
  - Step 8 Click " Apply " to save the setting change
  - Step 9 Configure the new slave EC Box in < EC Box Setting > page such as Name, Location
  - Step 10 Enable alarm email in < Alarm > page



Ignore step 3, 5, 7 and 11 if the added slave EC Box is in the last level

#### **InfraGuard Manager – IGM-03**

- 1. Try to login InfraGuard Manager IGM-03 but the web browser only shows "HTTP 404 Not Found "
  - Step 1 Services for web server in management PC started ?
    Make sure the services is started. Go to Control Panel > Administrative Tools > Services > Apache2.2 and make sure the status is "Started"
  - Step 2 Port for web server in management PC is occupied by other service?
    Check if the port for web server is used by other service or not. If yes, please release the port of that particular service and assign another port for it.
  - Step 3 Port for web server is added in the firewall of management PC ?
    Check if the port is added in the firewall. If not, please add and enable the connection in the firewall. ( Please refer to user manual < 5.2 > )

## Part XI. Optional Accessories





- One sensor for temperature & humidity
- Low profile and light weight design with a magnetic base for easy affixing to rack

Part no.:

**IG-TH01-2M** with 2M cord **IG-TH01-4M** with 4M cord





· Safely operated smoke detection

Part no.:

**IG-S01-1M** with 1M cord **IG-S01-3M** with 3M cord





- · Fluid leakage detection
- 5M rope round the rack bottom to detect any fluid flowing to the rack area
- IP65 cable joint connectors provided

Part no.:

IG-W01-3M with 3M cord

# Temp. Sensor



- · Detection for temperature
- Low profile and light weight design with a magnetic base for easy affixing to rack

Part no.:

IG-T01-2M with 2M cord
IG-T01-4M with 4M cord



## Shock Sensor



Alert the physical vibration on the rack

Part no.:

IG-V01-1M with 1M cord
IG-V01-3M with 3M cord

## Part XI. Optional Accessories



#### **Inductive Door Sensor**



- · Light weight, mini size & adhesive
- · No custom cutting required on doors
- Easy for existing rack retrofit or integration to new rack

Part no.:

IG-DSI-2M with 2M cord
IG-DSI-4M with 4M cord



#### **Mechanical Door Sensor**



- Low cost
- Precise
- Cost efficient integration to new rack
- · Custom cutting required on door

Part no.:

IG-DSW-2M with 2M cord IG-DSW-4M with 4M cord



#### **LED Beacon**



· Highly visible for alerting user to alarm status

Part no.:

IG-FB03-1M with 1M cord IG-FB03-3M with 3M cord



## **LED Light Bar**



- Auto ON / OFF by door sensor detection
- Manual ON / OFF by software remote
- · Magnetic base for easy affixing to rack
- Dimension ( W x D x H ): 20 x 300 x 12 mm

Part no.:

CLB-IX-002 with 2M cord
CLB-IX-003 with 3M cord

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