# Infra Solution®

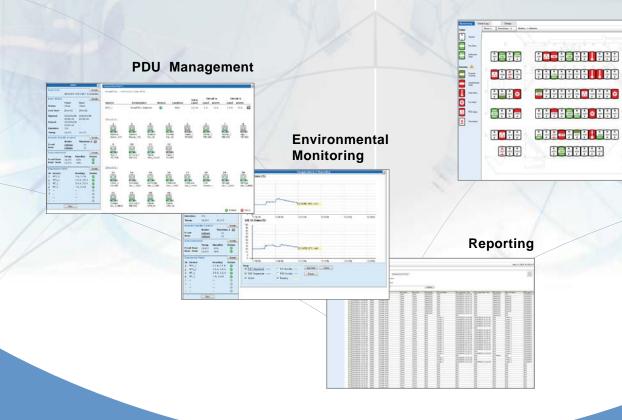
Integrated IT Access Control & Monitoring for Data Center



Security

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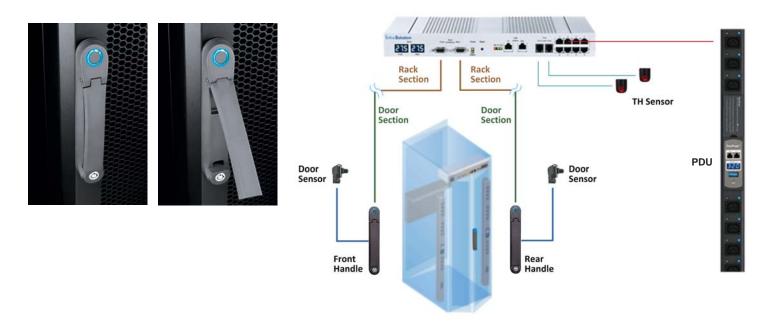
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### Overview



### InfraSolution 820 / 840

Rack level access security has become critically important for all data centers and server rooms. More and more IT managers have recognized this need and are upgrading their racks with smartcard access control. To meet the increasing needs, InfraSolution 820 / 840 are designed for the global IT branded rack. Its Universal Mounting Cut-out generally allows easy integration with most third party racks so costly & complicated door customization is not required.



## **SmartCard Compatibility**

Compatibility issues between different standard on access cards are a major area for customers to consider when deploying any access control solution.

InfraSolution 820 / 840 series caters for the 2 most common SmartCard alternatives - **Proximity & MiFARE** format. The users can keep using their existing SmartCard to apply on the rack access system if their SmartCards are in either format as above.





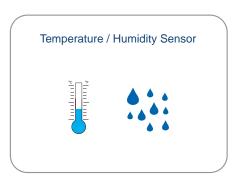
## **Overview**



## **Functionality**

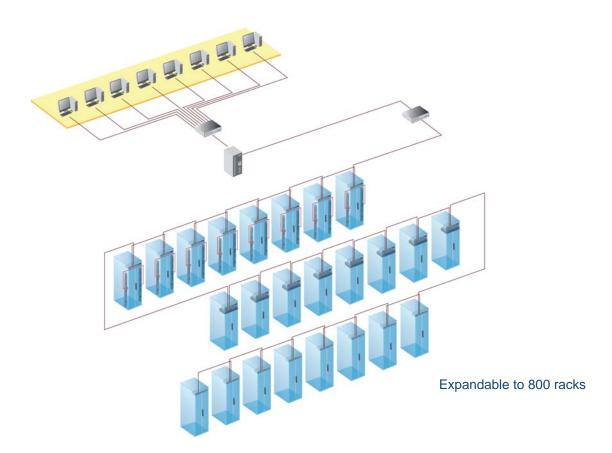
Functionality is not limited to rack access management. In addition to rack access control, InfraSolution can be further expanded to PDU and environmental management. Users can remotely manage the above devices via the centralized InfraSolution GUI.





## **Expandability**

The managing capacity of InfraSolution is expandable to a maximum of 800 racks. And the InfraSolution GUI allows multi concurrent client access to remotely manage the SmartCard locking handles. InfraSolution 820 / 840 series provides the scalable flexibility to the data center projects, especially to the project with several phases.



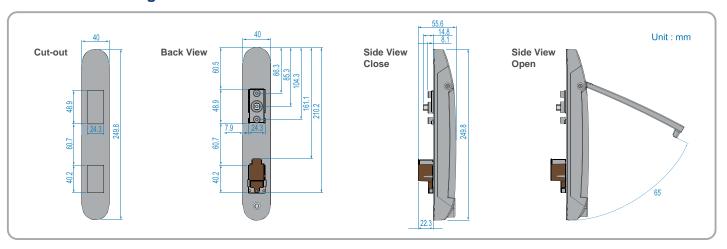


### **SmartCard Handle**

The patented HV-800 smartcard handle is an intelligent design with universal mounting cut-out. Recently, most global branded racks have applied a standard handle cut out dimension on the door. To achieve the highest level of interoperability offered in the rack industry, the HV-800 handle also applies the same mounting dimension. It avoids costly and complicated door customization for the smartcard handle integration.

**Patented and Worldwide Patents** 

## **Universal Mounting Cut-out**



## **HV-800P Proximity SmartCard Handle**



### **Features**

- Intelligent design with patent
- Built-in digital temperature sensor
- Dual locking system ( electronics and mechanical lock )
- Electronic lock released either by SmartCard or management software
- SmartCard access compatible to mainstream security system with Proximity or MiFARE card technology
- Handle LED indicates the status of power, smartcard detection, access authorization and visual alarm for unauthorized open







REACH

## **HV-800M MIFARE SmartCard Handle**



## **Handle Releasing**

InfraSolution HV-800 handle allows 3 lock releasing ways - by Software remote, SmartCard or Mechanical key.







# Infra Solution®

## **Key Lock**

For fail safe design, the mechanical lock can be override the electronic lock to release or lock the handle.

2 key lock upgrades available for specific requirement :

Individual key lock, set of 2 for front & rear door (ISK-C051)
Up to 500 individual key-locks available

### Unique key lock (ISK-UKL)

Unique key dedicated to single project / customer regionally. For project size over 500 racks



### **Control Box**

Control Box consolidates all the hardware components in a rack and controls the management functions. All control boxes in rack can be connected to each other for centralized management.

InfraSolution offers 2 optional control box models:

InfraBox 820 - Rack Access Management

InfraBox 840 - Extra Integration with Environmental Sensor and Intelligent PDU



### **Features**

- Centralized monitoring of the front and rear HV-800 handle access control and door status
- Remote door programming / opening management
- Access control event reporting with the GUI
- Standalone mode storage up to 999 events



- PDU RJ45 connection port x 8
- Temp. / Temp. + Humid. RJ11 sensor port x 2



### **Door Sensor**

Door Sensor is an important component which should never be overlooked.

InfraSolution provides high quality, durable and precise door sensors to ensure 100% right door detection.

## (I) Inductive Door Sensor, pair (ISO-DSI)





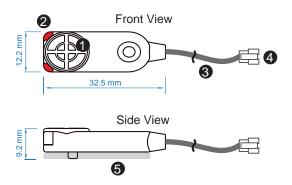
### **Specification**

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

### Requirements



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

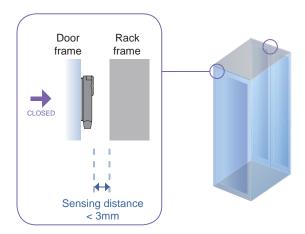


1	Sensor area	
2	Red LED ( light up while door opening )	
3	2m cable	
4	Cable jack ( connect to handle )	
6	2mm adhesive tape	

## **Operation**

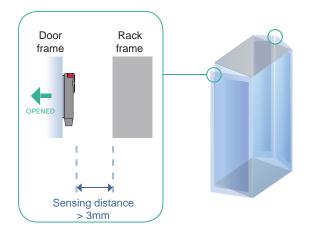
## DOOR CLOSE

- Close door
- Inductive sensor detects the rack frame
- DOOR CLOSE SIGNAL sends out



### DOOR OPEN

- Open door
- Inductive sensor loses detection with rack frame
- Red LED of sensor light up
- DOOR OPEN SIGNAL sends out





## (II) Mechanical Door Sensor, pair (ISO-DSW)





### **Specification**

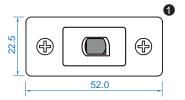
- low cost / precise
- cost efficient integration to new rack

### Requirements 4

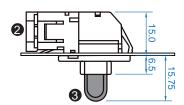


- custom hole cutting required on doors
- ordering a sample for custom cutting is highly suggested
- min. actuation distance: 3.00 mm
- total travel distance: 9.25 mm

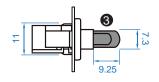








## Side View

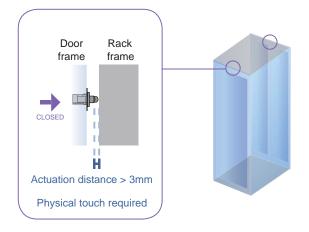


0	Steel mounting plate with 2 screw holes
2	Cable connector
3	Press button ( total travel distance : 9.25 mm )
	( min. actuation distance : 3.00 mm )

## **Operation**

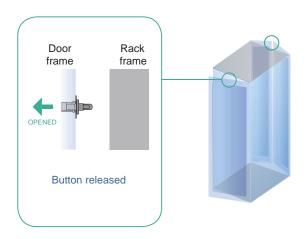
### DOOR CLOSE

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



### DOOR OPEN

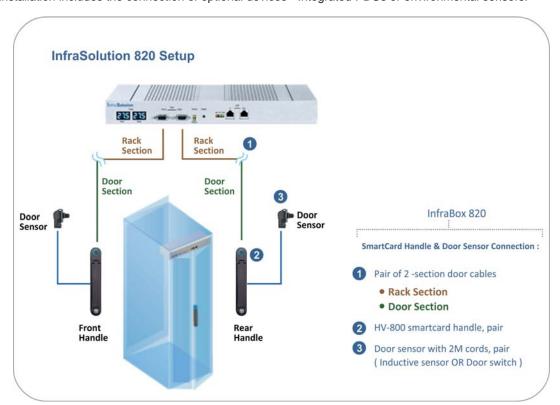
- Open door
- Sensor button is released
- DOOR OPEN SIGNAL sends out

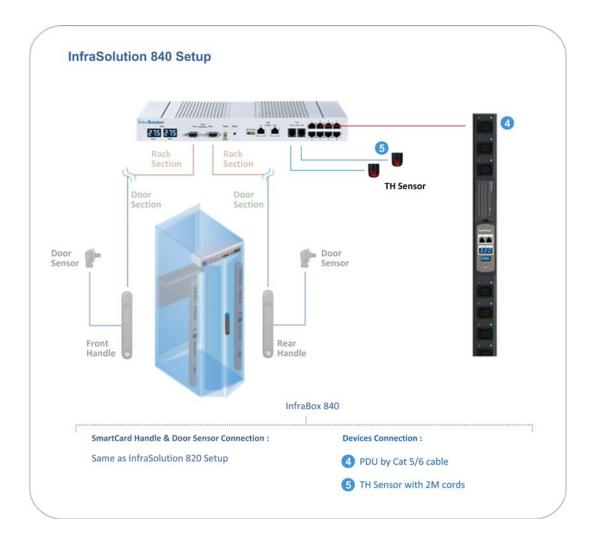




### Installation

Basic hardware installation per rack involves the 3 Key Hardwares setup - SmartCard handle, Control box and Door sensor. Add-on installation includes the connection of optional devices - Integrated PDUs or environmental sensors.





## **Options**

# Infra Solution®

### Temperature & Humidity Sensor, pc



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

FC ( FEAC

## Proximity SmartCard, Pack of 10



- Proximity 26-bit format
- Single card for multiple application
- Custom layout available

ISC-P10

## MiFARE SmartCard, Pack of 10



- MiFARE 26-bit format
- Single card for multiple application
- Custom layout available

ISC-M<sub>10</sub>



- Compatible to Proximity 26-bit SmartCard format
- Convenient way for SmartCard ID checking
- Driverless for easy installation

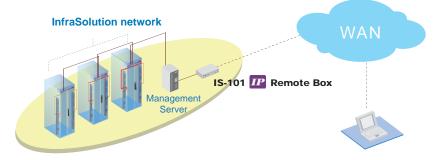


- Compatible to MiFARE 26-bit SmartCard format
- Convenient way for SmartCard ID checking
- Driverless for easy installation

## Remote Box

- Applicable to remote offices and branches
- Allow user IP remote access to the server to manage the InfraSolution network





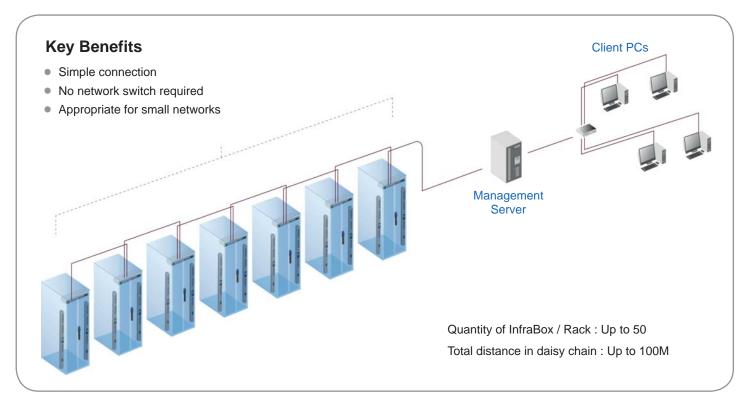
## **Network Setup**



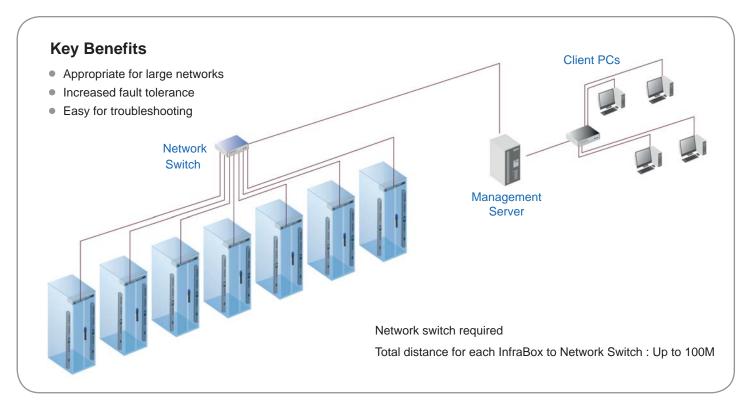
InfraSolution provides 3 connection ways - Daisy Chain , Star , Mixed.

Which connection users apply is related to the site scale, environment and users' requirements.

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

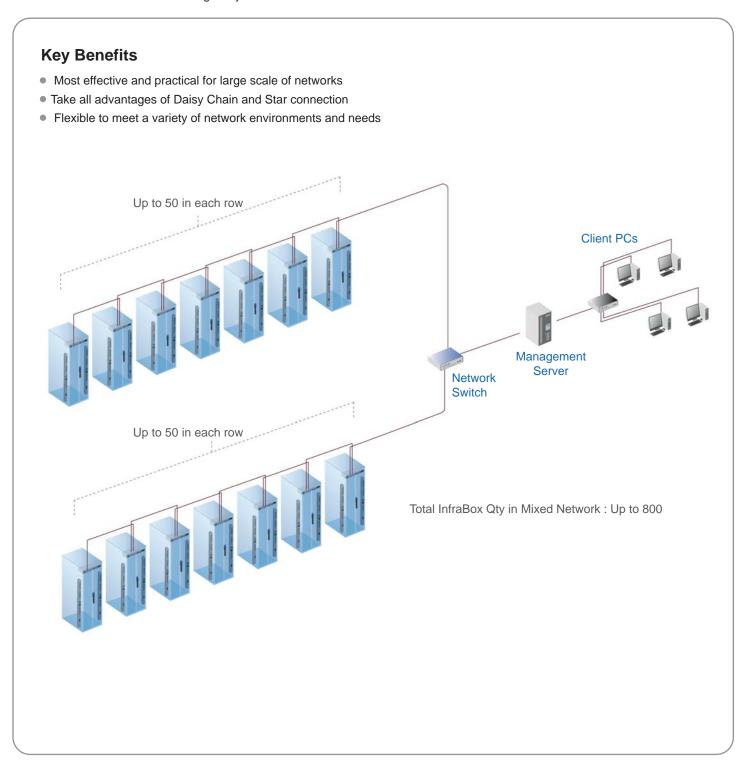


# < II > Star Connect to network switch by a point-to-point connection





## < III > Mixed Combining daisy chain with star connection

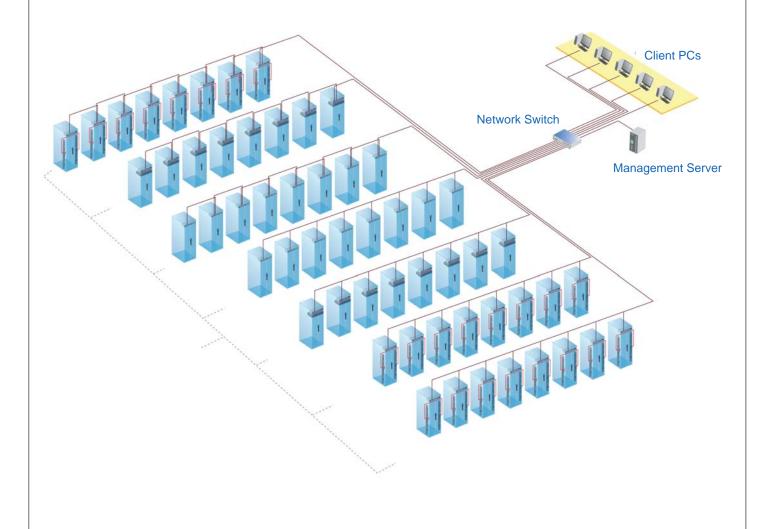




## < I > Data Center

By mixed connection, InfraSolution can be scalable up to 800 racks and the 820 and 840 InfraBoxes can be coexisted in the same network. Users are enabled to manage and remotely access all racks under a centralized and user friendly GUI.

- Connect the 1st InfraBox in each daisy chain to the network switch
- Connect the management server and client PCs via the network switch
- Up to 800 Infraboxes / Racks

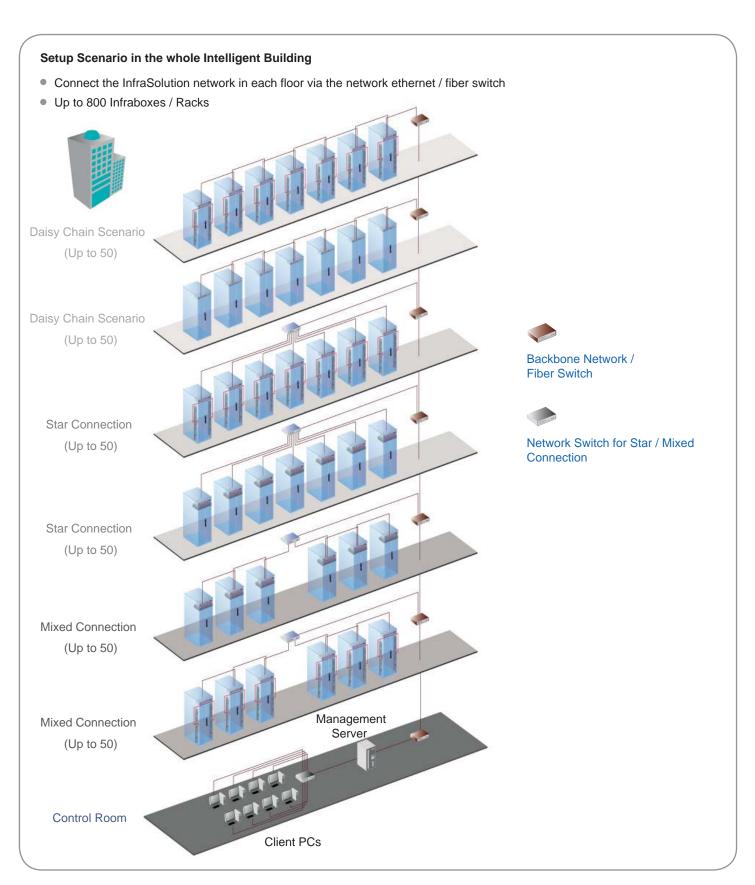




## < II > Intelligent Building

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 system allows equipment to be distributed throughout a building simply by deploying an Ethernet network. To keep capital costs down, InfraSolution 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.



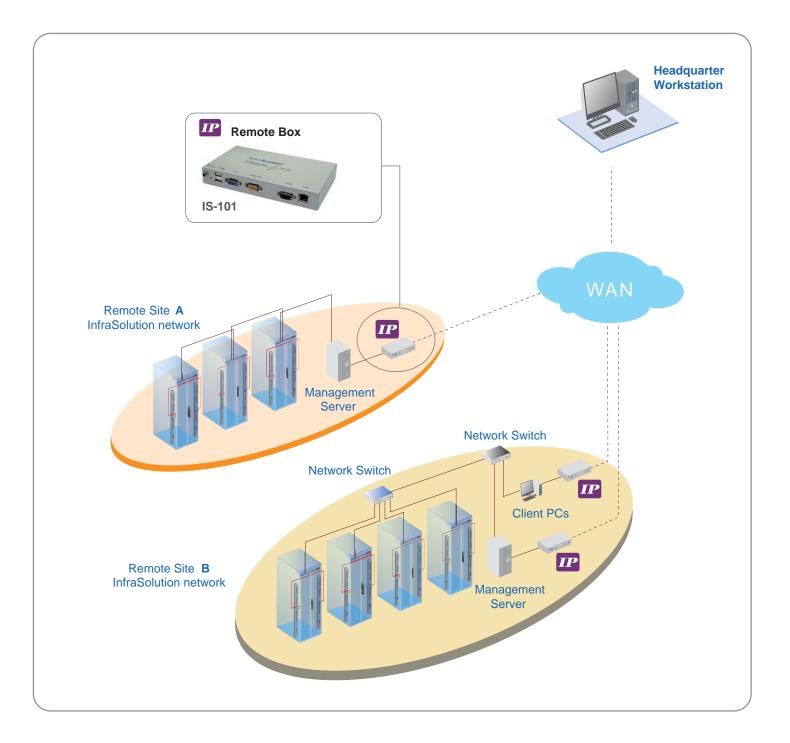
# **Application**



## < III > Remote Site

Besides data centers and intelligent buildings, InfraSolution can be also applied to the remote site for access and monitoring over IP anytime and anywhere.

Optional IP Remote Box IS-101 with SSL security is available for the remote management over IP.

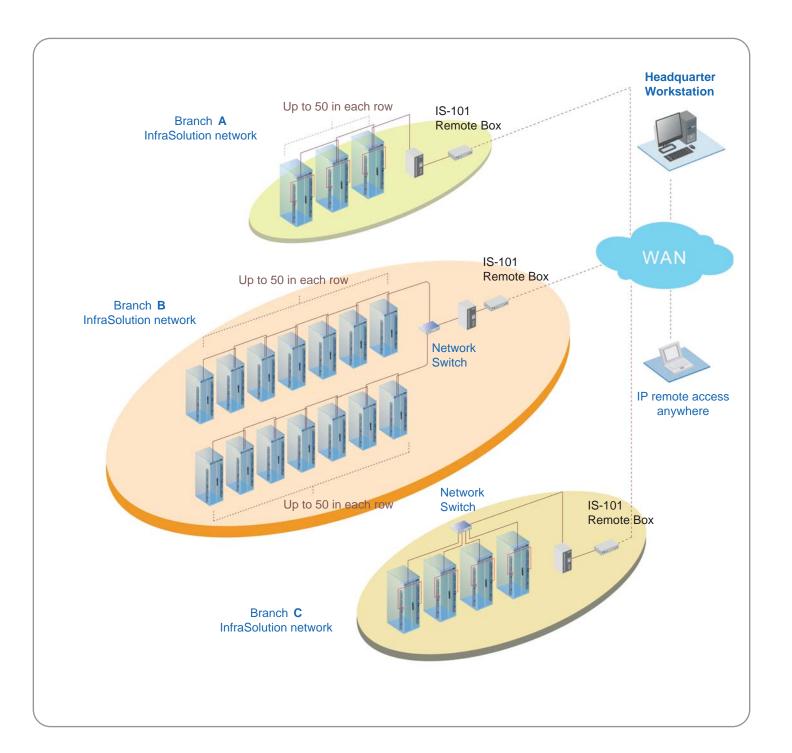




## < IV > Branches

## How to manage a number of branches by InfraSolution

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



# Infra Solution® Manager

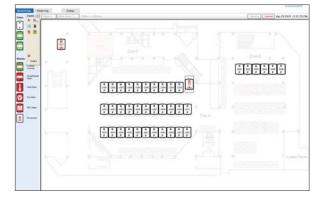
InfraSolution Manager provides a simple graphic user interface (GUI) to centralize the management of a large number of data center server racks in remote locations across Ethernet TCP/IP networks. It is basically the engine of InfraSolution and is designed to provide intelligent secure physical layer card access that remotely releases rack locking handles as well as centralized management for control, reporting and audit purposes. When using the InfraBox 840 series, the InfraSolution Manager also allows GUI remote management for Intelligent PDUs.

#### **Features & Benefits**



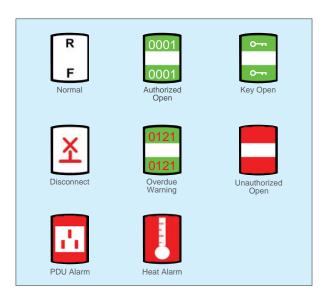
### **Simple Configuration**

InfraSolution Manager is a simple way for the administrator to allocate manager profiles, visitor access and operating times.



### **User Friendly GUI**

Graphic design of cabinet icons that can be used in conjunction with the data center floor plan. The layout design allows the user to remotely manage cabinets connected to the InfraSolution network system in an efficient way.



### **Clear Indication of Event Occurrence**

When different events occur, the icons change appearance for easy indication and monitoring.



# Infra Solution® Manager

### Table for the status on cabinets, integrated PDUs and environmental sensors

By double clicking a particular cabinet icon, a table will be shown for the status of the corresponding cabinet.

### First level table interface provides the following monitoring/ control features:



#### **Doors**

- Front and rear door open / close status
- The user SmartCard ID in last time door open / close
- Temperature at front and rear doors recorded by the built-in temperature sensors in the HV-800 handles

#### Door Remote

Remote Opening function for the Rack Cabinet

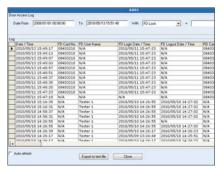
### Temperature / Humidity

 Temperature/ Humidity inside the cabinet recorded by the TH sensors affixed on the doors

### Intelligent PDU

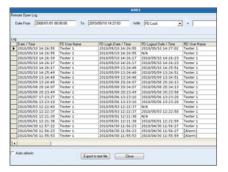
Data of the current and alarm set of the PDU

### Second level table interface on each part provides more detailed information :



### Door

 Door access log for the SmartCard/ key open / close history recorded during the time period selected



### Door Remote

 Door access log for the software remote opening



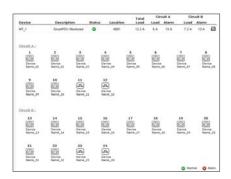
#### Environmental

 Curve diagrams for continuous temperature monitoring



### **PDU Switching**

 Switch ON/ OFF function key for Individual outlet socket

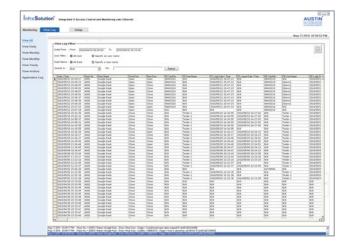


### **PDU Monitoring**

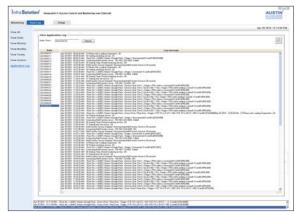
 Details aggregate current data in circuit A and circuit B

### Reporting - Best Tools for Management & Audit

InfraSolution provides simple cost effective management of the SmartCard/ Lock key / Software Remote door access to cabinets in data center. The centralized management provides total reporting with detailed access logs and event occurrences for audit purposes. The view log for specific time period, server cabinet, SmartCard ID, system component can be searched easily for an efficient reporting management.



### View application function



### View Log

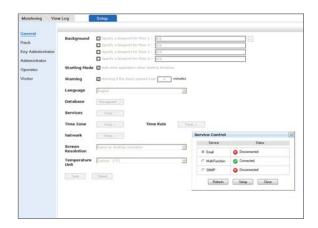
View Log function provides a total reporting for the event occurrences on all the rack cabinets and users in the InfraSolution system. Filtering or searching on specific date, rack and user can be made.

### Specific rack cabinet information



### Alert Problem via E-mail

InfraSolution Manager allows the alarming on unauthorized access, environmental conditions, intelligent PDU issues to be sent to the users via e-mail. Users can be alerted for the problem immediately by the management software and take the corresponding action to fix the issue.





# Infra Power® MTS - Switched PDU Series













The InfraPower MTS Switched PDUs focus on improving energy efficiency and data center reliability. Used in conjunction with the InfraSolution they allow remote control and monitoring of the intelligent PDU via the centralized GUI.









cUL certified for specific configurations

### **Features & Benefits**

- Remote control to individual outlets and remote monitoring on the total current consumption
- Centralized management on the intelligent PDUs via a simple secure GUI, InfraSolution Manager
- True RMS current monitoring indicates remaining capacity before adding new device to the PDU
- Hot-pluggable ammeter with blue light LED display provides visible warning before the current overload
- LED located near each outlet indicates the individual switch ON/ OFF status
- · Alerts users to the event by E-mail for taking action before the power overload by the alarm threholds setting
- Outlet naming, passwords, secure web server and password protection
- Optional circuit breaker avoid nuisance tripping casued by normal in-rush current
- · Zero U (vertical) and rackmount (horizontal) form factors available

### **PDU Connection**

The InfraBox-840 provides 8 expansion ports for connecting integrated intelligent PDUs. MTS switched PDU can be simply connected to InfraBox using a standard Cat 5/6 patch cord.



( Connecting MTS PDU to the expansion ports of InfraBox840 via Cat5/6 cable, Max. 8 PDUs per InfraBox )

### **Options**



### **RMS** current meter

Field-replaceable design helps to eliminate the maintenance downtime by simply replacing the defective current meter without interruption of service.



# Circuit breaker / Resettable fuse

Individual branch rated circuit breakers that protect load segments to ensure increasing reliability. Circuit breakers with flat rockers are fully shrouded to prevent accidental on/off operation.













The InfraPower MT Monitored PDUs also focus on improving energy efficiency and data center reliability. Used in conjunction with the InfraBox-840, they allow monitoring of the PDU via the centralized GUI, InfraSolution Manager.









cUL certified for specific configurations

### **Features & Benefits**

- Provides local & remote monitoring to the aggregate current draw on each PDU
- True RMS current monitoring allows users to receive the most accurate current reading
- Centralized remote monitoring by the simple secure GUI, InfraSolution Manager
- Blue light LED display on the hot-pluggable ammeter provides the current reading of the PDU
- · Alarm thresholds alert users to the potential problems before the circuit overload
- · Alerts of events by E-mail
- Outlet naming, passwords, secure web server and password protection
- Optional circuit breaker avoid nuisance tripping casued by normal in-rush current
- Wide range of input and output connections allows users to adapt to varying power requirements
- Zero U (vertical) and rackmount (horizontal) form factors available
- Multiple outlet configurations for variety of application environments and power requirements

### **PDU Connection**

The InfraBox-840 provides a maximum of 8 expansion ports to connect MT PDU to the InfraBox using a standard Cat5 / 6 patch cord.



( Connecting MT PDU to the expansion ports of InfraBox840 via Cat5/6 cable, Max. 8 PDUs per InfraBox )

### **Options**



### **RMS** current meter

Field-replaceable design helps to eliminate the maintenance downtime by simply replacing the defective current meter without interruption of service.



### Circuit breaker / Resettable fuse

Individual branch rated circuit breakers that protect load segments to ensure increasing reliability. Circuit breakers with flat rockers are fully shrouded to prevent accidental on/off operation.

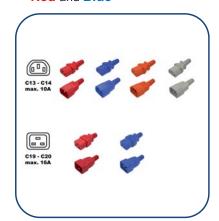
## **Colored PDU Casing**

- Color PDU casings for Visualizing Power Sources
- Suggested application : Pair of PDUs with different color casings for different power sources
- Color available for vertical PDU casing : Red, Blue, Light Grey and Black



### **Colored Power Cords**

- Color power cords for Visualizing Power Sources
- Color available for 6ft / 10ft C13-C14 power cords : Red, Blue, Orange and Light Grey
- Color available for 6ft C19-C20 power cords : Red and Blue



# **Supplementary Information for InfraPower MTS / MT Series**

### **PDU Outlets**

















**NEMA 5-20R** 

IEC320 C13

IEC320 C19

BS1363 45°

BS1363 90°

BS1363 135°

CEE 7 Schuko

### **Power Plugs**

US



15 Amp **NEMA 5-15P** 



20 Amp **NEMA 5-20P** 



20 Amp NEMA L5-20P



30 Amp NEMA L5-30P



20 Amp NEMA L6-20P



30 Amp NEMA L6-30P

**IEC** 



16 Amp IEC320 C20



16 Amp 60309



20 Amp Open end



60309

UK



13 Amp BS1363



16 Amp IEC320 C20



16 Amp 60309



20 / 32 Amp Open end



32 Amp 60309





16 Amp Schuko



16 Amp IEC320 C20



16 Amp 60309



20 / 32 Amp Open end



32 Amp 60309

## **Optional Accessories for InfraPower MTS / MT Series**



F-16A / 20A / 30A / 32A Resettable fuse



CR-16A / 20A / 30A / 32A Circuit breaker with protection

cover for vertical PDU



**VMS** Vertical button mounting



**VMB** Vertical bracket mounting



Horizontal rack mounting



## Design. Manufacturing. Global Services.

Founded in 1995, **Austin Hughes Electronics Ltd** is a design and manufacturing group that offers a broad range of solutions based around 19 inch rack mount technology. These solutions include InfraSolution remote access control and locking, InfraPower intelligent remote management power solutions, CyberView LCD Keyboard and KVM drawers & InfraCool intelligent remote cooling system.

**Austin Hughes** has ISO14001 and ISO9001 approved design, manufacturing, assembly and test facilities in Hong Kong and China. Austin Hughes supports a worldwide customer base, through its global locations in the Americas, EMEA and APAC and through its extensive authorized channel partner support network.

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