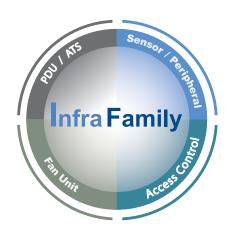
Infra Family

Total Intelligent Rack Solutions







Solutions for IT racks have become critically important for all data centers and server rooms. Austin Hughes offers a broad range of data center infrastructure solutions based on 19-inch rack mount architecture. These solutions include our Infra Power®, Infra Cool®, Infra Guard and Infra Solution® product lines. Whether you require a single piece of infrastructure, or a fully integrated intelligent rack solution, Infra Family delivers the perfect solution for your requirements.

Infra Power®



- 1-PH / 3-PH Intelligent, Metered & Basic PDUs in 0U, 1U or 2U chassis
- 1-PH / 3-PH Intelligent & Metered ATS solution in 1U or 2U chassis

Quality reliable Power Distribution Units (PDUs) to suit all your requirements: basic, metered, intelligent PDUs in single or three phase. Coloured or dual feed PDUs enable clear differentiation of primary and redundant power feeds within the rack. Our comprehensive PDU range is complimented with ATS (Automatic Transfer Switches) and In-line Meters, providing all the power management solutions you require.

Infra Cool® Airflow Control

- Intelligent & Basic fan units for your rack level airflow solution
- Various fan unit form factors for different cooling requirements

Temperature control is one of the top missions for data center managers. Our cost-efficient solution is designed to provide cooling as an integral part of your rack equipment. Intelligent fan models provide local and remote management capabilities. In addition, fan speeds can be automatically adjusted according to the temperature detected by the sensor. InfraCool solutions provide appropriate airflow while minimizing operation costs for data centers.

Infra Guard Sensor System



- A wide range of sensors for complete environmental monitoring
- Maintain optimum operational conditions within the data center

Remote management of IT rack environments is vital for mission critical data centers. Environmental issues affecting your racks, including high temperature & humidity, smoke, water leakage, physical threats, unauthorized door access, and power & cooling inefficiencies, can have a significant impact on operational performance. Our centralized environmental monitoring system was developed to help you achieve high levels of operational stability.

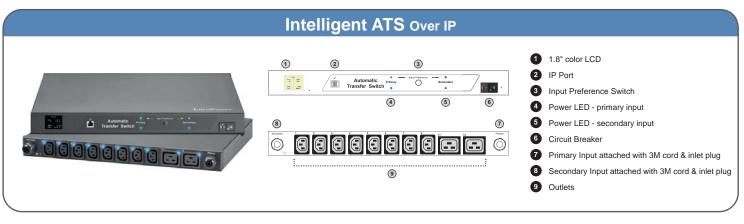
Infra Solution® Access Control

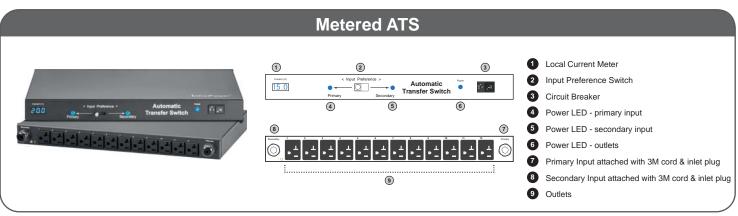
- Standalone package provides a high level of rack access security
- Networked package enables complete rack access management with software

Enhance rack level security with the addition of smart card enabled locks, allowing access to the rack for authorized users only. Dual authentication with Smart Card and a touchscreen keypad provides even more advanced rack access control and security. With InfraSolutionX networked access control, the added benefits of Environmental Management and PDU Management are combined in an all-in-one solution.



Most data centers provide power source redundancy in order to ensure critical devices have no power related downtime. Many rackmount IT devices, however, are not designed to take advantage of power redundancy. For single-corded devices, the InfraPower ATS is a perfect fit to provide power failover. It includes dual power inlets for connection to both a primary power source and a redundant, secondary power source.





ATS Series	Metered	Monitored	Swit	ched
A13 Series	MD	W	ws	WSi
Outlet Level Measurement Over IP				~
Outlet ON / OFF Switch Over IP			~	~
Input & Circuit Monitoring Over IP		~	~	~
Input Switching Over IP		~	~	✓
Input Switching Locally	~	~	~	✓
Local Meter Monitoring	✓	✓	~	✓
Transfer Time	10 - 16ms	10ms	10ms	10ms
Power Source Switching Notification		~	~	✓
Alarm Alert		~	~	✓
Reporting & Logs		~	~	✓
Free Management Software		~	~	✓
Web Based GUI		~	~	✓
SNMP Capability V2 / V3		✓	~	✓
Single Circuit & Dual Circuit Models	~	~	~	✓
Hydraulic-magnetic Circuit Breaker (MCB)	~	~	~	✓
Mounting Bracket w/ Cord Retention Tray Included	~	~	~	~
1-Phase : 230V (10A - 32A)	~	~	~	~
110V / 208V (15A - 30A)	*	~	~	✓
Outlet Type: US NEMA / C13 / C19 / UK / SCH / FR	~	~	~	~
IEC309 16A / IEC309 32A	~	~	~	~
L620R / L630R	~	~	~	~
Outlet # : 1 - 24	~	~	~	~
Custom ATS on Request	~	~	~	~





Rapidly escalating power requirements require a complete suite of rack PDU models to help data center managers meet rising demand.

Infra Power intelligent PDUs can be integrated with your rack to provide power management, including monitoring from the PDU branch Level on down to the outlet. Switched models are also available that can provide remote on/off outlet switching functionality from anywhere in the world. Offered in many sizes and configurations, our PDUs provide the voltage, current, outlet number and type of connections required to fit any need.











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PDU series	D	Metered	Monitored		Switched	
PD0 series	Basic	MD	W	Wi	ws	WSi
Outlet Level Measurement Over IP				~		~
Outlet ON / OFF Switching Over IP					~	~
Circuit / Phase Amp - kWh Measurement			~	~	~	~
Hot-Swappable Meter			~	~	~	~
Billing Grade Meter Accuracy Within +/- 1%			~	~	~	~
1.8" Color LCD Meter (1-Phase)			~	~	~	~
2.8" Color Touch LCD Meter (3-Phase)			~	~	~	~
32 / 16 Daisy Chained PDUs Supported on 1 IP			~	~	~	~
Free Management Software			~	~	~	~
SNMP Capability V2 / V3			~	~	~	~
Phase Balance % for 3-Phase PDUs			~	~	~	~
Temp., Humidity, Airflow & Door Sensors			~	~	~	~
RCM (Residual Current Monitoring Module)			~	~	~	~
Door Mount PDU Panel w/ 4.3" Color LCD			~	~	~	~
Wifi Kit (One Kit Supports Max. 32 PDUs)			~	~	~	~
Local Meter		~	~	~	~	~
Resettable Fuse / Hydraulic MCB	*	~	~	~	~	~
ELCR / Surge Protector / EMI Filter	*	~	~	~	~	~
Tool-less Mounting for Vertical PDU	*	~	~	~	~	~
0U / 1U / 2U Form Factors	~	~	~	✓	~	~
Operating Temperature -5°C to 60°C	~	~	*	✓	~	~
1-Phase : 230V / 208V / 110V	~	~	~	✓	~	~
1-Phase Dual Feed: 230V / 208V / 110V	*	~	*	✓	~	~
3-Phase : 400V / 208V	*		*	✓	~	~
3-Phase Dual Feed: 400V / 208V	*		*	~	~	~
Outlet: US NEMA / C13 / C19 / UK / SCH / FR	*	~	*	~	~	~
Lockable IEC	*	~	*	~	~	~
Fused IEC	*	~	*	~	~	~
Custom PDUs on Request	~	~	~	~	~	~





Sophisticated W Meter

Infra Power® intelligent PDUs are supplied with a sophisticated meter. The W meter provides not only local metering, but also daisy chain connection ports to connect up to 32 / 16 PDUs and 2 optional external sensors.

The meter is hot swappable and field replaceable without needing to power down the PDU or attached mission critical equipment.

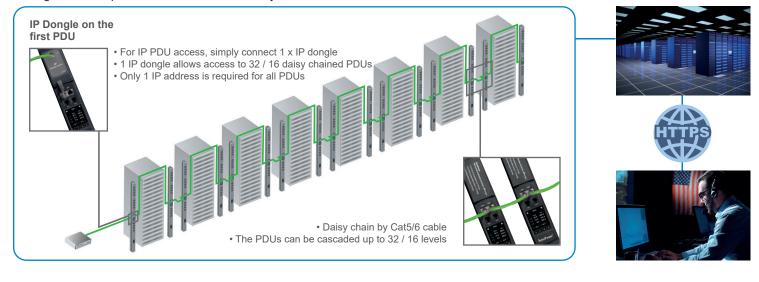




High Efficiency PDU Remote Management

The patented IP Dongle provides IP remote access to the PDUs via a true network IP address chain. Only one network IP address is required for up to 32 / 16 PDUs in a single daisy chain.

InfraPower offers three types of remote management options: the free downloadable IPM-04 Management Software, a built-in Web-based GUI, or 3rd Party DCIM via SNMP. The free but comprehensive IPM-04 software supports up to 50 IP groups, providing robust remote management for up to 1600 / 800 PDUs from anywhere that has internet access.









IP Access Devices

IP Dongle

- US & worldwide patents
- · Hot pluggable
- · Allows IP remote access
- · Supports up to 16 daisy chained PDUs
- · Saves cost on IP addresses
- SNMP capability v2/v3

IPD-02-S / IPD-H02-S



Dual Lan IP Dongle

- · US & worldwide patents
- Supports 10/100 & gigabit LAN ethernet
- · Dual LAN network failover
- Capability to access two separate networks
- Supports up to 32 daisy chained PDUs
- · Saves cost on IP addresses
- SNMP capability v2/v3
- Simultaneous software applications -IPM-04, Built-in GUI & SNMP

IPD-03-S



Optional Wifi Kit

IPD-WIFI

Sensors & Peripherals

4.3" Door Mount PDU Panel

- 4.3" color LCD touchscreen
- Supports two 1-phase or 3-phase PDUs
- Connect two PDU meters to display power, temp., humid., smoke and door status
- Enhance traditional racks with a modern intelligent look
- · Requires no damage to existing equipment
- Plug & play

IP-ED-01



Temp. & Humid. Sensor Temp. Sensor

- Plug & play
- External sensor with 2M or 4M cord
- Low profile design with magnetic base for easy affixing to the rack

IG-TH01-2M/4M IG-T01-2M/4M



Smoke Sensor

- Smoke Sensor w/ 1M or 3M cord
- When smoke alarm triggers, sensor red LED lights on with beep sound continuously

IP-S01-1M / 3M



Door Sensor

- Mechanical door sensor w/ 2M or 4M cord
- · Cost efficient integration into rack

IP-DSW-2M/4M



Safety Devices

ELCB

- Earth-leakage circuit breaker
- Safety component for systems with high earth impedance to prevent shock
- Interrupts the circuit if a dangerous voltage is detected

OFF

RCM

- · Residual current monitoring
- Alerts users to current leaking from IT devices
- Reduces the danger for both the user and IT system



EMI Filter

- · Maintains power stability
- Suppresses conducted interference on a signal/power line



SPT

- · Surge protector
- · Enhances device protection
- Grounds unwanted voltages above the safe threshold







Outlets

Lockable IEC Outlet

- Lockable IEC outlet PDU models are available to secure plugs and prevent accidental disconnection
- · Supports standard or switched outlets
- Compatible with InfraPower lockable IEC power cords for outlet locking features



Power Cords

Lockable IEC Cable

- Connect to InfraPower lockable IEC outlets to secure plugs and prevent accidental disconnection
- Selection:

Black / Grey / Red / Blue / Orange / Green

C14 - C13: 0.5M / 1M / 2M C20 - C19: 0.5M / 1M



Fused IEC Outlet

- · Prevent overload of the active equipment
- · Avoid short circuiting of the entire PDU
- 10A Rated C13 outlet w/ 5A glass fuse
- 16A Rated C19 outlet w/ 10A glass fuse



Colored UK Power Cord

- Enhance cable management and visualize power sources
- Selection:
 Blue / Red

UK - C13 (0.75 mm²): 3ft / 6ft



Colored IEC Outlet

- Colored C13 & C19 outlets help visualize the power connections of IT devices to facilitate power distribution management
- Standard color: Black
 Optional color: Red, Blue, White
- * Optional colored outlets for W & Wi only



Colored IEC Power Cord

- Enhance cable management and visualize power sources
- · Selection:

C13 - C14 (1.0 mm²): 6ft / 10ft Blue / Red / Orange / Light Grey

C19 - C20 (1.5 mm²): 6ft Blue/Red



Colored PDU Chassis

- Colored PDU chassis allow easy identification of power paths and simplifies management of power sources
- Standard color: Black
 Optional color: Red, Blue

Green, Orange Purple, Yellow, White







Thermal management presents big challenges for today's data centers, chief among which is cooling equipment in enclosed racks. Infra Cool® intelligent cooling solutions provide appropriate airflow, while helping minimize operational costs associated with data center energy consumption. Make InfraCool an integral part of your rack cooling strategy today. F© C€ REACH



Fan Series	Door Mount Fan Panel	1U Fan Tray			Raised Floor Mount Fan	
Intelligent Master	MRF-33.9	MRF-1.3	MRF-1.6	MRF-1.9	ME oo 4	
Intelligent Slave	RF-33.9	RF-1.3	RF-1.6	RF-1.9	WF-66.4	
Basic	F-33.9	F-1.3	F-1.6	F-1.9	F-66.4	
Fan Number	9	3	6	9	4 (EC Fan)	
Total CFM	972	324 648 972		972	2172	
Airflow	Front Door Cool Air In Hot Air Out	Top Exhaust hot air out Equipment Cooling Bottom Cool air in		ent	Front Door Cool Air In	
Temp. Port	1	1			2	
Temp. Sensor	1	1			2	
Intelligent Fan Features:						
16 Daisy Chain Levels	✓	✓			×	
Auto Fan Speed Control	~	✓			X	
2.8" Touchscreen	×	×			✓	
Control Panel	~	✓			X	
Individual Fan On/Off	✓	~			✓	
Alarm Temp. Setting	~	✓			✓	
Unit CFM Setting	✓	✓			×	
Temperature Monitoring	✓	~			✓	
Fan Status Monitoring	✓	~			✓	
CFM Status Monitoring	✓	✓			×	



nfra Guard Sensor System



To maintain optimum operational conditions in data centers, getting instant notification of environmental fluctuations is vital. InfraGuard offers a wide range of sensors for complete environmental monitoring of IT racks.

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EC-300M - Master Control Box (1st Level)



EC-300 - Slave Control Box (2nd - 16th Level)



Temp. + Humid. Sensor



Temp. Sensor



Door Sensor



Water Sensor



Smoke Sensor



Shock Sensor



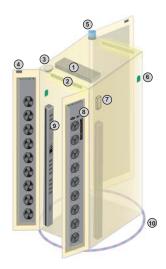
LED Beacon



LED Light Bar



Sensor Installation



Item	Qty	Item	Qty
① EC Box	1	6 TH or T Sensor	2
② LED Light Bar	2	Shock Sensor	1
3 Smoke Sensor	1	8 iFan	2
Door Sensor	2		2
⑤ LED Beacon	1	Water Sensor	1

Sensor Network Connection

- EC-300M is the 1st unit of the daisy chain
- The EC box can be cascaded up to 16 units



InfraGuard Software IGM-03

- Supports 30 IP addresses
- 480 EC boxes
- 1920 iPDUs
- 1920 iFans
- Thousands of rack sensors







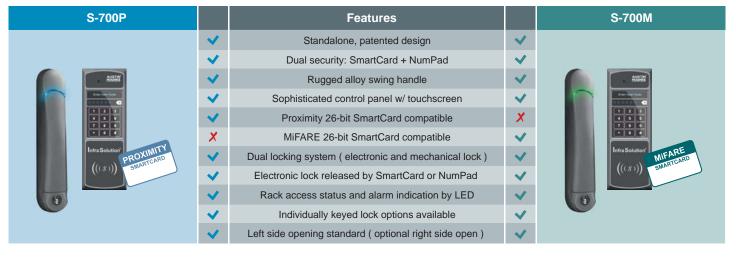
To satisfy high level data center security requirements, Austin Hughes has launched a standalone rack access solution with alloy swing handles & 2.8" touchscreen control panel. The Infra Solution® S-700 series provides an innovative yet affordable solution for secure rack access in 21st century data centers.

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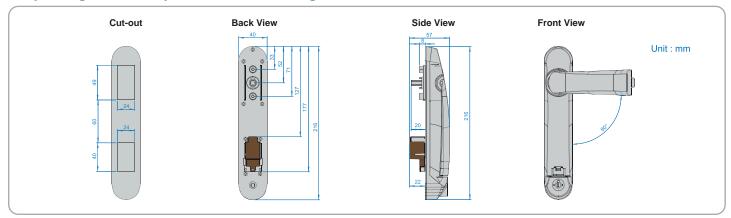


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US and Worldwide Patents



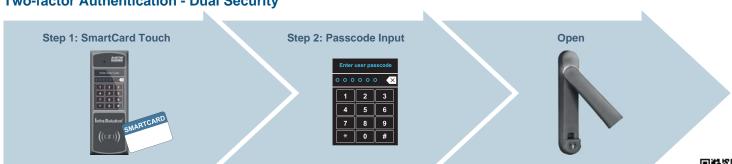
Alloy Swing Handle - Stylish Mechanical Design



Handle LED



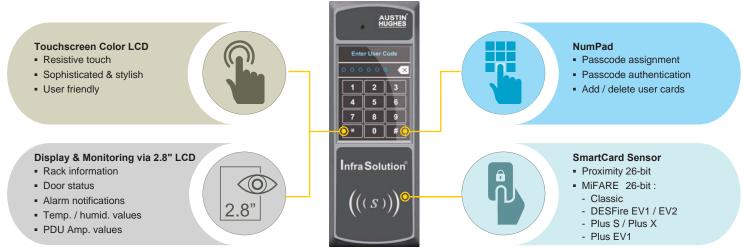
Two-factor Authentication - Dual Security



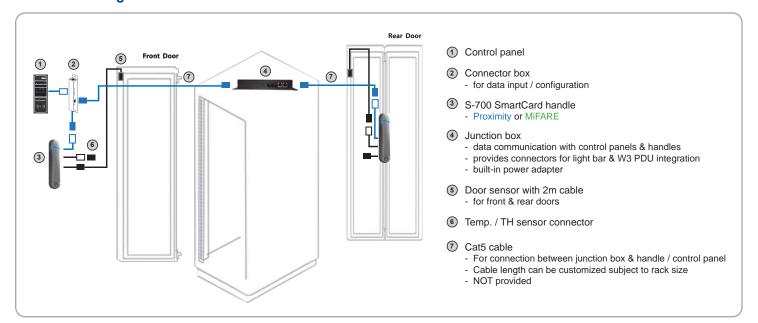




Control Panel

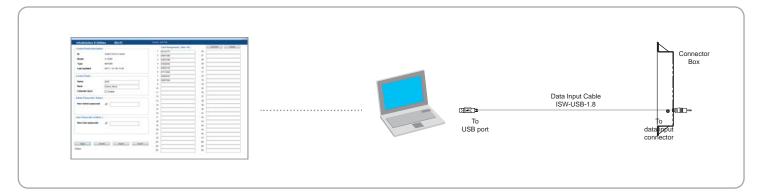


Installation Diagram



Software

Via the Free utility (ISU-01), administrators can change admin / user passcodes and assign smartcards. A maximum of 50 user card credentials can be managed per control panel. Setup is easy via the optional data input cable (ISW-USB-1.8).







The patented X-800 SmartCard handle is designed for total rack access control and management.

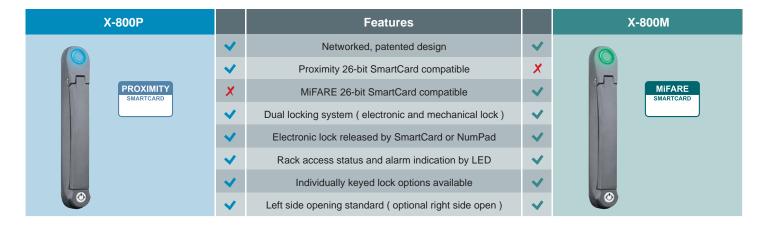
The X-2000 control box, designed for rack SmartCard Access + PDU/Fan/Environmental Management, consolidates the smartcard access components and management of other integrated rack devices such as smart PDUs, cooling fans and environmental sensors in a single rack appliance. To facilitate centralized management, all control boxes can be connected via wired networks.

For 100% accurate detection of exactly which door opened, Infra Solution® X-800 is equipped with high quality, durable, precision door sensors for both doors.

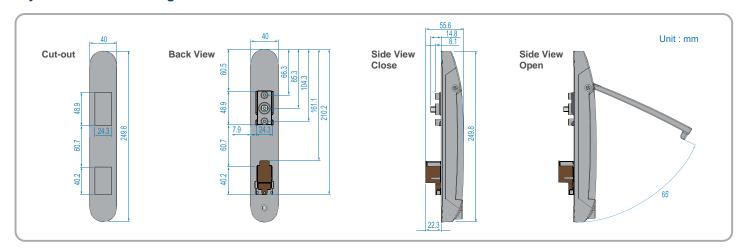
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US and Worldwide Patents



Stylish Mechanical Design



Handle Unlocking

The InfraSolution X-800 handle offers three ways to release the lock - Software Remote, SmartCard or Mechanical Key.



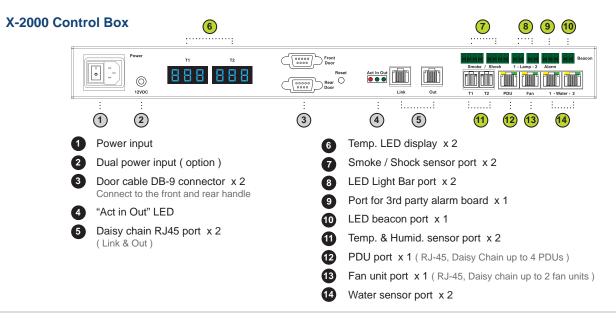


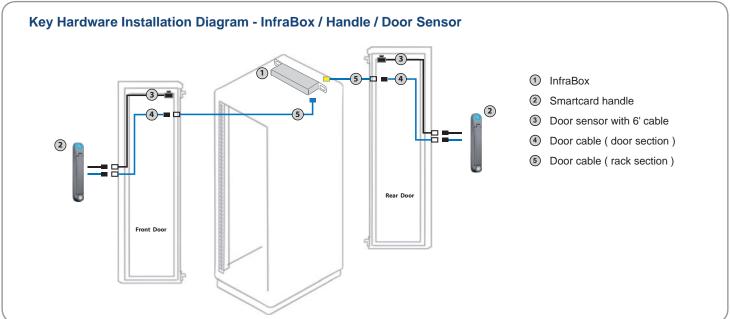


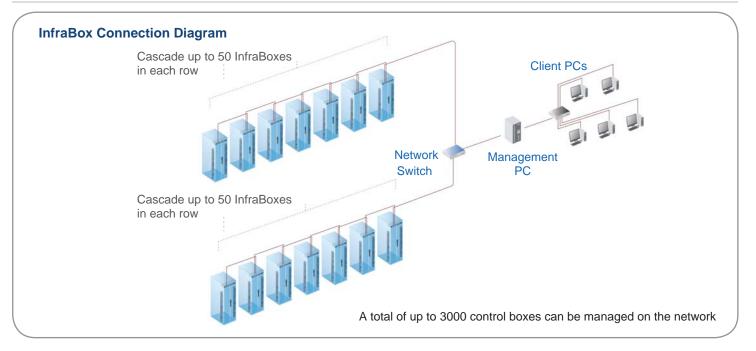


Infra Solution® X Networked Access Control









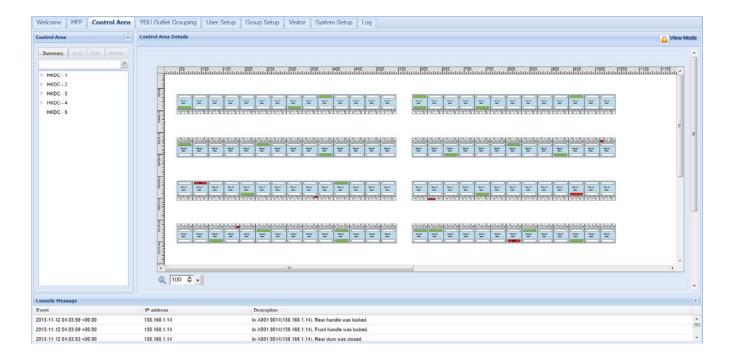




 ${f Infra Solution}^{\circ}$ ${f X}$ Manager X-ISM is a LICENSED rack management software to monitor up to 3000 racks remotely.

Each InfraBox connects a pair of Smartcard handles for secure rack access control and a variety of sensors to provide an integrated environmental monitoring solution. To enhance the functionality, up to 1920 PDUs and 960 Fan Units can be monitored through InfraSolution X Manager. To meet the requirements of today's multi-user, multi-tasking data center operations, up to 100 concurrent users can access the management software remotely.





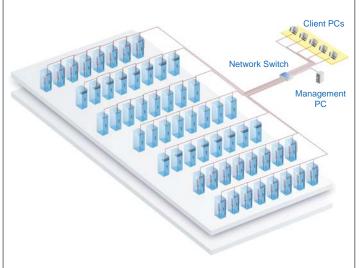
Features		X-ISM
Capacity	InfraBox Concurrent Users	3000 100
System Setup	Backup/Restore Options Time Rules Alarm Mail Server Settings Audio and Visual Alarm Output Setting	v v v
Cabinet Overview Door	Door Status, PDUs, Sensor & Fan Units Remotely Open Door Last Door Open & Closed Record	<i>V V</i>
Sensor/Peripheral	Status Monitoring Temp-Humid Alarm Threshold Settings	V
PDU	Energy Consumption kWh/Amp Monitoring Outlet Level Measurement PDU Outlet Scheduling Outlet ON/OFF Switching Amp Alarm Threshold Settings Amperage High/Low Alert Threshold Settings Temp-Humid Monitoring	V V V V V V
Fan Unit	CFM & Temp. Monitoring Unit CFM (Fan Speed) Settings Auto CFM Control Settings Individual Fan Kit ON/OFF Fan Unit ON/OFF	<i>y y y y</i>
Chart/Event/Reporting	System & Device Event Reporting Temp-Humid Historical Trending Charts	V





Application 1 - Data Center

Via cascading (up to 50 per group) through a network switch, InfraSolution X-800 can be scalable up to 3000 racks. Numerous InfraBoxes can coexist in the same network. Users can manage and remotely access all racks under a centralized and user-friendly GUI.

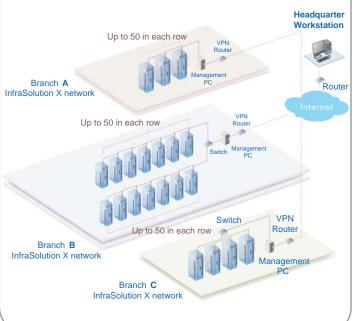


- Connect the 1st InfraBox in each daisy chain to the network switch
- Connect the management PC and client PCs via the network switch
- Up to 3000 Infraboxes/Racks

Application 3 - Branches

For a global or expanding company, it is vital to be able to remotely access and monitor the network of their nationwide or worldwide branches. InfraSolution X provides an ideal solution to keep an eye on rack access security and environmental conditions in remote or branch locations from a central headquarters.

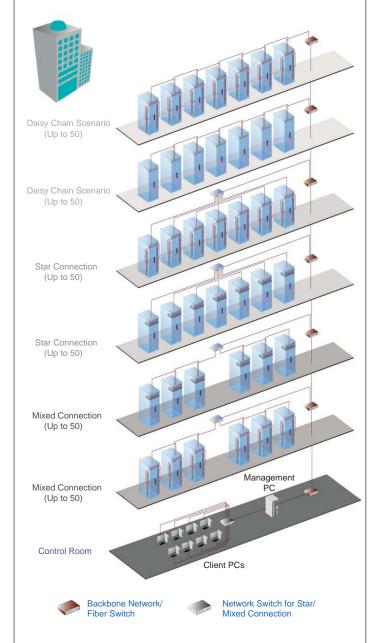
An InfraSolution X software license is required for each remote site/management PC



Application 2 - Intelligent Building

It is essential for multi-story, intelligent buildings to use centralized management for control of mechanical and electrical systems such as security, power, ventilation, and lighting.

The InfraSolution X system allows equipment to be distributed throughout a building by simply deploying over an Ethernet network. To keep capital costs down, InfraSolution X can also be cascaded between boxes - up to 100m over a Cat5/6 cable. Signal weakness issues, over longer distances between InfraBoxes, can be solved by inserting network hubs with repeater functionality.



Setup Scenario integrated with the Intelligent Building

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





Founded in 1995, **Austin Hughes** is a design and manufacturing group that offers a broad range of solutions based around 19 inch rack mount technology: the UltraRack IT server rack series, InfraRack intelligent rack solutions, InfraPower intelligent remote management power solutions, InfraCool intelligent remote cooling systems, InfraGuard environmental sensors and peripherals, InfraSolution remote locking and access control, CyberView LCD KVM switches and UltraView professional displays.

Austin Hughes has ISO14001 and ISO9001 approved design, manufacturing, assembly and test facilities. We support a worldwide customer base through our global locations in the Americas, EMEA, APAC and ASEAN and through an extensive authorized channel partner network.





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