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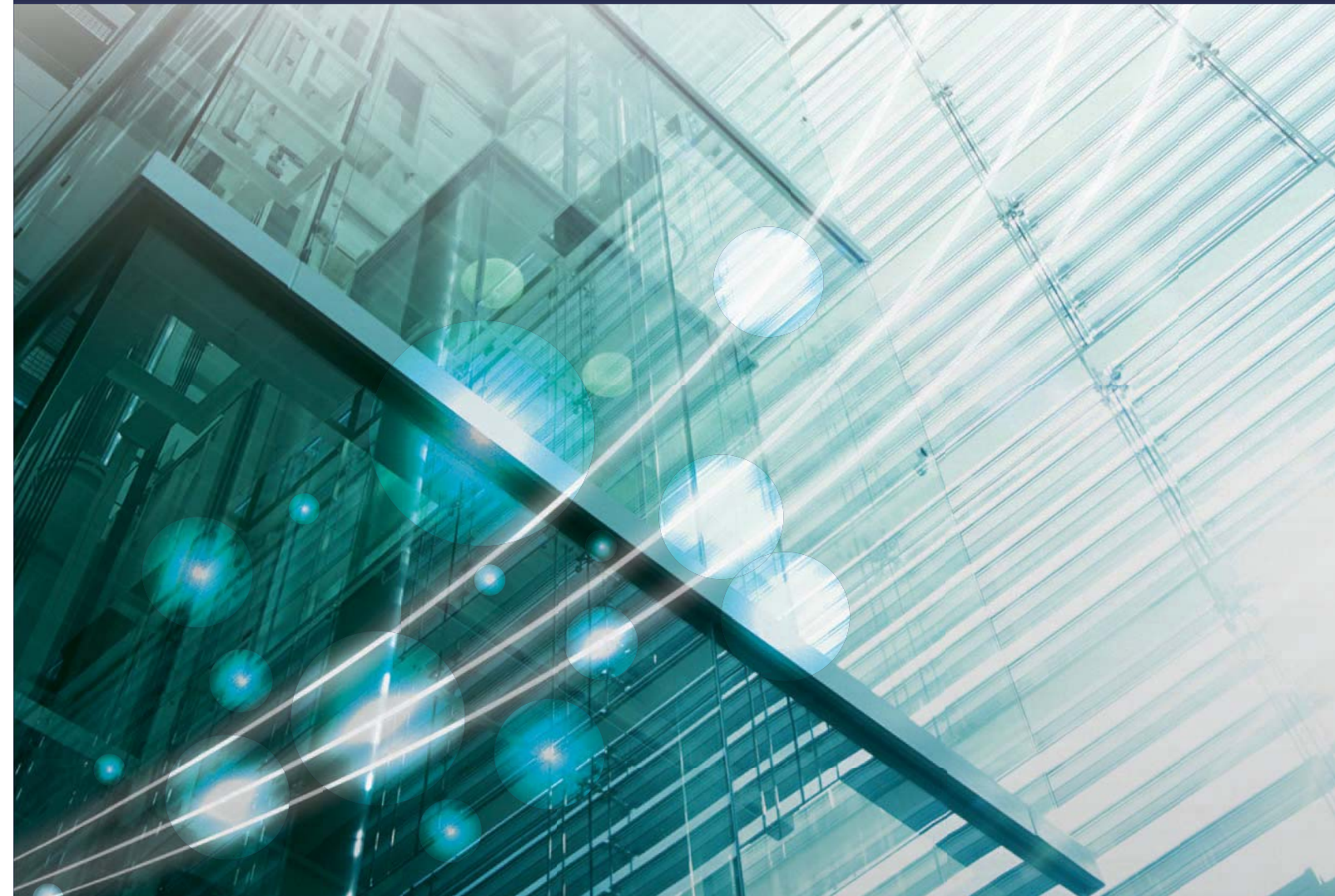
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AIRSTAGE™
Variable Refrigerant Flow System



Integrated Management and Control System for Building Air Conditioning

System Controller **Software**

UTY-APGX / UTY-ALGX

- Air conditioning Management
- Data Management
- Remote Management
- Energy Saving Management



FUJITSU GENERAL LIMITED

Energy Saving & Various Management Control Systems



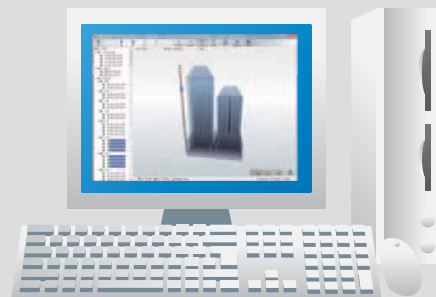
Air conditioning Management



Data Management

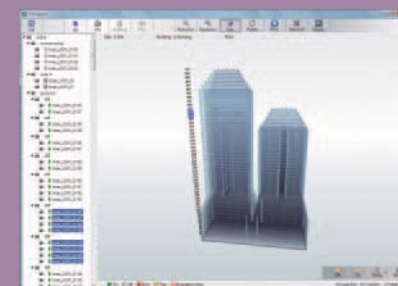


Advanced functions for central management of air conditioning from small to large scale buildings.

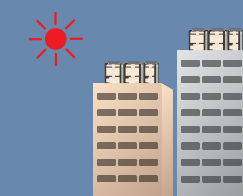


Fujitsu General's intelligent management control system (System Controller) uses just one personal computer to perform a variety of energy saving management including air conditioning management, remote management, and operation history and other data management to match the application and purpose. This eliminates air conditioning energy loss and wasteful operation for the entire building and energy-saving and optimum air conditioning management is realized.

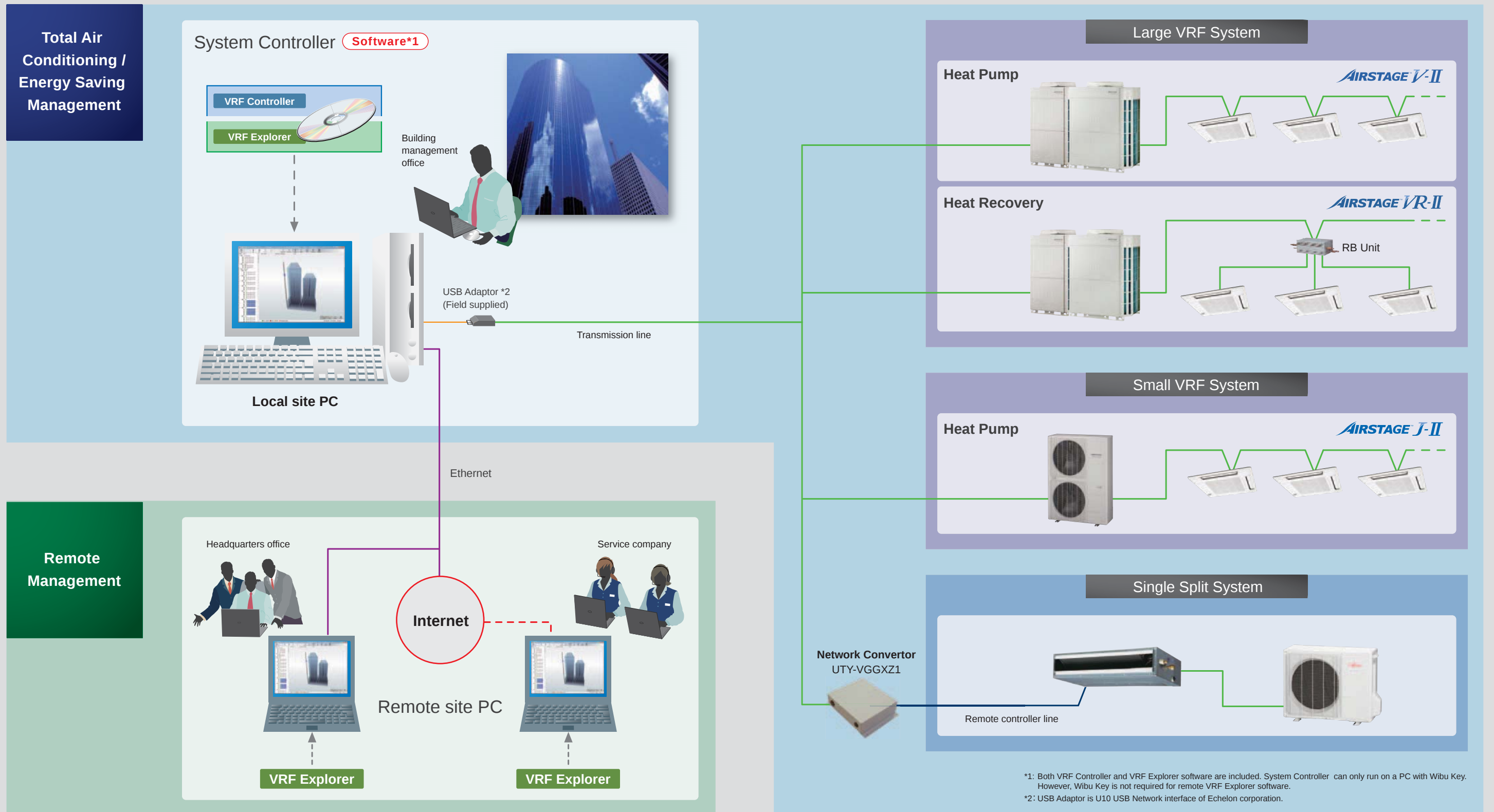
Remote Management



Energy Saving Management



System Overview



Control System Appropriate for Building Scale

There are two editions of the system controller. These software are offered to match the size of the building. The UTY-APGX System Controller has excellent functions for large scale buildings, and the UTY-ALGX System Controller Lite has standard functions for small and medium scale buildings. A variety of management software can be added to meet customer needs.

For large scale buildings Pro Edition

This software contains excellent management functions for managing air conditioning in large scale buildings and easy-to-read visual display functions. Energy saving management software is available as an option.

System Controller
UTY-APGX

- Diverse air conditioning control
- Schedule management
- 2D floor layout/3D building display
- Error history and E-mail notification
- Electricity charge apportionment
- Remote control and monitoring



Max. controllable
4
VRF networks

Max. controllable
1,600
indoor units

Max. controllable
400
outdoor units



Offices,Hotels,Medical facilities,etc.

Main features

Function items	Standard	Option
•User-friendly view and operation (List / Site / 2D floor / 3D building displays)	●	
•Diverse operation management	●	
•Diverse data management	●	
•Electricity charge apportionment	●	
•Remote management	●	
•Energy saving management		○ UTY-PEGX

For small to medium scale buildings Lite Edition

This software has standard functions sufficient for air conditioner management in small and medium scale buildings and good cost-performance. A wide variety of management software is available as an option to give customers a wide range of choices.

System Controller Lite
UTY-ALGX

- Diverse air conditioning control
- Schedule management
- Error history and E-mail notification



Max. controllable
1
VRF networks

Max. controllable
400
indoor units

Max. controllable
100
outdoor units



Shops,Resturants,
Schools,etc.

Main features

Function items	Standard	Option
•User-friendly view and operation (List display only)	●	
•Diverse operation management	●	
•Diverse data management	●	
•Electricity charge apportionment		○ UTY-PLGXA1
•Remote management		○ UTY-PLGXR1
•Energy saving management		○ UTY-PLGXE1

Multiple displays

- **Click & Operation** : The property is shown visually from the perspective most suitable for operation and operated accordingly(click & Operate). You can select from among the 4 displays of site, building, floor, or list.

The display is easily changed by pressing the button.

Click & Operate the whole building!

Properties can be shown using one of the four displays of site, building, floor, or list.

Click & Operate any specified unit(s)!

Site view

Building view

List view

Batched control of freely selected units

Click & Operate the whole floor !

The floor layout drawing can be imported to easily make the settings for the actual building.

Floor view

Click & Operate the unit!

Note:2D floor layout / 3D building display are not available for System Controller Lite.

- **Freely define groups for batched control** : Indoor units can be freely grouped for simple batched control from a tree menu. Grouping by hierarchal structure, such as by section, division or department is possible.

Multiple language display

Corresponds to 7 different languages English, Chinese, French, German, Spanish, Russian, Polish.

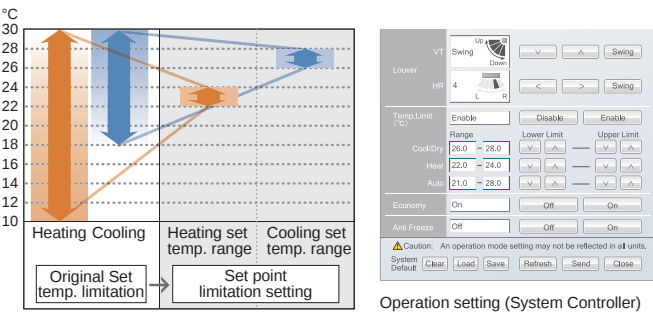
Schedule management

- Annual schedules can be set for each remote controller group / user defined group.
- Start / stop, operating mode, remote controller prohibition, and temperature settings can be set up to 143 times per day at 10 minute intervals for up to 101 configurations for each remote controller group.
- Settings can be made for periods straddling midnight.
- Allows programming of special settings for holidays, including public holidays, for a complete year.
- Low noise operation of outdoor unit can be scheduled.



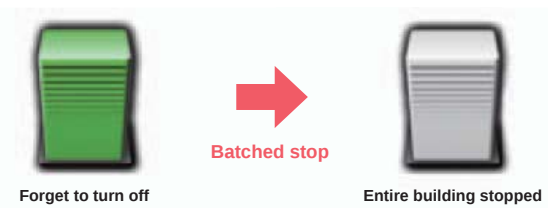
Room temperature set point limitation

The minimum and maximum temperature range can be set giving further energy saving while considering the comfort of the occupants.



Batched stop

Batched stop at a freely set time for a property, building, or freely set block unit can be done to prevent any air conditioning unit from being forgotten to be turned off at the end of office hours, etc. In addition, any air conditioning unit whose operation is left on can be immediately identified by the icon color for a building or indoor unit in the monitoring screen and batched stop conducted in response.



Diverse control of indoor unit

- Indoor unit operation state, operation mode, etc. are displayed
- Indoor unit start / stop and operation mode switching
- Anti-freeze function setting



Remote controller prohibition

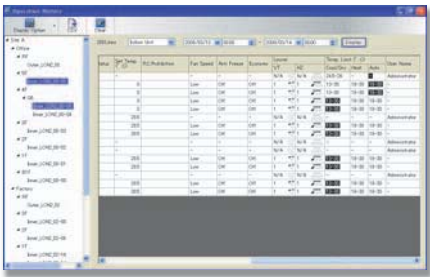
This prohibits changes to the operation mode, temperature, start/stop, etc.



Diverse data management

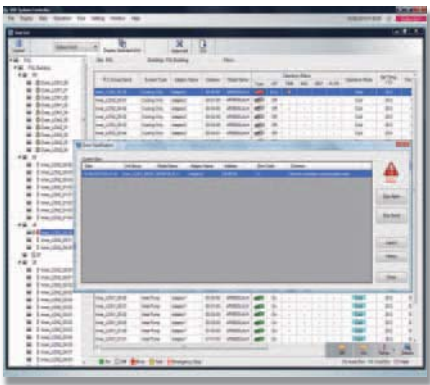
Operating & control record

Displays the history of operation status and control.



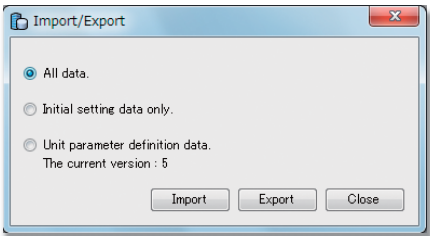
Error display & E-mail notification

Error is notified with popup message, audible sound and E-mail real time when error occurs. Error for the past 1 year are logged and can be reviewed later.



Data base import/export

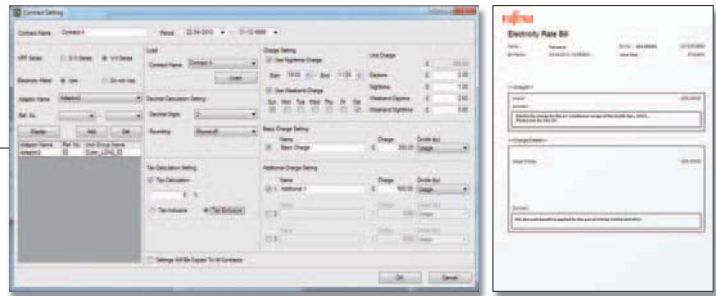
Imports/exports registration data, layout data, and image data. Only the administrator can make this setting.



Electricity charge apportionment

Standard for System Controller
Option for System Controller Lite **UTY-PLGXA1**

Electricity charge apportionment can be performed easily for the power consumed when billing users for air conditioning power charges, such as tenants in a commercial building, offices in a rental building, or rooms in a hotel.



Electricity charge apportionment screen

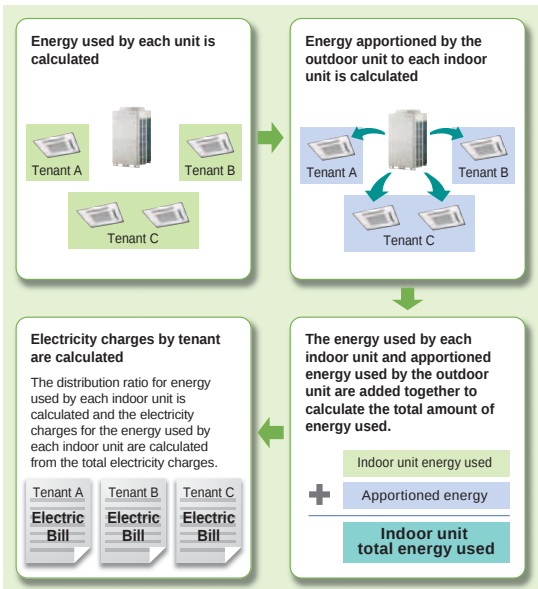
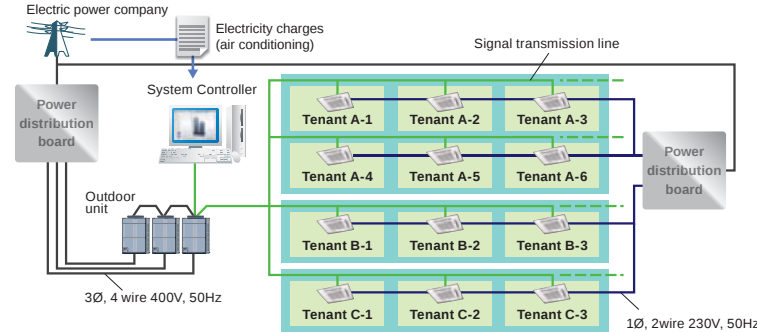
Air conditioning power consumption bill

With the electricity charge apportionment function, the power charges for the air conditioning used by each tenant can be calculated. Using the energy saving option (UTY-PEGX) allows for more detailed calculation of charges. The power consumption charges will evenly be divided among tenants depending on their usages.

Electricity charge apportionment calculation framework

Suppose you want to find the power consumed by the air conditioners of each tenant from the electricity charge for each month. With electricity charge apportionment function, used energy apportionment ratio will be provided, calculating in detail the energy consumed by the units used by each tenant. This information is then used to calculate the charges for the electricity consumed for air conditioning by each tenant from the total electricity charges in the bill from the electric power company. (See figure at right) The detailed calculation takes into consideration such things as unused rooms and nighttime electricity charges and shows them in a charges calculation sheet.

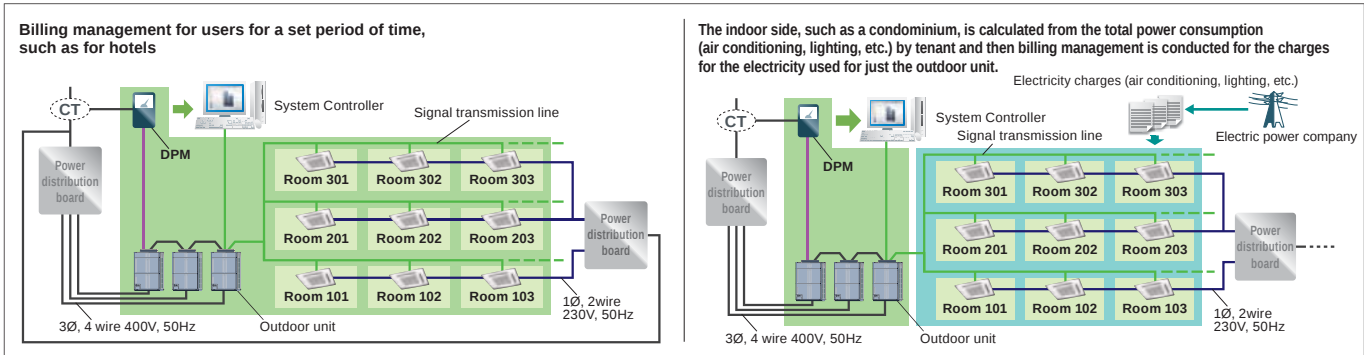
System Configuration Example



Configuration example of an electricity charge apportionment system with a power meter connected

Connecting a power meter allows the charges to be calculated for a variety of usage patterns such as charges for the power used on a per day basis or just the charges for the power used by the outdoor unit.

• CT : Current Transformer DPM : Digital Power Meter



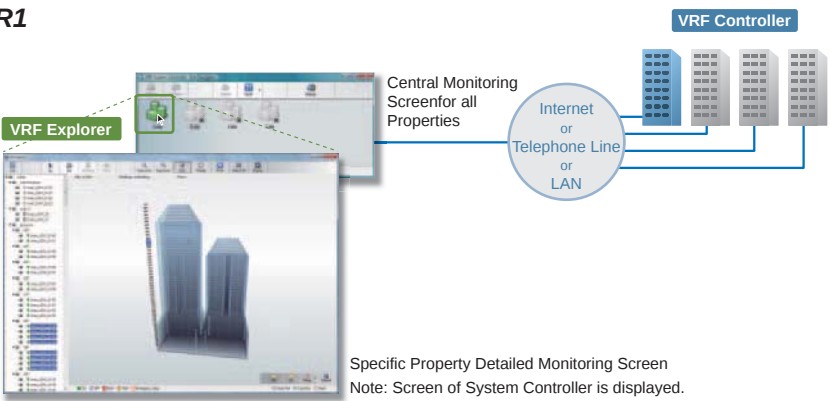
Note

- Multiple power meters can be installed taking into consideration the building design, etc. For example:
 - Install separate power meters for the outdoor units and indoor units
 - Install a power meter for the indoor units for each tenant
 - Install a power meter for the outdoor units/indoor units of each floor
- Power meters that can output a pulse for 1 kWh (1 kWh/pulse) for the power consumed by the air conditioning are recommended.
- There may be some restrictions on power meter installation depending on the property conditions.
- The electricity charge apportionment calculation does not comply with the laws and regulations of the various countries regarding measurement act.

Remote access

Standard for System Controller
Option for System Controller Lite **UTY-PLGXR1**

Multiple air conditioning systems can be batched remote managed via the Internet.
Alarm e-mails can also be sent.

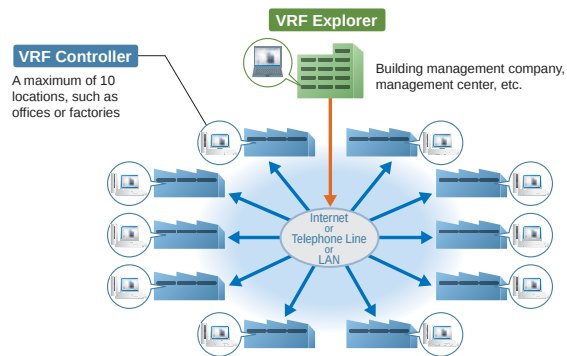


System Controller may be used on site or remotely over various networks for remote central control. System Controller requires 2 softwares working together. VRF Controller runs on site and communicate with VRF system. VRF Explorer runs remotely and provides user interface and communicate with the VRF Controller. VRF Controller and VRF Explorer program may run in a single PC or in different PCs separated by network. By using VRF Explorer software, one PC can perform central control of 10 VRF system sites with max. 20 buildings per site.

Flexible management

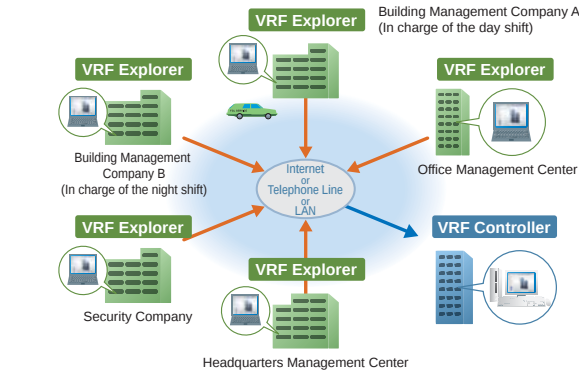
1 VRF Explorer can control or monitor up to 10 sites.

VRF Network Systems in a maximum of 10 locations can be controlled and monitored from a single VRF Explorer. This is optimum for operation of a large company or large shopping mall with multiple facilities on a single site.



1 VRF Controller can be monitored from any number of VRF Explorers (Up to 5 simultaneous connections).

The building management company, security company, management center, etc., can use a single VRF system to remotely control, manage, and monitor simultaneously up to 5 locations from VRF Explorer. This makes it possible to operate the system with high reliability.



Can be used for a variety of applications

- Commercial buildings**
 - Remote centralized management can be used for nighttime only to manage the air conditioning of multiple stores, operate air conditioning for people working overtime, and checking to see if employees forgot to turn off the air conditioning after they leave.
 - Multiple users via a LAN can control the air conditioning in the office, general affairs department, or janitor's room.
- Factories**
 - Batched operation of the factory buildings on a large site can be remotely conducted from the management office of the administration building to employ power saving operation.
 - The headquarters can conduct centralized remote monitoring of the company's factories in outlying areas to improve the power saving effect for the entire company.
- Service Companies**
 - Service companies that manage buildings that are empty at night after the managers leave to go home can conduct centralized remote monitoring of the building without dispatching employees to the site, which allows them to monitor the air conditioning for multiple clients.
 - The System Controller remote monitoring and control functions can be used to receive outsourcing business from small and medium size building owners to manage their air conditioning energy.
 - Nighttime only remote monitoring of multiple properties after the people leave can be performed for areas that require 24-hour operation, such as server rooms, to monitor for problems.

- Franchises**
 - The air conditioning for franchise locations nationwide can be centrally controlled from headquarters to facilitate operation status and control to save energy.
- Universities**
 - Remote batched control of satellite campuses can be performed from the main campus to achieve waste-free operation control.
 - Controlling the operation of each building and each classroom on campus makes it possible to reduce expenses by remotely controlling those spaces in accordance with the teaching schedule.
- Hospitals**
 - In large hospitals with many buildings, the operation of air conditioning in each patient room can be remotely controlled from the control room in accordance with admission or discharge of patients.

Security Support



Employs SSL Encryption Technology
Encryption technology is used for communications to remote sites to prevent information from being stolen.



Detailed User Management User identification:
Authorization using user IDs and passwords is employed to prevent unauthorized access.

Access authority: The functions that can be used are restricted for individual login users to prevent unauthorized use.

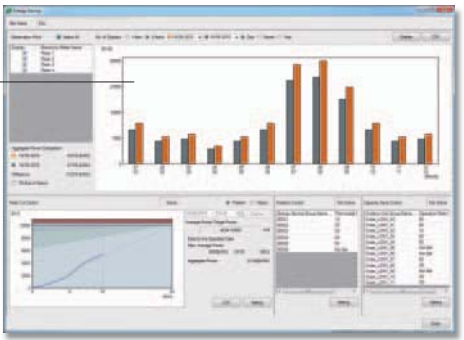
Energy saving

Option for System Controller **UTY-PEGX** (Energy manager)
Option for System Controller Lite **UTY-PLGXE1** (Energy saving)

A variety of energy saving operations can be set and managed depending on the season, weather, and time period. Excellent energy saving operation is performed while keeping users comfortable.

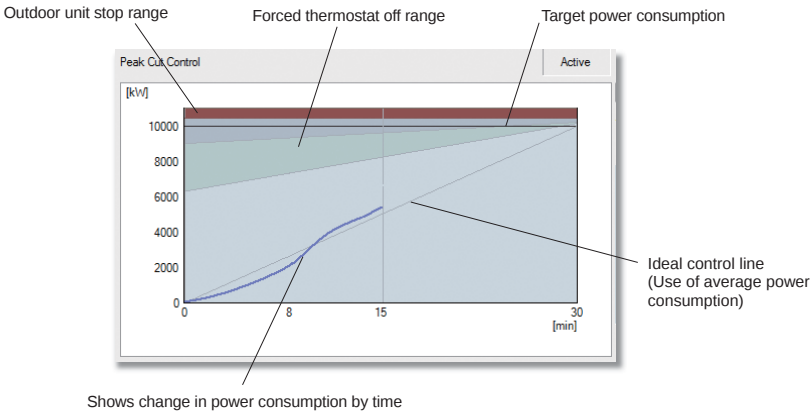
Energy saving graph data: This graph compares the electricity consumption with the previous month and previous year to make it easy to analyze the energy saving effect.

Energy Saving Management Main Screen



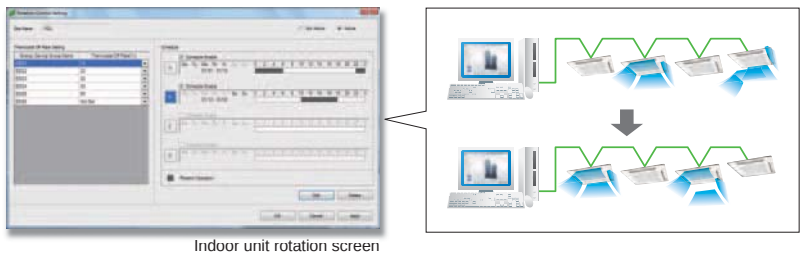
Peak cut operation

A power meter is connected to detect the total power consumption while shifting the indoor unit set temperature, set the indoor unit forced thermostat off, and taking other measures to carefully control the power consumed while maintaining comfort and conducting control to maintain the target power consumption set for each time. The indoor units to be controlled can be freely grouped and the control level can be set.



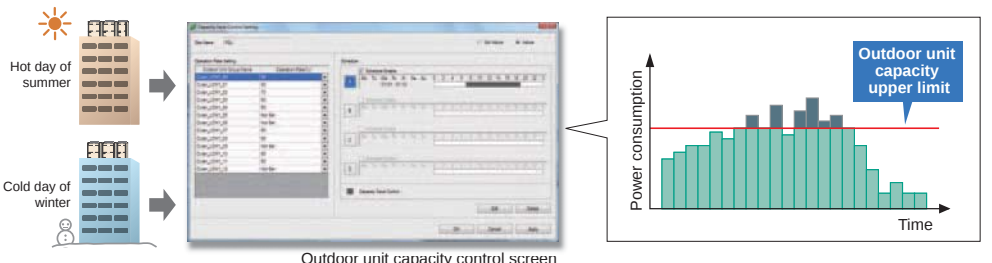
Indoor unit rotation operation

The operation of indoor units can be automatically rotated within a group in accordance with the set annual schedule to reduce power consumption while maintaining comfort. The indoor unit operation stoppage rate can be selected.



Outdoor unit capacity save

Outdoor unit capacity save switches the outdoor unit capability upper limit to suppress power consumption during hot summers and cold winters by averaging the power saving effect of each refrigerant system. You can select from 50% or more of the capacity upper limit.



Functions Summary

Function	Type		System controller		System controller lite			
			UTY-APGX	Option UTY-PEGX	UTY-ALGX	Option UTY-PLGXR1	Option UTY-PLGXA1	Option UTY-PLGXE1
System specification	Max. VRF networks supported		4	-	1	-	-	-
	Max. indoor unit / remote controller groups per VRF network		400	-	400	-	-	-
	Max. outdoor units per System controller		100	-	100	-	-	-
	Max. indoor units / remote controller groups per System controller		1600	-	400	-	-	-
	Max. outdoor units per System controller		400	-	100	-	-	-
Site supervision	Multi site display		10	-	10	-	-	-
	Number of building / 1 site		20	-	-	-	-	-
	Number of floor per 1 site		200	-	-	-	-	-
	Number of floor per 1 building		50	-	-	-	-	-
	3D graphical layout view		○	-	-	-	-	-
	2D graphical layout view		○	-	-	-	-	-
	List display		○	-	○	-	-	-
	Tree display		○	-	○	-	-	-
	Group display		○	-	○	-	-	-
Error management	Error notification		○	-	○	-	-	-
	Audible alarm		○	-	○	-	-	-
	Error e-mail notification		○	-	○	-	-	-
History	Error history		○	-	○	-	-	-
	Operation history		○	-	○	-	-	-
	Control history		○	-	○	-	-	-
Operation control	Individual control	On/Off	○	-	○	-	-	-
		Operation mode	○	-	○	-	-	-
		Room temperature	○	-	○	-	-	-
		Fan speed	○	-	○	-	-	-
		Air flow direction	○	-	○	-	-	-
		Economy mode	○	-	○	-	-	-
		Room temperature set point limitation	○	-	○	-	-	-
		Test operation	○	-	○	-	-	-
		Antifreeze	○	-	○	-	-	-
	Individual management	Remote control prohibition setting	○	-	○	-	-	-
		Temperature upper and lower limit setting	○	-	○	-	-	-
		Filter sign reset	○	-	○	-	-	-
	Other	Memory operation	○	-	○	-	-	-
		Pattern operation	○	-	○	-	-	-
Schedule	Annual Schedule		○	-	○	-	-	-
	Special day setting		○	-	○	-	-	-
	On /off per day		72	-	72	-	-	-
	On / off per week		504	-	504	-	-	-
	Day off		○	-	○	-	-	-
	Min. unit of timer setting (Minutes)		10	-	10	-	-	-
	Low noise mode Weekly schedule		○	-	○	-	-	-
Remote managemment	Remote monitoring		○	-	-	○	-	-
	Remote operation control		○	-	-	○	-	-
	Remote function setting		○	-	-	○	-	-
Electricity charge apportionment	Apportionment charge/bill calculation		○	-	-	-	○	-
	Tenant (block) setting		○	-	-	-	○	-
	Common facilities apportionment setting		○	-	-	-	○	-
	Rated power consumption allotment setting		○	-	-	-	○	-
	Individual calculation at cooling and heating		-	○*	-	-	○	-
Energy saving management	Electricity meter supported		-	○	-	-	○	-
	Indoor unit rotation		-	○	-	-	-	○
	Peak cut control		-	○	-	-	-	○
	Outdoor unit capacity save		-	○	-	-	-	○
	Record of energy saving operation		-	○	-	-	-	○
	Energy saving information		-	○	-	-	-	○
	Power consumption monitor		-	○	-	-	-	○
Others	Electricity meter supported		-	○	-	-	-	○
	Database import/export		○	-	○	-	-	-
	Automatic clock adjustment		○	-	○	-	-	-
	Multi language		7 languages	-	7 languages	-	-	-

○ : Available. - : Not available.
*:Power calculation application software is necessary, please contact the local FGL representative.

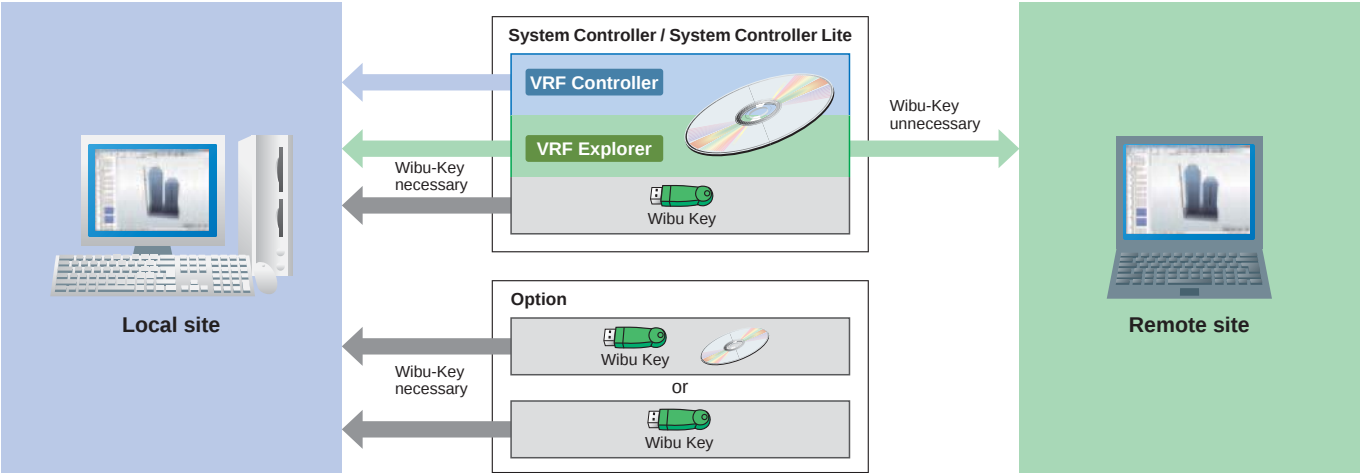
Operating conditions

Personal computer specifications

Operating system	• Microsoft® Windows® XP SP3 (32-bit) Professional (*1) • Microsoft® Windows® Vista® SP2 (32-bit) Home Premium, Business (*2) • Microsoft® Windows® 7 SP1 (32/64-bit) Home Premium, Professional (*2) • Microsoft® Windows® 8 (32/64-bit) Windows 8, Windows 8 Pro (*2) [Supported languages] (*1) English only (*2) English, Chinese, French, German, Russian, Spanish, and Polish
CPU	Intel® Core™ i3 2GHz or higher
Memory	2GB or more (Windows® XP, Vista®, 7 32-bit), 4GB or more (Windows® 7 64-bit, Windows® 8)
HDD	40GB or more of free space
Display	1024 x 768 or higher resolution
Interface	USB port is required for each of the followings for Server PC ; • Wibu Key (Software protection key) • Echelon® U10 USB Network Interface (Required for each VRF Network) Ethernet port is required for remote connection using internet.
Accelerator	Requires the internal graphics accelerator be compatible with Microsoft® DirectX® 9.0 (for only System Controller)
Software required	Adobe® Reader® 9.0 or later

Personal computer must be field supplied. U10 USB Network Interface must be field supplied. Contact Echelon® Corporation or its local sales representative for detail.
Product Name : U10 USB Network Interface - TP/FT-10 Channel Model Number : 75010R

Software configuration



Packing list

Type	For System controller		For System controller Lite			
	System controller	Option Energy manager	System Controller Lite	Option		
Model name	UTY-APGX	UTY-PEGX	UTY-ALGX	UTY-PLGXR1	UTY-PLGXA1	UTY-PLGXE1
DVD-ROM*1	1	1	1	—	—	—
Wibu-Key*2 (Software protection key)	1	1	1	1	1	1

*1:Includes the software and manuals. Both VRF Controller and VRF Explorer software are included.
*2:Software protection key to be inserted in a USB slot running System Controller or System Controller Lite.
System Controller or System Controller Lite may only run on a PC with Wibu Key. However, Wibu Key is not required for remote VRF Explorer software.