

RPC-XXX

# Remote Power Control and Monitoring system (RPC-XXX)



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# Company Introduction

<b>Company</b>	• COSPAN Corp.
<b>CEO</b>	• Hae-Yon, Lee
<b>Address</b>	• #208, KUBI, 83-9, Seoseong-Dong, Masanhappo-Gu, Changwon, Kyungnam, 631-430, Korea
<b>TEL / FAX</b>	• +82-55-242-1109 / 5
<b>Homepage</b>	• www.cospan.co.kr
<b>Foundation Date</b>	• January 25, 2010
<b>Business Field and Product</b>	• Remote Power Control and Monitoring system (RPC-XXX)
<b>Major Business Objectives</b>	<ul style="list-style-type: none"> <li>• Establishment of Creative Corporation</li> <li>• To be a firm that provides products with the highest technology level in the world</li> <li>• Always Venture mind</li> </ul>



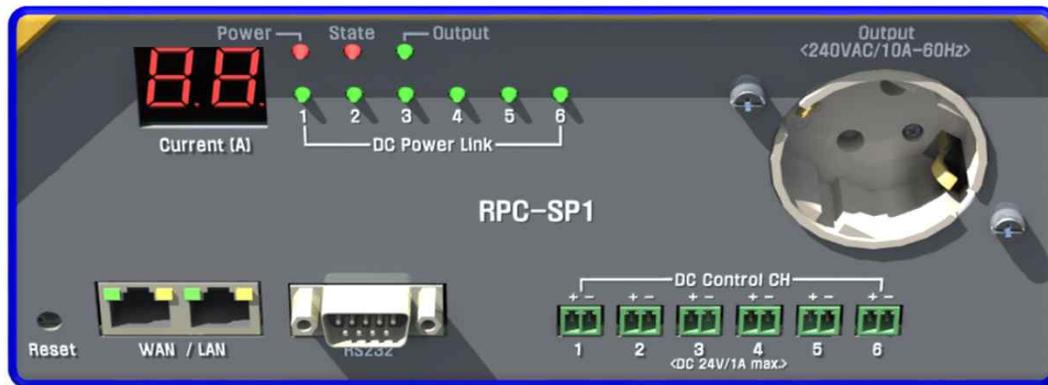
# Remote Power Control and monitoring system

## Appearance and electric characteristics

구분	Remote Power Controller (RPC-xxx)	구분	Remote Power Controller (RPC-xxx)
RPC-SP1	 <p>The RPC-SP1 is a tan-colored unit with a digital display showing '88', several status LEDs, and a single large output terminal on the right side.</p>	RPC-SP2	 <p>The RPC-SP2 is an orange unit with a digital display, status LEDs, and two large output terminals on the right side.</p>
RPC-SP6	 <p>The RPC-SP6 is a dark grey unit with a digital display, status LEDs, and six large output terminals arranged in a row on the right side.</p>	RPC-TP1	 <p>The RPC-TP1 is a red unit with a digital display, status LEDs, and a terminal block on the right side.</p>

# Remote Power Control and monitoring system

## RPC-SP1



Home
RPC-SP1 Control Panel
Config

### AC Power Control

ON

0 A

ON

Delay 0 sec

SET

### DC Link Control

Channel	DC Link	Command
CH1	N/C	1 sec <b>Push the switch</b>
CH2	N/C	1 sec <b>Push the switch</b>
CH3	N/C	1 sec <b>Push the switch</b>
CH4	N/C	1 sec <b>Push the switch</b>
CH5	N/C	1 sec <b>Push the switch</b>
CH6	N/C	1 sec <b>Push the switch</b>

Temperature  
16 °C

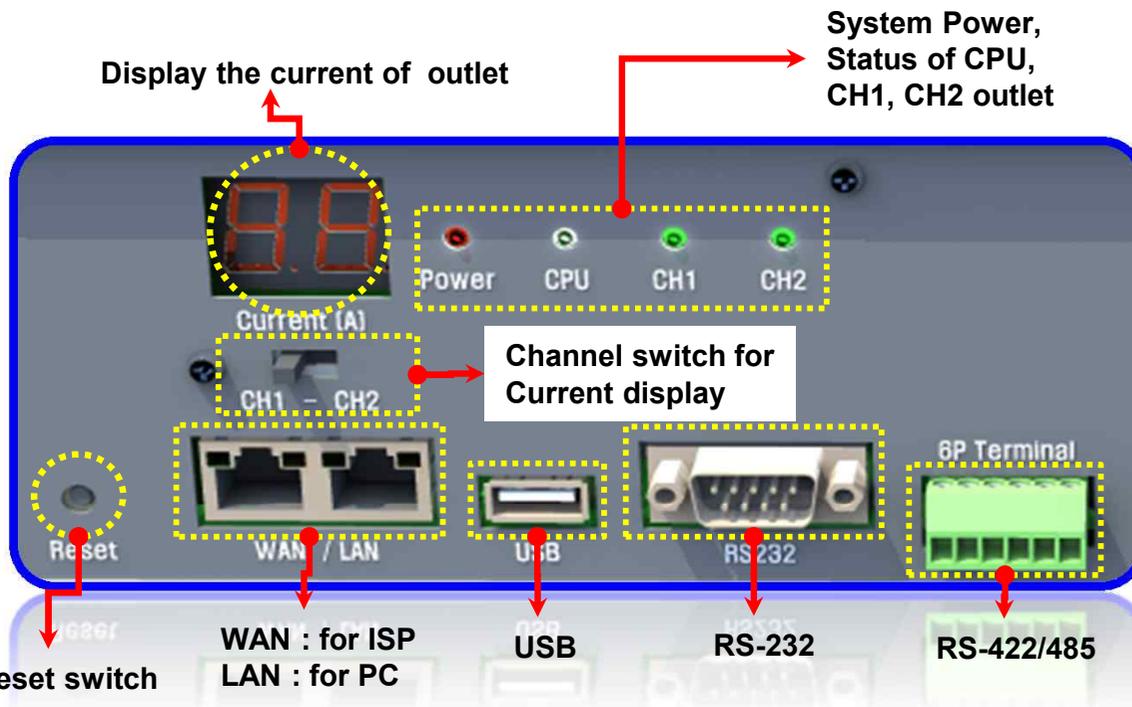
Running Time  
0D 8H45m

Customer Service  
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COSPAN Co., Ltd

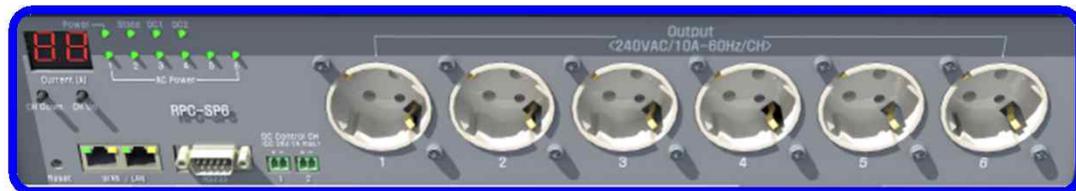
# Remote Power Control and monitoring system

## RPC-SP2



# Remote Power Control and monitoring system

## RPC-SP6



Home
RPC-SP6 Control Panel
Config

### AC Power Control

Ch. 1	Ch. 2	Ch. 3	Ch. 4	Ch. 5	Ch. 6
Voltage	Voltage	Voltage	Voltage	Voltage	Voltage
ON	ON	ON	ON	ON	ON
Current	Current	Current	Current	Current	Current
1A	1A	3A	1A	2A	4A
Relay	Relay	Relay	Relay	Relay	Relay
ON	ON	ON	ON	ON	ON
OFF	OFF	OFF	OFF	OFF	OFF
Delay	Delay	Delay	Delay	Delay	Delay
0 sec					
SET	SET	SET	SET	SET	SET

### DC Link Control

Channel	DC Link	Command
CH1	N/A	0 sec Push the switch
CH2	OK	0 sec Push the switch

**Temperature**  
18°C

**Running Time**  
1D 3H14m

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# Remote Power Control and monitoring system

RPC-TP1



Home
RPC-TP1 Control Panel
Config

### AC Power Control

R PHASE Voltage <b>OFF</b>	S PHASE Voltage <b>OFF</b>	T PHASE Voltage <b>OFF</b>	Relay ON OFF Delay <b>0</b> sec SET
R PHASE Current <b>0 A</b>	S PHASE Current <b>0 A</b>	T PHASE Current <b>0 A</b>	

### DC Link Control

Channel	DC Link	Command
CH1	N/C	1 sec <b>Push the switch</b>
CH2	N/C	1 sec <b>Push the switch</b>
CH3	N/C	1 sec <b>Push the switch</b>
CH4	N/C	1 sec <b>Push the switch</b>
CH5	N/C	1 sec <b>Push the switch</b>
CH6	N/C	1 sec <b>Push the switch</b>

Temperature  
**15 °C**

Running Time  
**0D 0H 4m**

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# Remote Power Control and monitoring system

## Main features and specifications

Type	Features	Model			
		SP1	SP2	SP6	TP1
Real time Monitoring	Status of each outlet switch ON/OFF	○	○	○	○
	Status of each power outlet ON/OFF	○	○	○	○
	Current of each power outlet	○	○	○	○
	Temperature inside the RPC-SP2	○	○	○	○
	Display warning message	> 10A	> 10A /CH	> 30A	> 30A
Control	Each outlet switch to be ON/OFF	110~220VAC, 1 CH	110~220VAC, 2 CH	110~220VAC, 6 CH	380Vac 3P4W, 1 CH
	Shut-down outlet power automatically	> 12A	> 12A	<ul style="list-style-type: none"> <li>• Input : &gt; 32A</li> <li>• Output : &gt; 12A</li> </ul>	> 32A
	Auto-restart power ON (Set time for the auto-restart power ON)	○	○	○	○
	DC booting power switch control	6 CH	-	2CH	6CH
Extendability	Interface	<ul style="list-style-type: none"> <li>• RS-232 : DB9</li> <li>• WAN/LAN</li> </ul>	<ul style="list-style-type: none"> <li>• RS-232 : DB9</li> <li>• RS-422/485</li> <li>• USB</li> <li>• WAN/LAN</li> </ul>	<ul style="list-style-type: none"> <li>• RS-232 : DB9</li> <li>• WAN/LAN</li> </ul>	<ul style="list-style-type: none"> <li>• RS-232 : DB9</li> <li>• WAN/LAN</li> </ul>

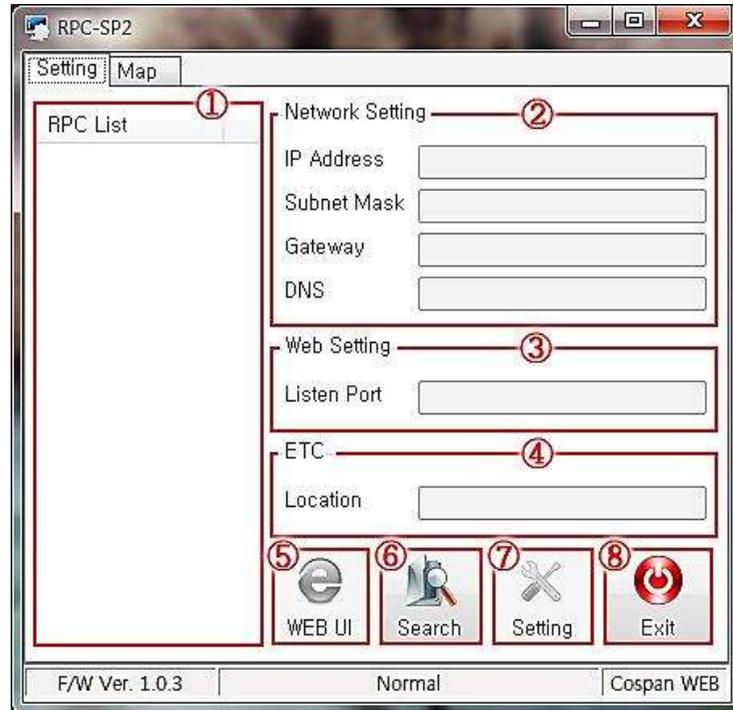
# Remote Power Control and monitoring system

## Specifications

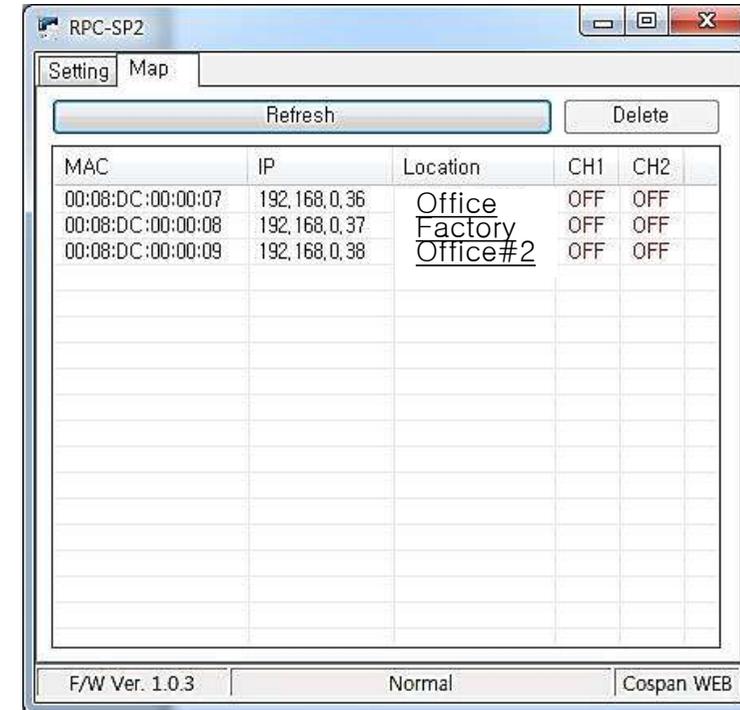
Spec. / Model	RPC-SP1	RPC-SP2	RPC-SP6	RPC-TP1
입력 전원	• 110~220VAC / 10A	• 110~220VAC / 20A	• 110~220VAC / 30A	• 380VAC, 3상4선 / 30A
시스템 소비 전력	• 6W	• 6W	• 6W	• 6W
출력 전원	• 110~220VAC / 10A x 1CH	• 110~220VAC / 10A x 2CH	• 110~220VAC / 30A / 6CH	• 380VAC, 3상4선 / 30A x 1CH
부팅전원 제어	• ~ DC 30V / 6 CH	-	• ~ DC 30V / 2 CH	• ~ DC 30V / 6 CH
네트워크	• WAN, LAN (2 x RJ-45)	• WAN, LAN (2 x RJ-45)	• WAN, LAN (2 x RJ-45)	• WAN, LAN (2 x RJ-45)
Display	• 7-Segment (Current) • 9 LEDs (Power, CPU, Outlet, DC link)	• 7-Segment (Current) • 4 LEDs (Power, CPU, CH1, CH2)	• 7-Segment (Current) • 9 LEDs (Power, CPU, Outlet, DC link)	• 7-Segment (Current) • 11 LEDs (Power, CPU, R,S,T, DC link)
외부 I/O	• RS-232 : DB9	• RS-232 : DB9 • RS-422/485 : Terminal Block • USB	• RS-232 : DB9	• RS-232 : DB9
동작환경	• 온도 : -20 ~ +50 °C • 습도 : 10 ~ 90 %	• 온도 : -20 ~ +50 °C • 습도 : 10 ~ 90 %	• 온도 : -20 ~ +50 °C • 습도 : 10 ~ 90 %	• 온도 : -20 ~ +50 °C • 습도 : 10 ~ 90 %
사이즈	• 146mm x 276mm x 100mm	• 115mm x 390mm x 75mm	• 160mm x 440mm x 87mm	• 215mm x 340mm x 136mm

## Management tool for user convenience

- Set-up the network information and installation location



- Mapping the RPC-XXX in the same network



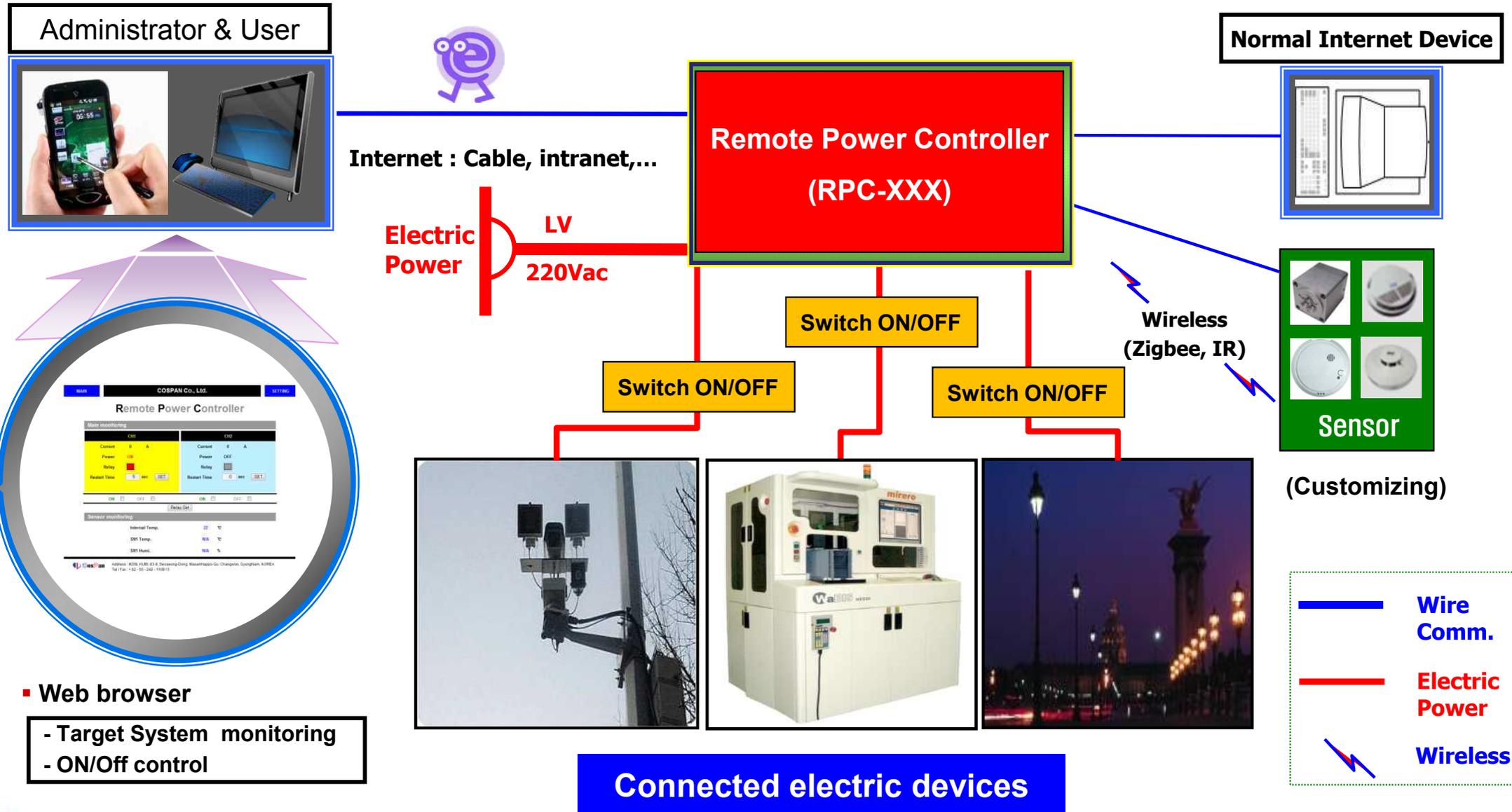
Management tool  
for user  
convenience

- Connected RPCs list
- Set-up and change network information
- Set-up the installation location
- Access to the embedded web UI In the RPC

- Connected RPCs list up
- Check the installation location
- Check the switch ON/OFF status of RPCs in the same network
- Access to the RPC which user wants

# Schematic diagram of the RPC-XXX operation system

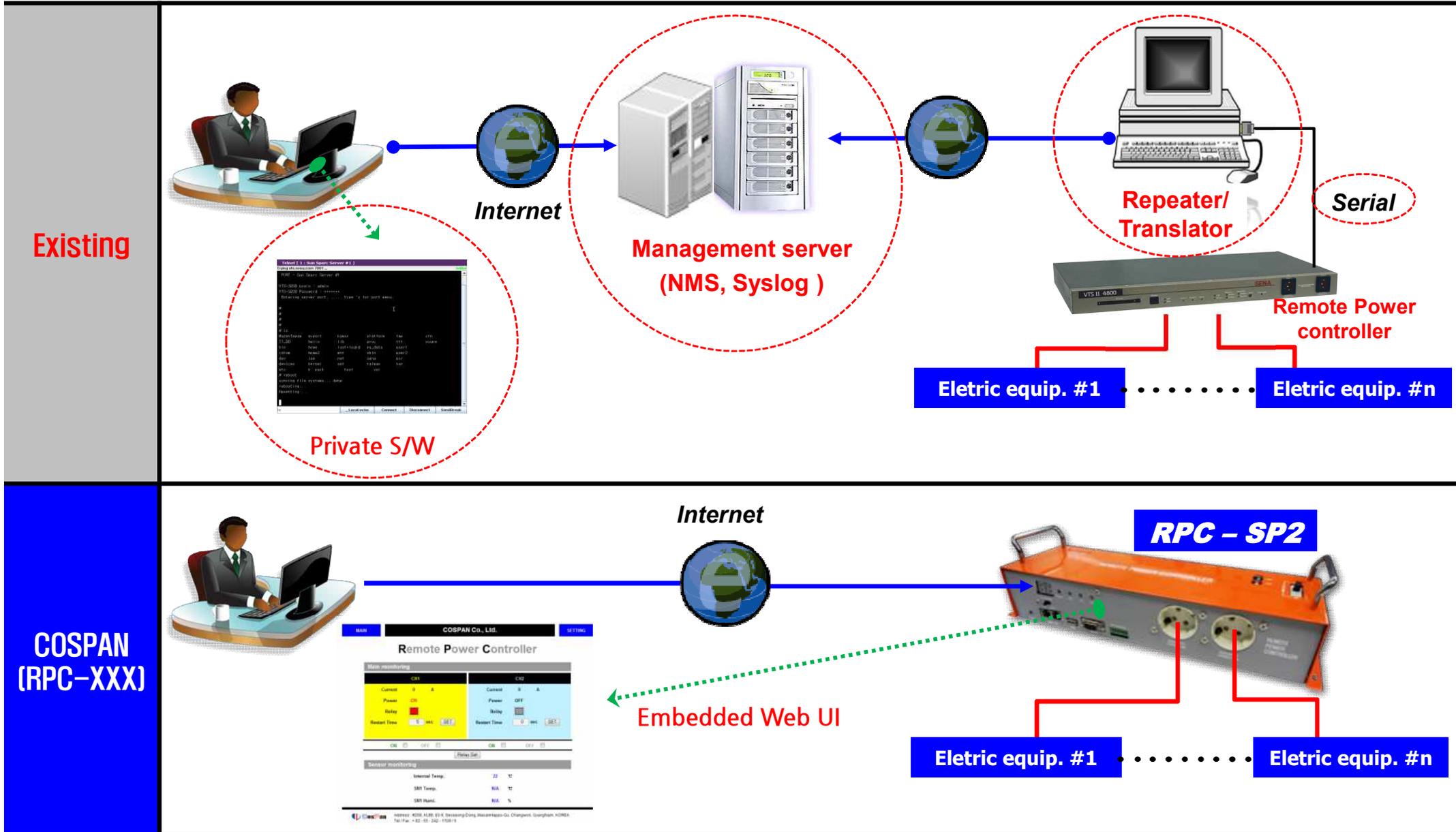
Control and Monitor the connected electric devices using web browser



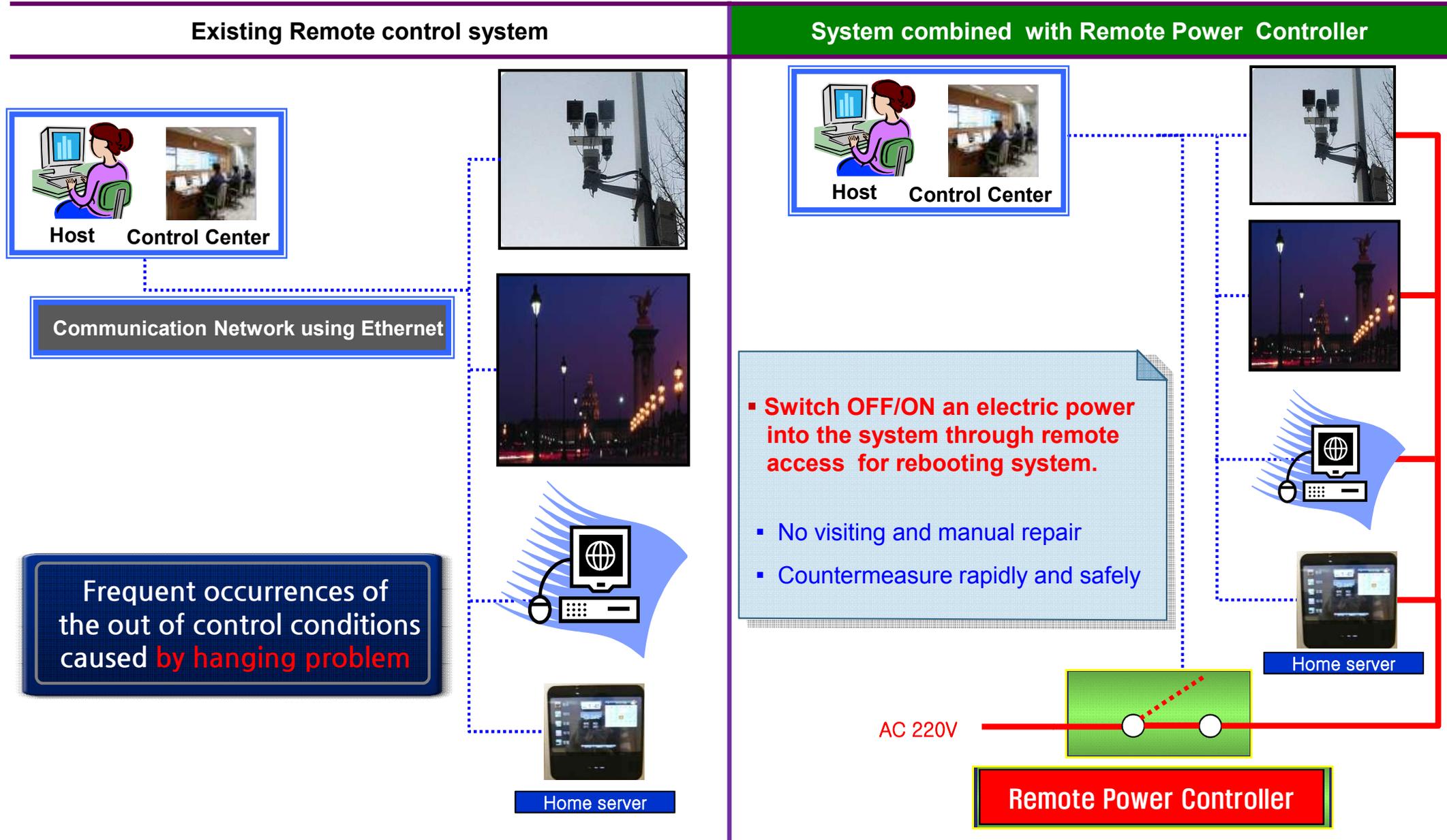
# Differences from the existing remote power controller

	Existing remote power control system	COSPAN Co., Ltd.(RPC-XXX)
System Config.	<ul style="list-style-type: none"> <li>▪ Additional network management server</li> <li>▪ Network repeater or translator such as an computer</li> <li>▪ Private program for communication and controlling system.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Embedded sensor</li> <li>▪ Embedded web UI based on the web browser</li> <li>▪ Embedded web server</li> </ul>
Price	High price, Very high price	Low price for common use
How to control.	<ul style="list-style-type: none"> <li>▪ All data is saved in the management server through repeater or translator</li> <li>▪ Administrator accesses to the management server through the private program</li> <li>▪ Getting the monitoring data and control the system.</li> <li>▪ System ----&gt; Repeater ----&gt; management server ←--- Administrator</li> </ul>	<ul style="list-style-type: none"> <li>▪ All data is saved in the RPC-SP2</li> <li>▪ Administrator can access to the embedded web server in the RPC using the web browser</li> <li>▪ Getting the monitoring data and control the system</li> <li>▪ Administrator -----&gt; RPC (RPC-SP2)</li> </ul>
Application	<ul style="list-style-type: none"> <li>▪ Limited applications</li> <li>- Expensive installation and maintenance cost</li> <li>- Complicated system configuration</li> <li>: management server, repeater, private S/W</li> </ul>	<ul style="list-style-type: none"> <li>▪ Various applications</li> <li>- Low price for installation and maintenance</li> <li>- Interwork with sensor network</li> <li>: No management server, repeater, and private S/W</li> </ul>

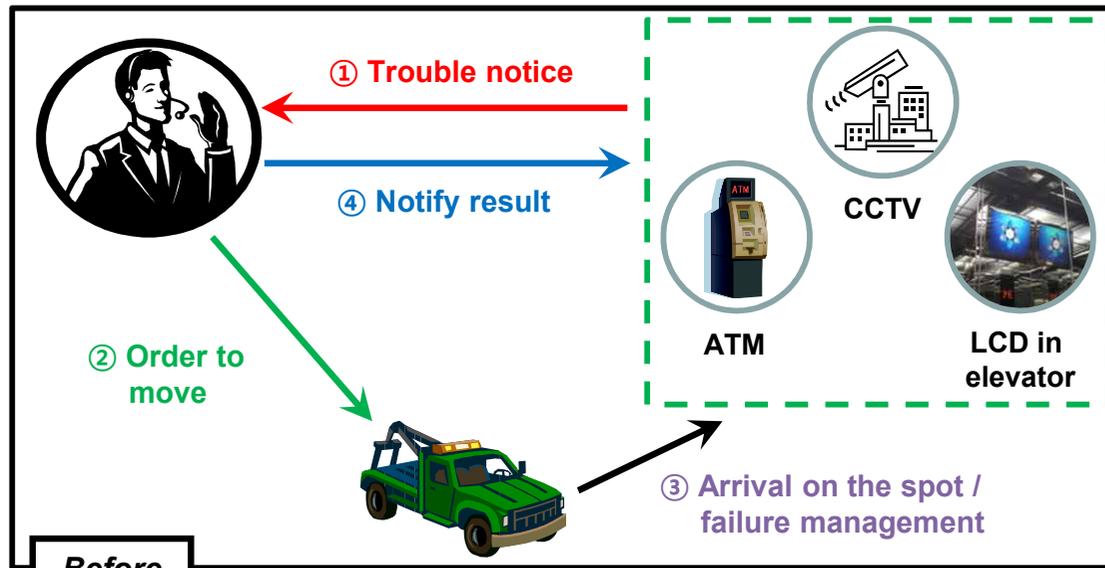
# Differences from the existing remote power controller



# Differences from the existing remote control system



# Differences from the existing remote control system

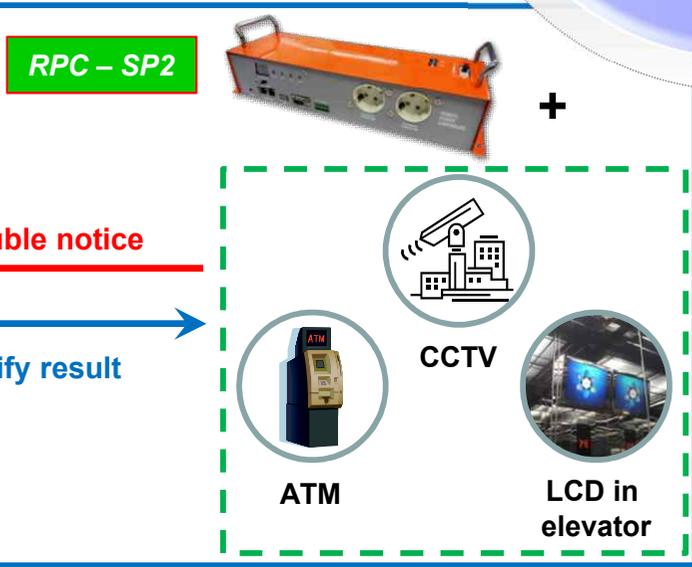


- Cost saving for maintenance
- Countermeasure rapidly and safely

Before

Apply the RPC-SP2

After



## Improvement of Energy Consumption efficiency

### Inefficient Energy Consumption cases

- Operation of system at a late night when utilization rate is very low
- Continuous energy consumption during breakdown in system
- Repair or switching OFF/ON through visiting and manual operation



### Efficient energy consumption

- Standby power saving
- Saving energy cost through decrease in energy consumption
- CO<sub>2</sub> emissions can be abated

### Public Campaign Advertisement

- Reducing CO<sub>2</sub> emission
- Energy Saving

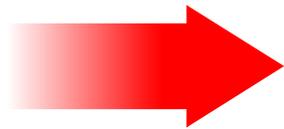


Administrator or user needs **to switch on/off an electric power into the system remotely** without visiting and manual operation

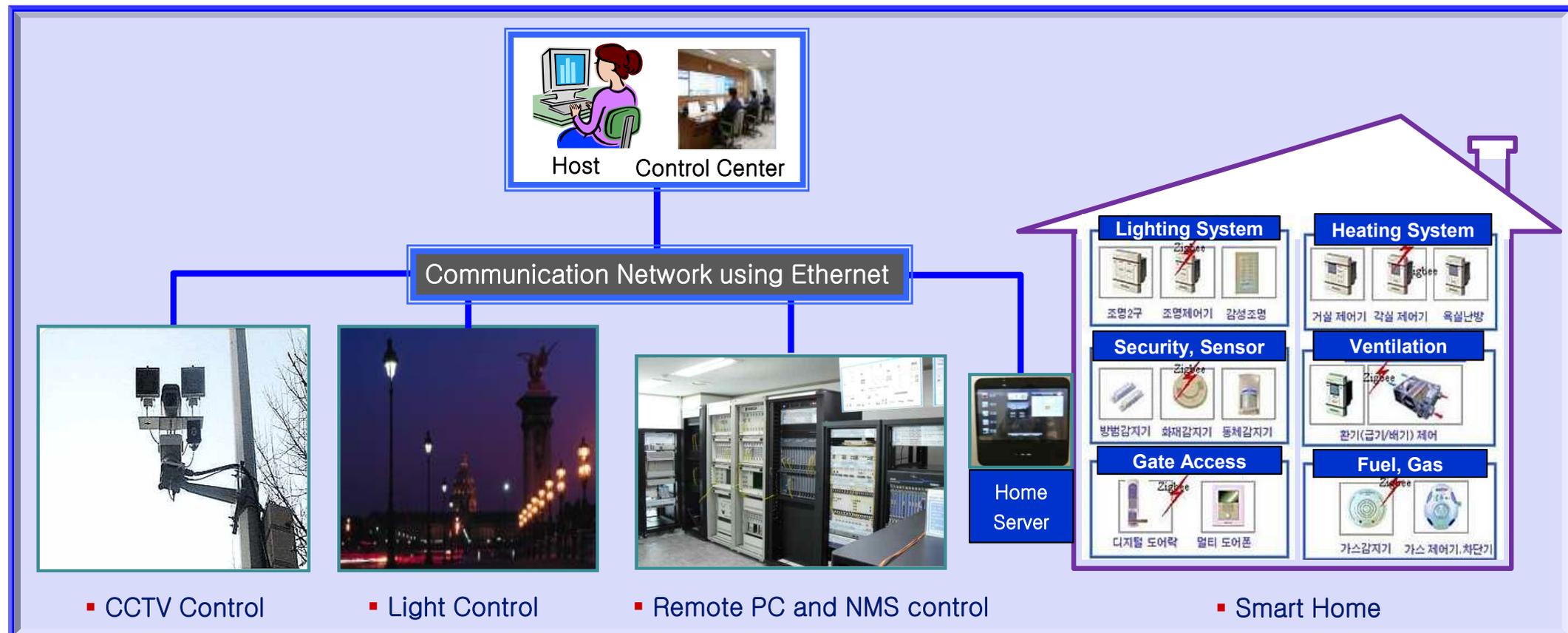
# Hard-Reset for the Remote control systems

## Rapid growth of the remote control system applications

: Frequent occurrences of the out of control conditions caused by **hanging problem from the remote control systems**



Administrator or user needs **a Hard-Reset for rebooting remotely** without visiting and manual operation

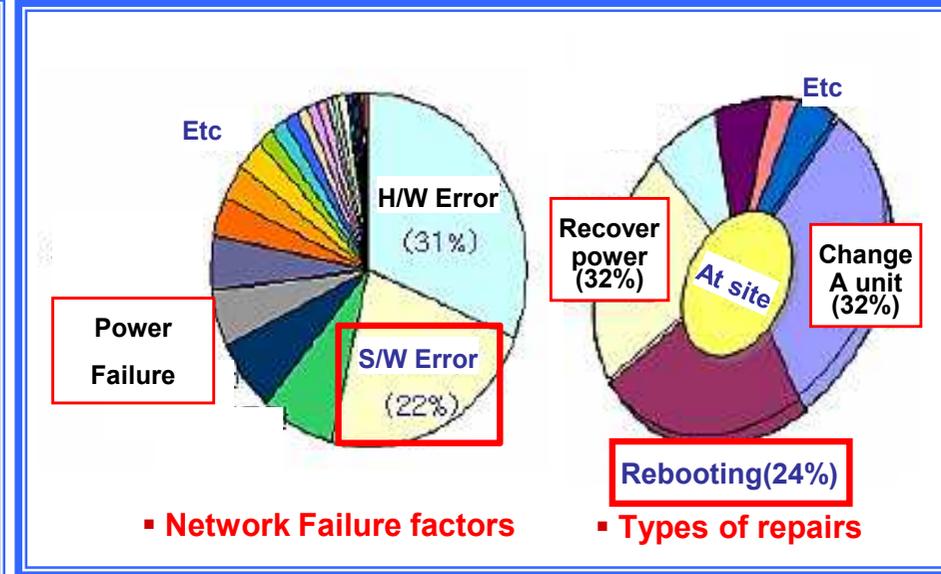


# Hard-Reset for the NMS in the IDC and unmanned communication station

## Various scale and types of Internet Data Centers(IDC)

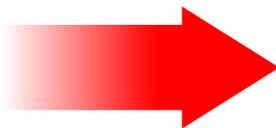


## Network failure factors analysis



- Communication company need to bring in a lot more server computers for mobile and broad-band contents
- Increasing market scale for the system integration management and application service providing
- **The importance of new construction and stable management of IDC is being emphasized**

## Frequent occurrences of the out of control conditions caused by **hanging problem from a switch hub and router in the IDC and unmanned communication station**



Administrator or user needs **a Hard-Reset for rebooting NMS such as a switch hub and router** without visiting and manual operation

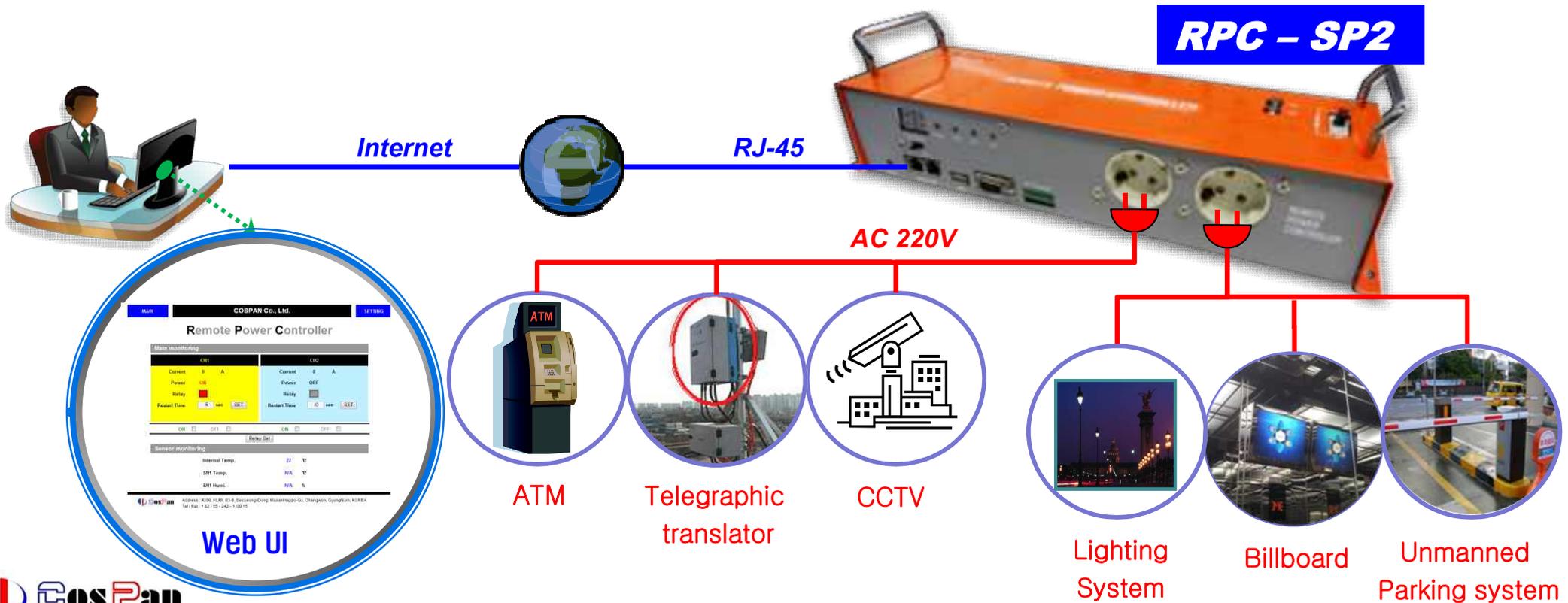
# Real Application case 1

Lighting system  
Electrical Equip.

- Remote power control for a Lighting system and an electrical equipment
- **Switching ON/OFF an applied electric power into the system and monitoring an operation condition remotely**

CCTV  
NMS

- Remote power control for an ATM, a telegraphic translator, a CCTV, an outdoor billboard, and an unmanned parking system.
- **Hard-Reset for rebooting the systems remotely without visiting and manual operation**



## Real Application case 2

Industrial computer

- Remote power control of an industrial computers with various sensor networks for such as a bridge, a railroad, and a factory automation
- **Hard-Reset for rebooting the systems remotely without visiting and manual operation**

