

**PACTECH**



# ICP DAS

## 2015 M2M

# IR Wireless Solutions



**2015/9**

*Industrial Computer Product Data Acquisition System PAC*



# Home Automation - IR





# IR Series Product List

- **IR Learning Remote Module**  
(Learn/Emit IR signal to control appliances)



Model	Description
IR-210	IR Learning Remote module (6 IR outputs, 224 cmds, MBRTU)
IR-712A	IR Learning Remote module (2 IR outputs, 224 cmds, MBRTU)
IR-712-MTCP	IR Learning Remote module (2 IR outputs, 512 cmds, MBTCP)

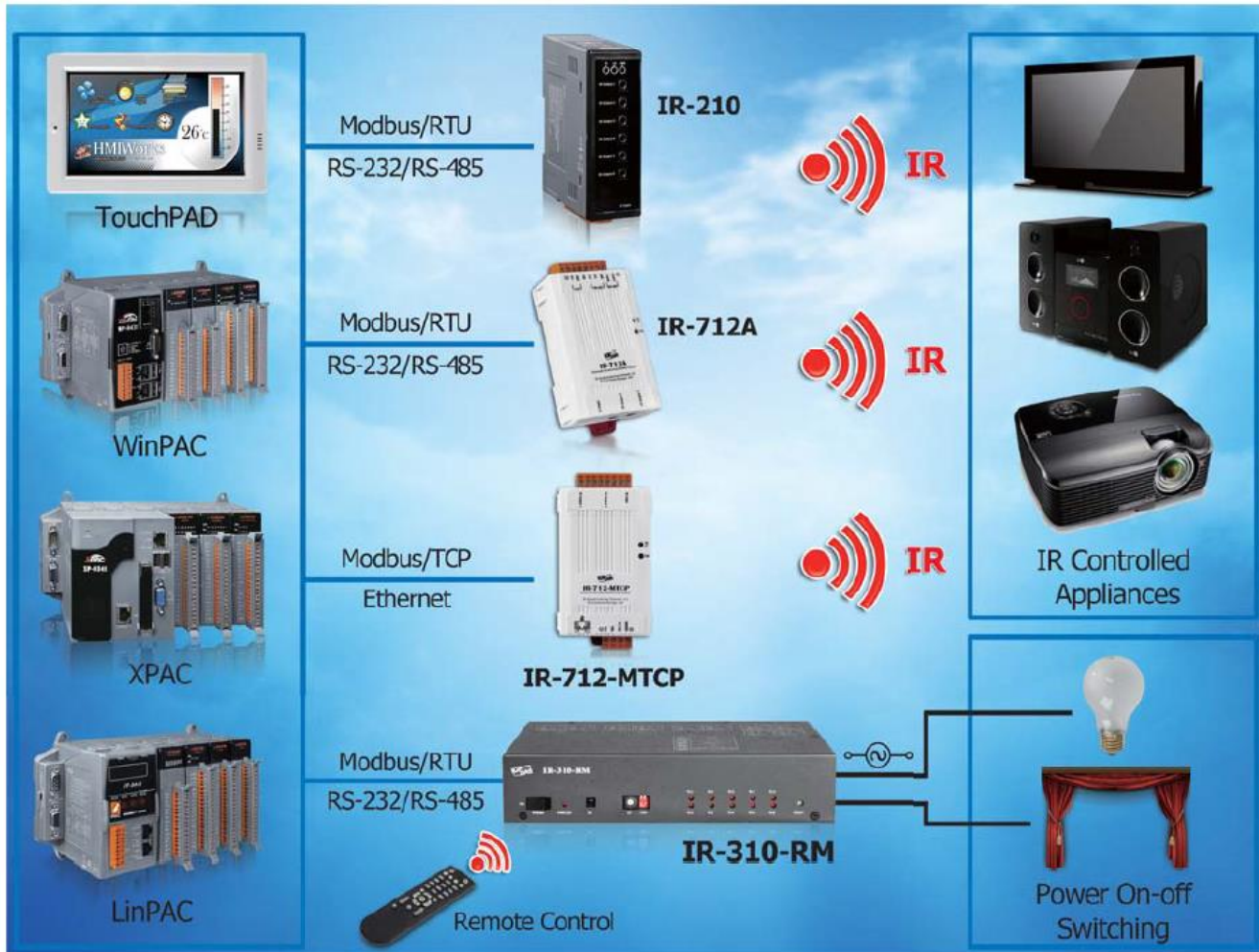
- **IR Controlled Power Relay Module**  
(For power switching control with IR remote control function.)



Model	Description
IR-310-RM	IR Controlled Power Relay module (RL: 5Ax6 10Ax4, MBRTU)

# IR Series Product List

- Application Structure Diagram





# IR Learning Remote Module

- Main Function
  - Learns IR commands of electronic appliances.
  - Supports Modbus communication to integrate with the HMI and host controller for the smart home application.



IR-210



IR-712A



IR-712-MTCP



# IR Learning Remote Module

- Features
  - Multiple IR outputs for multiple remote devices.
  - Supports 6 IR carrier frequencies which covers most of the IR remote appliances.  
(32.768, 36, 37.037, 38, 40, 56 kHz)
  - Can store IR learning commands.
  - Provides RS-232/RS-485 or Ethernet interface.
  - Supports Modbus protocol with FC 6 & FC16



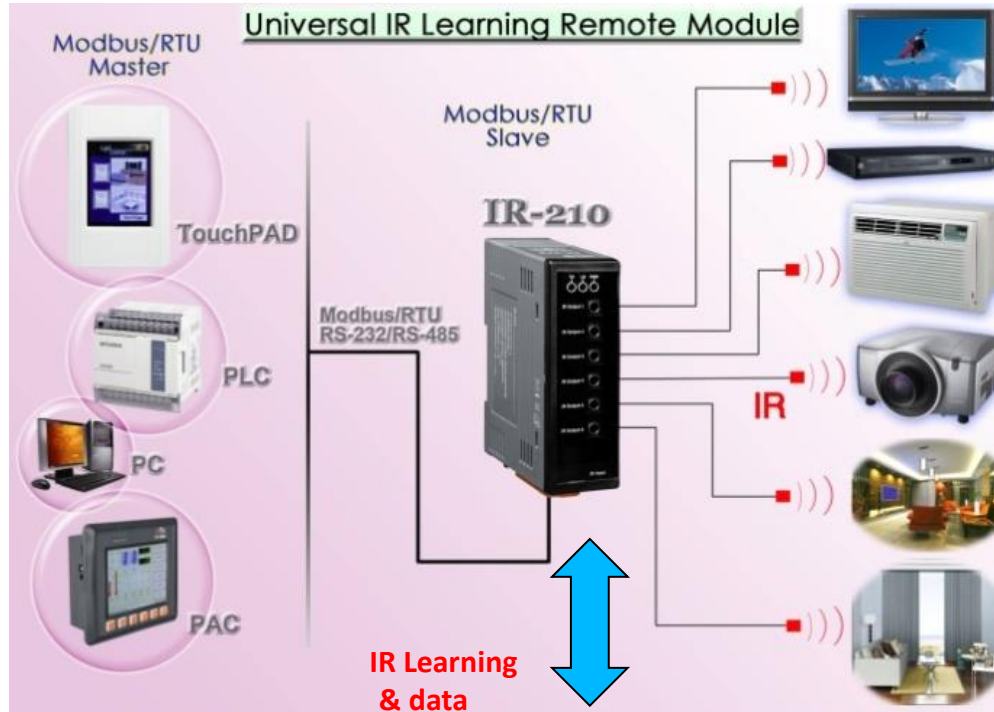
# IR Learning Remote Module

- IR Remote Series Comparison

Model	IR-210	IR-712A	IR-712-MTCP
IR Output	6	2	
IR Cmds Storage	224	224	512
IR Input	1 IR learning input for carrier frequencies: 32.768、36、37.037、38、40 & 56 kHz		
Communication	RS-232 and RS-485 Baud rate : 9600 ~ 115200 bps		10/100 Base-TX, 8-Pin RJ-45 x1
Protocol	Modbus RTU (slave)		Modbus TCP/UDP (server)
LED Indication	3 LEDs: TR (IR Out) 、LN (Learning) 、PWR (Power)	2 LEDs: TR/LN (IR out/Learning) 、PWR (Power)	
Power	+10 ~ +30 V <sub>DC</sub>		
Installation	DIN-Rail		
Size (W x H x L)	33mm x 107mm x 78mm	52 mm x 77 mm x 27 mm	

# IR Learning Remote Module

- IR-210/IR-712A Application Structure



IR Utility



IR Remote





# IR Learning Remote Module

- IR-712-MTCP IR + Wi-Fi Application





# IR Controlled Power Relay Module

- Main Function of IR-310-RM
  - Power switching control for appliances.
  - IR remote control function and serial communication interface with Modbus/RTU.
  - For the application of power control, light control and energy conservation, etc.



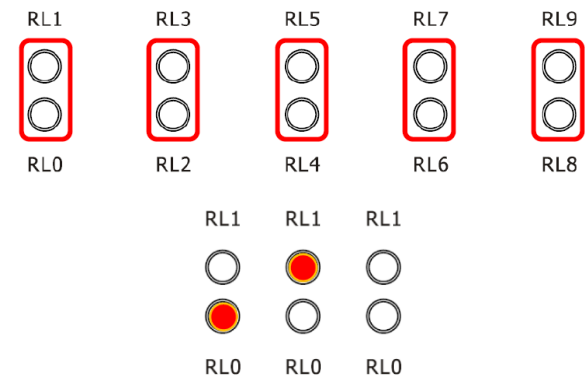
IR-310-RM



# IR Controlled Power Relay Module

- Features

- 10-ch relays: 10A x 4, 5A x 6 (220 V<sub>AC</sub>, 25°C)
- NO/NC and circuit protection for each relay
- Sequential power control
- Interlocked power control (Max. 5 sets )
- Power-on values and power failure memory for relay status
- Supports IR remote control
- RS-232 and RS-485 interfaces
- Modbus/RTU protocol

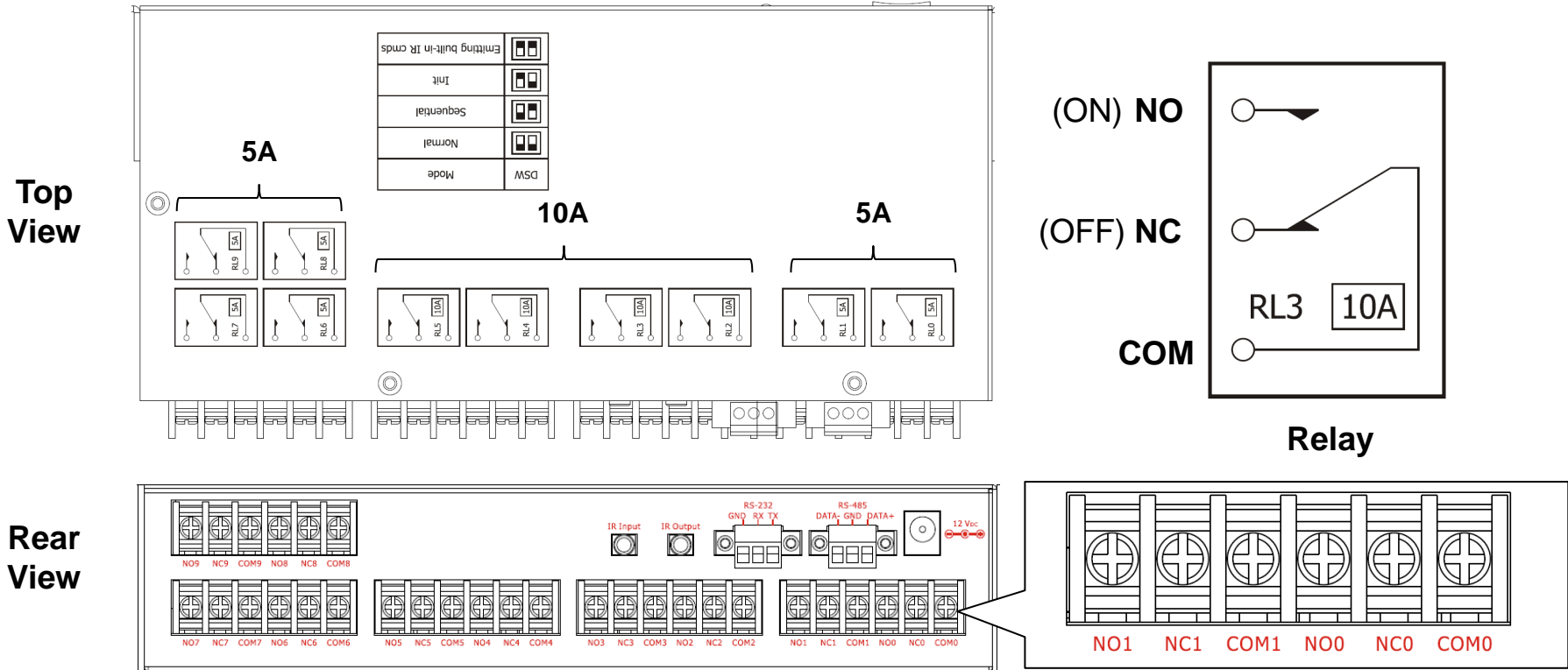




# IR Controlled Power Relay Module

## • IR-310-RM Features – Relay

- 10-ch high power relays: 10A x 4, 5A x 6 (220 VAC , 25°C)
- Form C SPDT Type (NO/NC) & protection circuit for each relay output.





# IR Controlled Power Relay Module

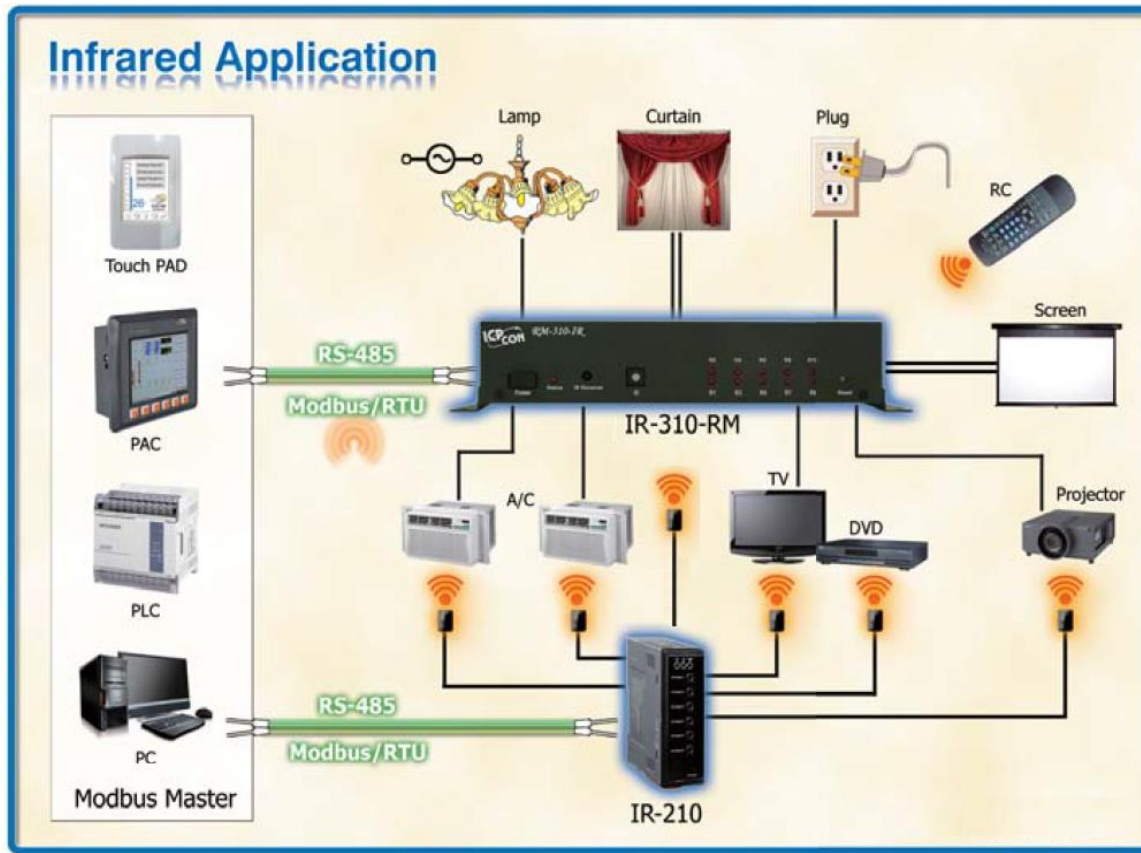
- IR-310-RM Specification

Model	IR-310-RM
Relay Outputs	5A @ 220 VAC for RL0, RL1, RL6 ~ RL9 10A @ 220 VAC for RL2 ~ RL5 Type: Form C relay SPDT (NC/NO) (Operating Temperature: 25° C)
IR Interface	1 built-in IR receiver 1 IR input jack (for IR receiver cable) 1 IR output jack (for IR emitter cable) Supports custom 64/built-in 32 IR commands to control the relay outputs.
Communication	Interface: RS-232(TxD, RxD, GND) and RS-485(DATA+, DATA-) Format: Parity = None, Databits = 8, Stopbits = 1 Baud rate: 9600 ~ 115200 bps
Protocol	Modbus/RTU (slave) Net ID: 1 ~ 15 (hardware) and 1 ~ 247 (software)
LED Indication	11 LEDs for power/IR and relay status indication.
Power	+12 V <sub>DC</sub>
Size	220 mm × 48 mm × 113 mm (W x H x L)

# IR Controlled Power Relay Module

- IR-310-RM Application Structure








- IR-310-RM for power switching control; IR-210 for remote control.



E-Classroom,  
Conference room,  
home theater...

# IR Cables

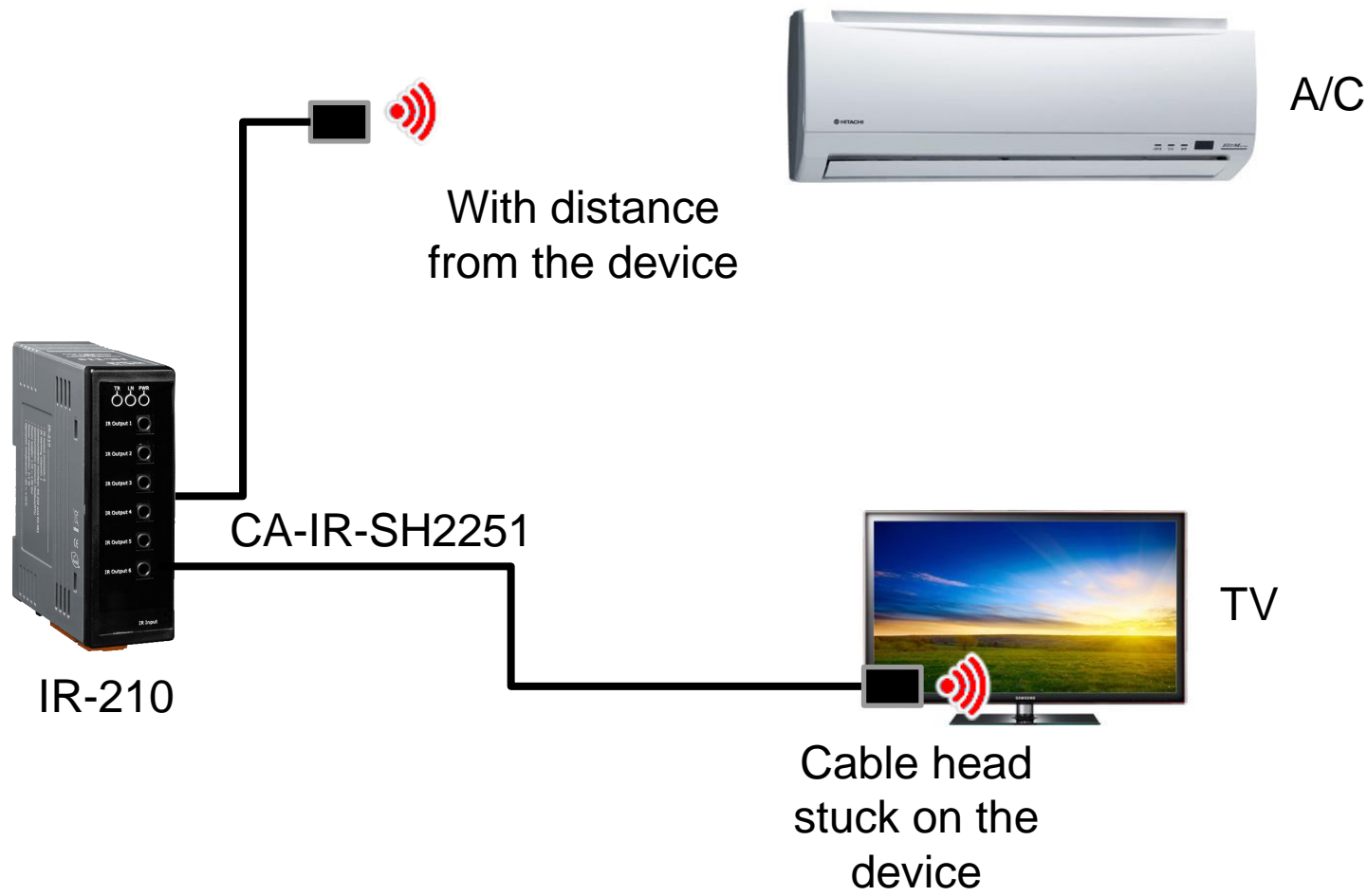
- List of IR Cables

Figure	Part No.	Description
	CA-IR-SH2251	Single-headed IR emitter cable (Ø 3 mm IRED, 2.5 m)
	CA-IR-SH2252	Dual-headed IR emitter cable (Ø 3 mm IRED, 2.5 m)
	CA-IR-SH2251-5	Single-headed IR emitter cable (Ø 5 mm IRED, 2.5 m)
	CA-IR-SH2252-5	Dual-headed IR emitter cable (Ø 5 mm IRED, 2.5 m)
	CA-IR-SH2251-360	Semi-sphere-headed IR blaster cable (2.5 m)
	CA-IR-SH1251-360	Semi-sphere-headed IR receiver cable (2.5 m)
	CA-IR-001	IR receiver cable (3 m)



# IR Cables

- Usage of single-headed IR emitting cable

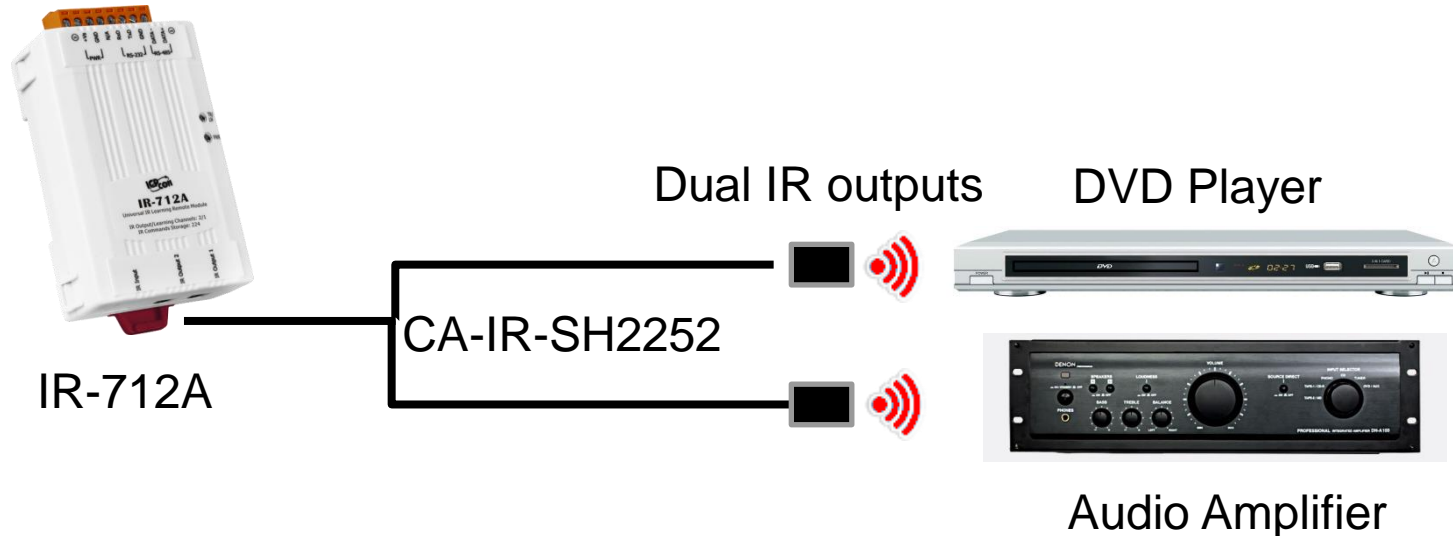






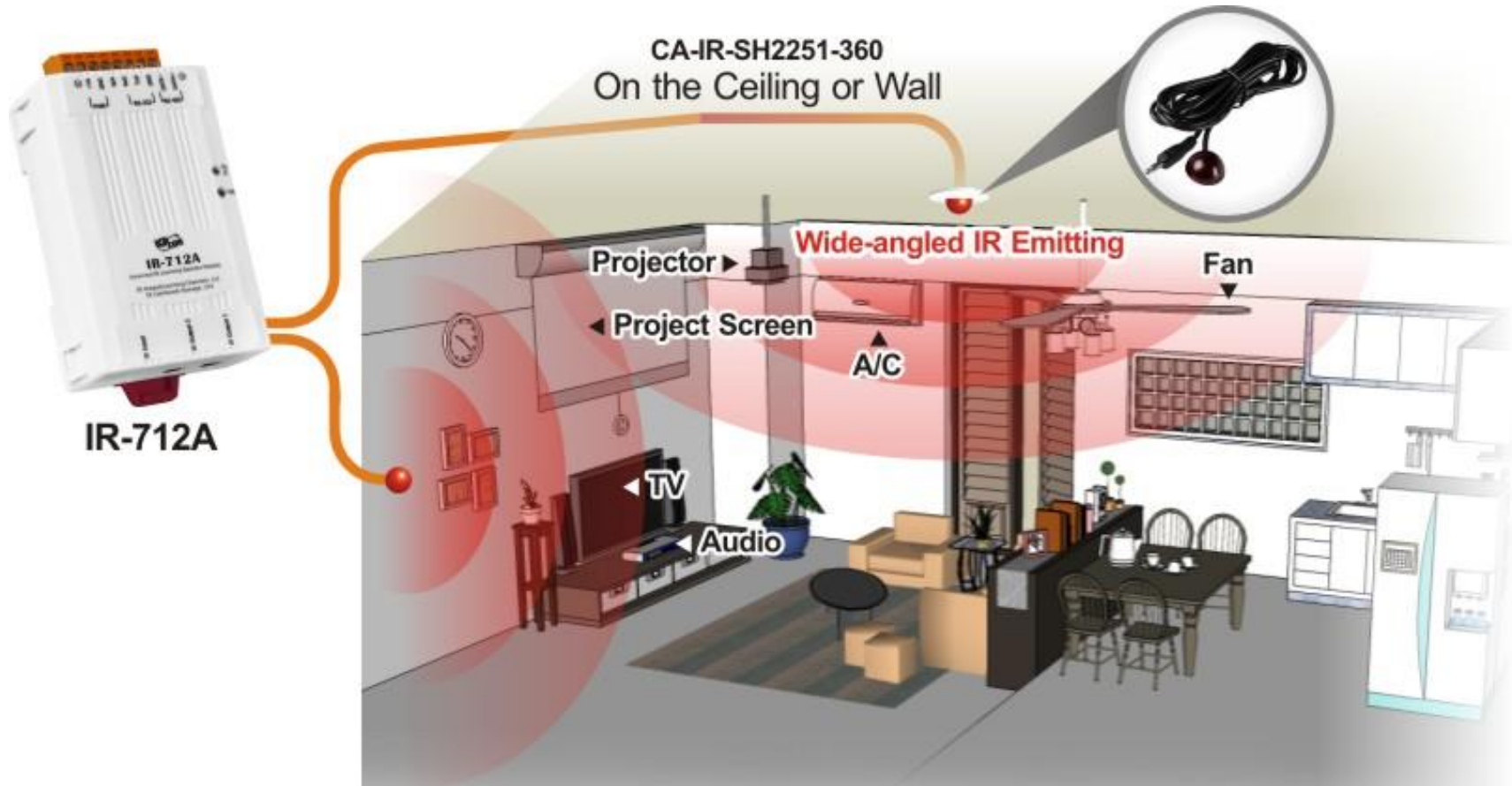
# IR Cables

- Usage of dual-headed IR emitting cable



# IR Cables

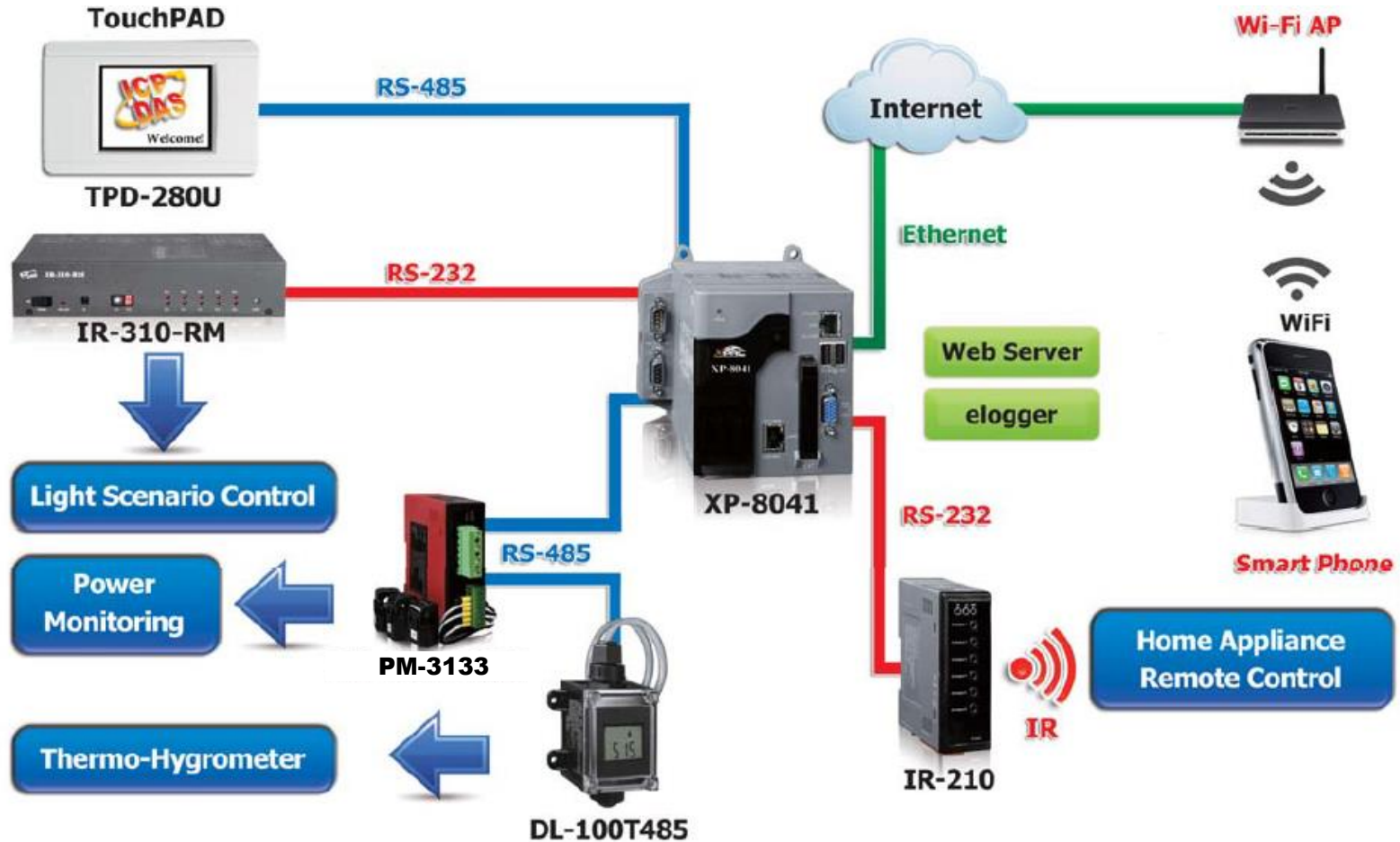
- Usage of semi-sphered IR blaster cable





# IR Series Application

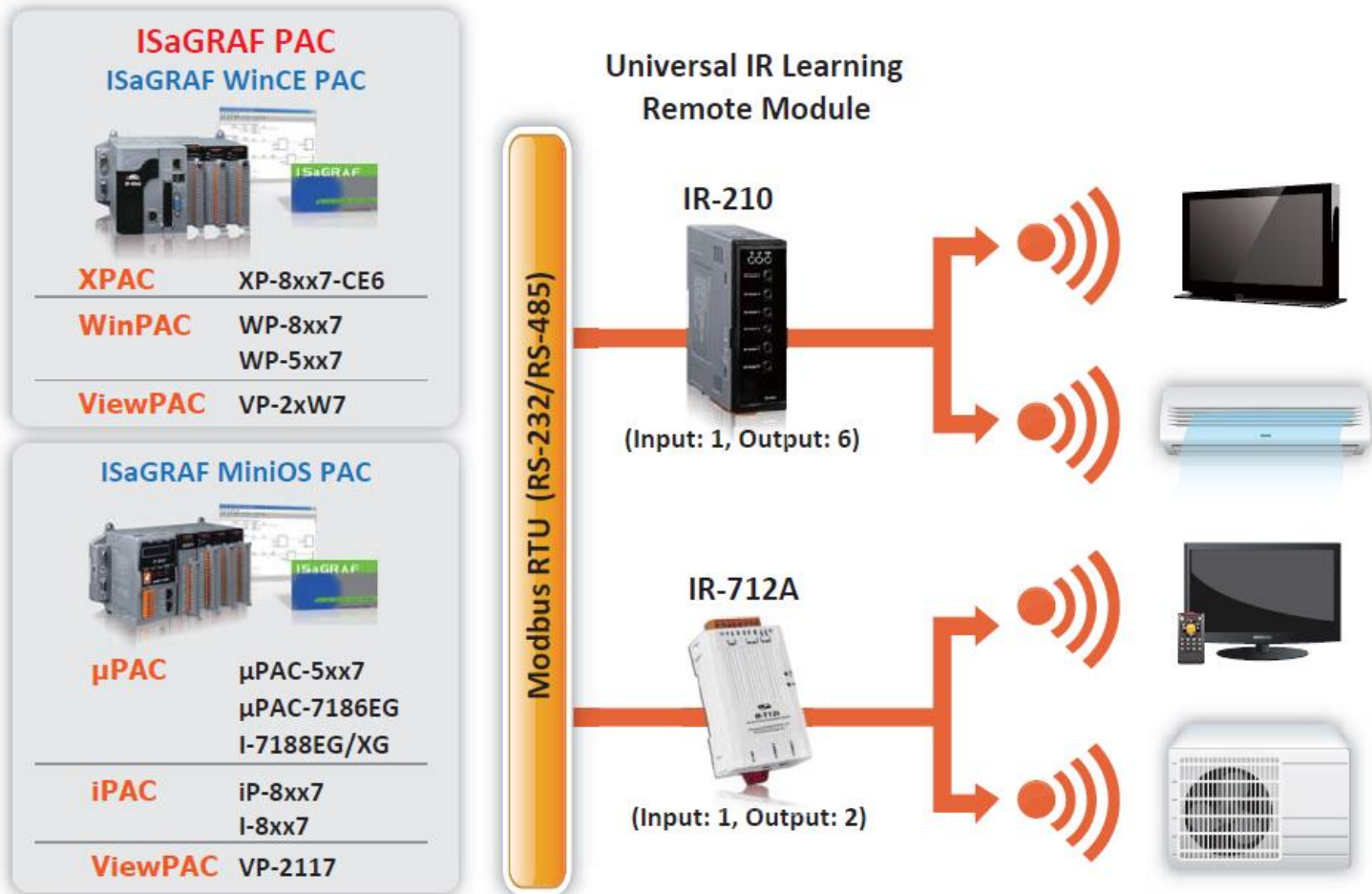
- **Smart Home Application** – integration of remote control and power monitoring.
  - IR-210=>IR remote control; IR-310-RM=>Light control; Smart phone=>remote phone control; PM-213x=> power monitoring; TouchPAD=>HMI; DL-100TM485=>Thermo-Hygrometer; PAC=>Modbus Master/Slave & Web server.



# IR Series Application

- ISaGRAF PAC with the IR Remote Application

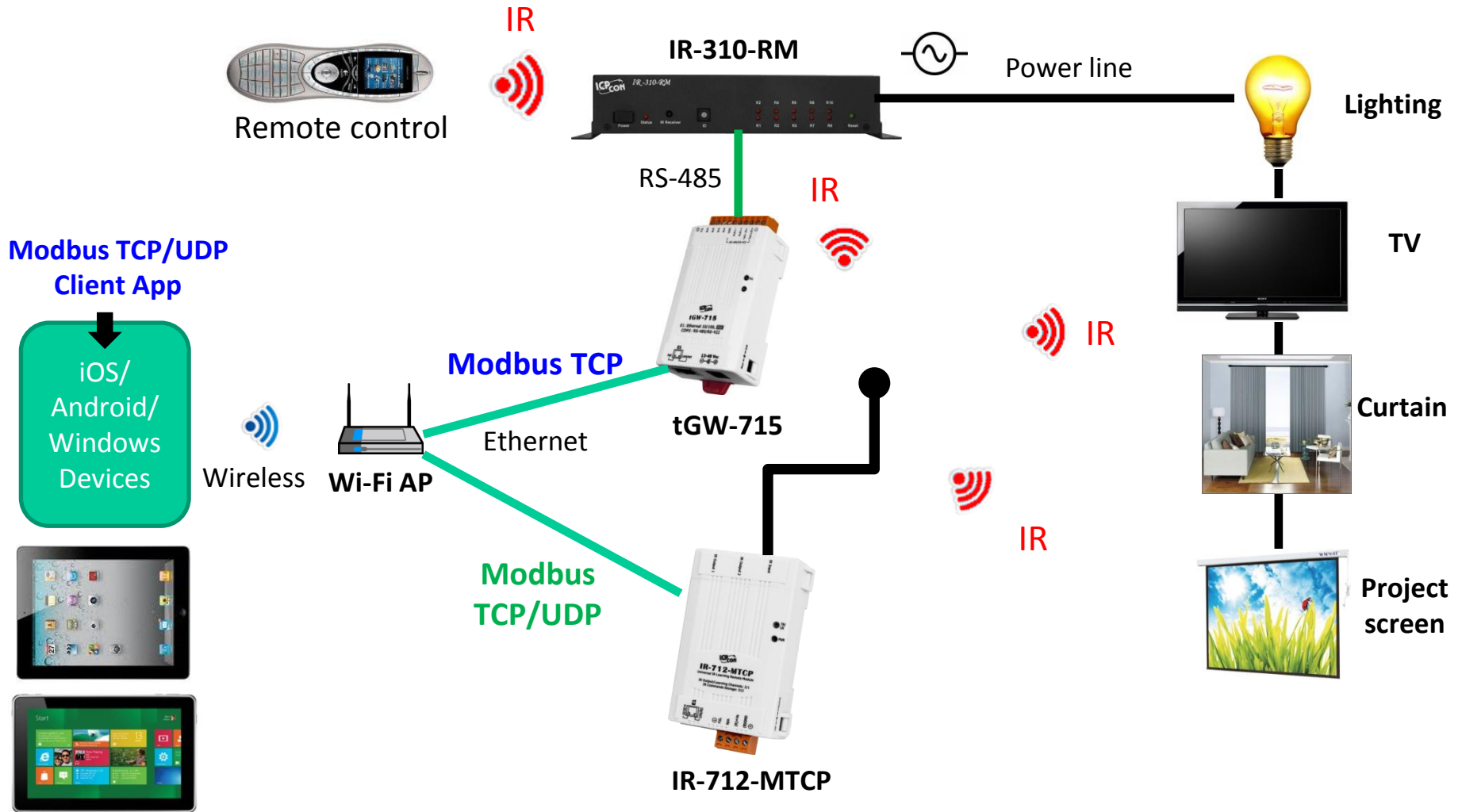
- With the ISaGRAF PACs integrating the IR modules and devices, users can easily to establish the home automation system. ([Link](#))





# IR Series Application

- Smart Phone/Tablet PC Controlling the Home Appliances





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# Thank You

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