tSH-700

Serial Port Sharer

Allows two controllers to work together

- Serial Port Sharing
- Baud Rate and Data Format Conversion
- RS-232/ RS-485 Interfaces Conversion
- Modbus RTU/ASCII Protocols Conversion
- Modbus ID Filtering & Virtual ID
- Access Management

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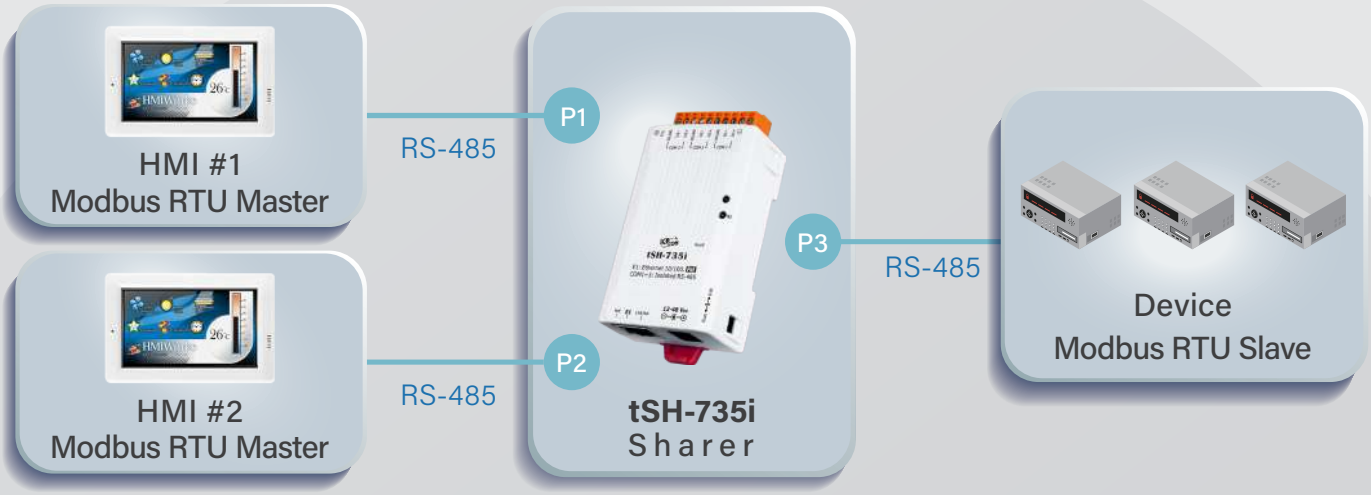
In a vast factory, traditional Modbus serial communication, following a request-response cycle, only allowed one master to control devices. This makes simultaneous control in the field and at a control center impossible, decreasing management efficiency as a result.
To address this problem, ICP DAS offers the tSH-700 series serial port sharer to enable two controllers to control serial devices at the same time. The configuration is simple. No adjustment to the original settings is needed.

Product Features

Serial Port Sharing

The three built-in serial ports of the tSH-73X module enable two master controllers to access and control multiple slave devices together, increasing management efficiency.



Baud Rate and Data Format Conversion

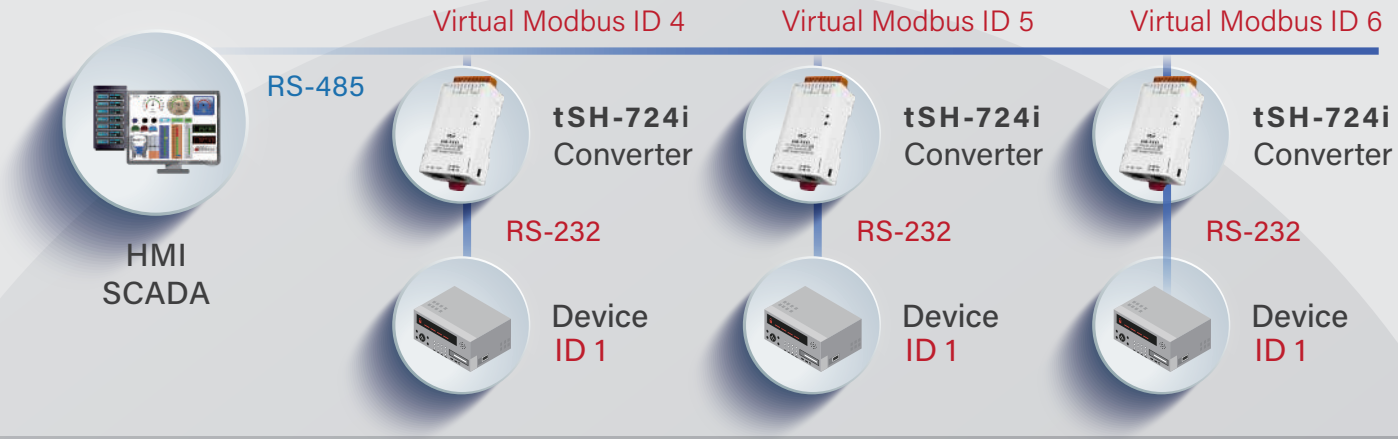
Converting baud rates and data formats allows for integrating master controllers and slave devices without altering the original communication configurations.

Communication Interfaces and Protocols Conversion

Converts RS-232/RS-485 interfaces and Modbus RTU/ASCII protocols.

Virtual Modbus ID

When traditional equipment requires connection to an RS-485 network, yet the original Modbus ID remains fixed, using the tSH-700 Series modules allows the master controller to access multiple devices via virtual Modbus IDs. This increases system scalability and integration capabilities.

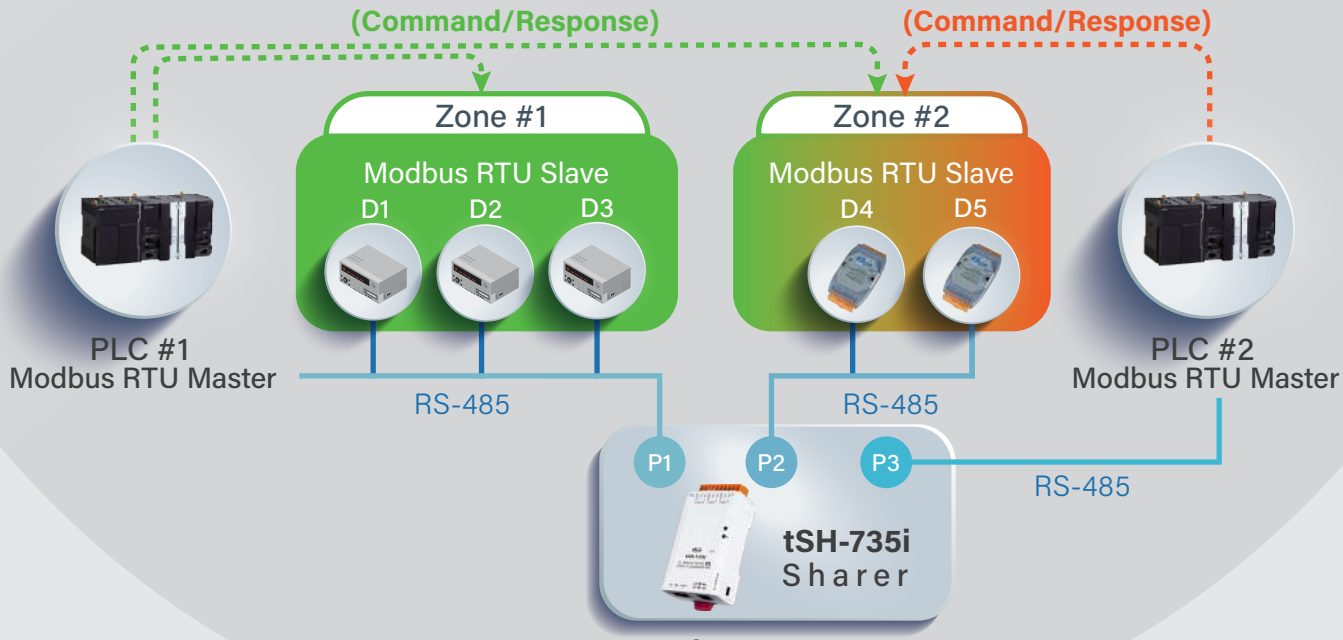


Modbus ID Filtering

Only certain Modbus ID packets are allowed to pass through, skipping irrelevant commands to avoid overloading RS-232/485 devices and causing communication delays.

Access Management

Combining serial port sharing with Modbus ID filtering allows for shared or restricted access to slave devices, thereby enhancing overall management efficiency. For example, devices 1-3 are accessed by PLC#1, while devices 4-5 are accessed jointly by PLC#1 and PLC#2.

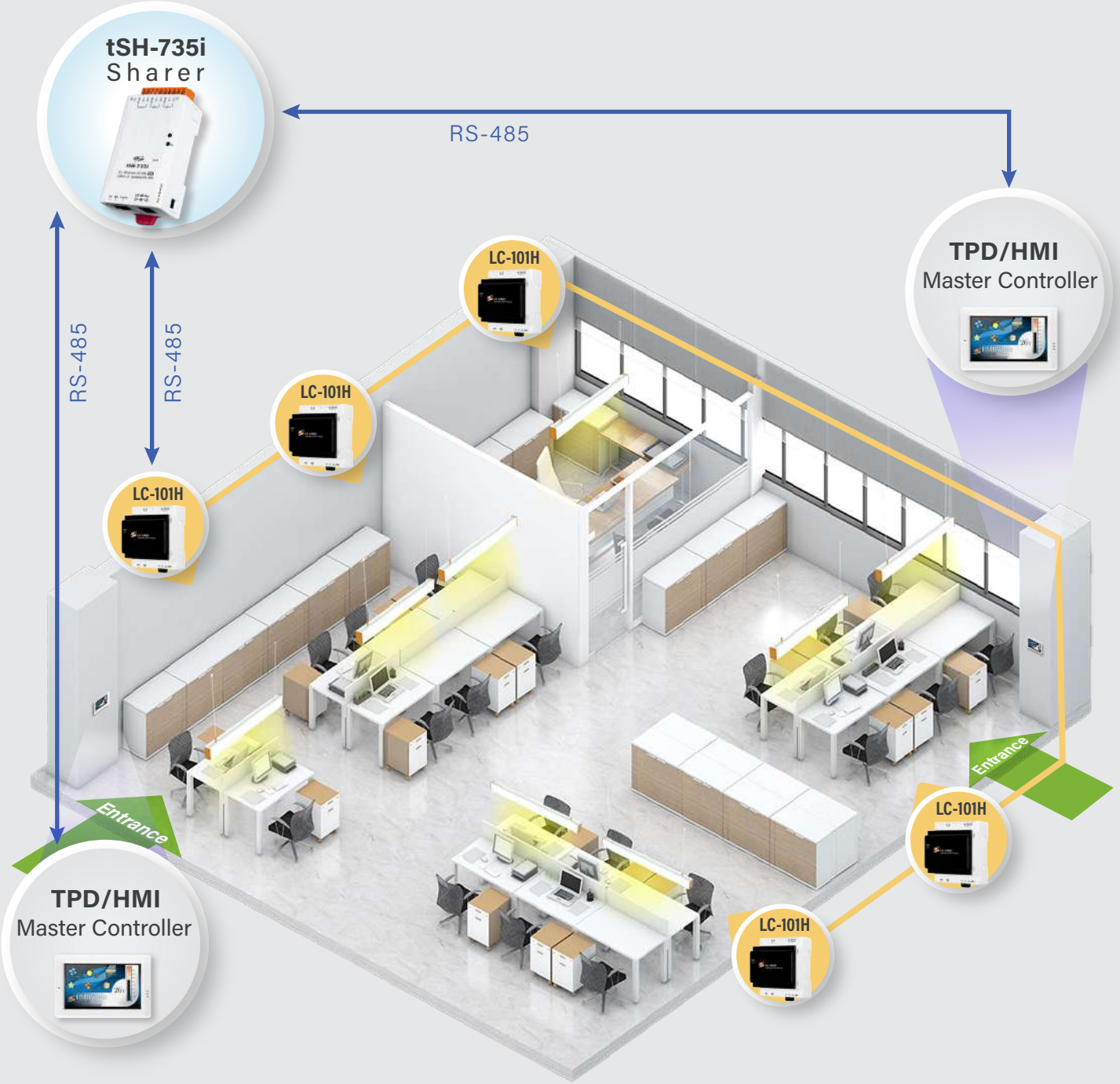


Smart Building
Office Lighting Controls

Increasing Management Efficiency

Reducing Electricity Costs

In large offices where light switches are usually scattered, managing lighting can be troublesome. Utilizing the tSH-73X Serial Port Sharer with its three built-in serial ports supporting connections with two HMIs, management personnel can control all lights via these HMIs. This eliminates the hassle of manually toggling switches across different areas, consequently reducing electricity costs.

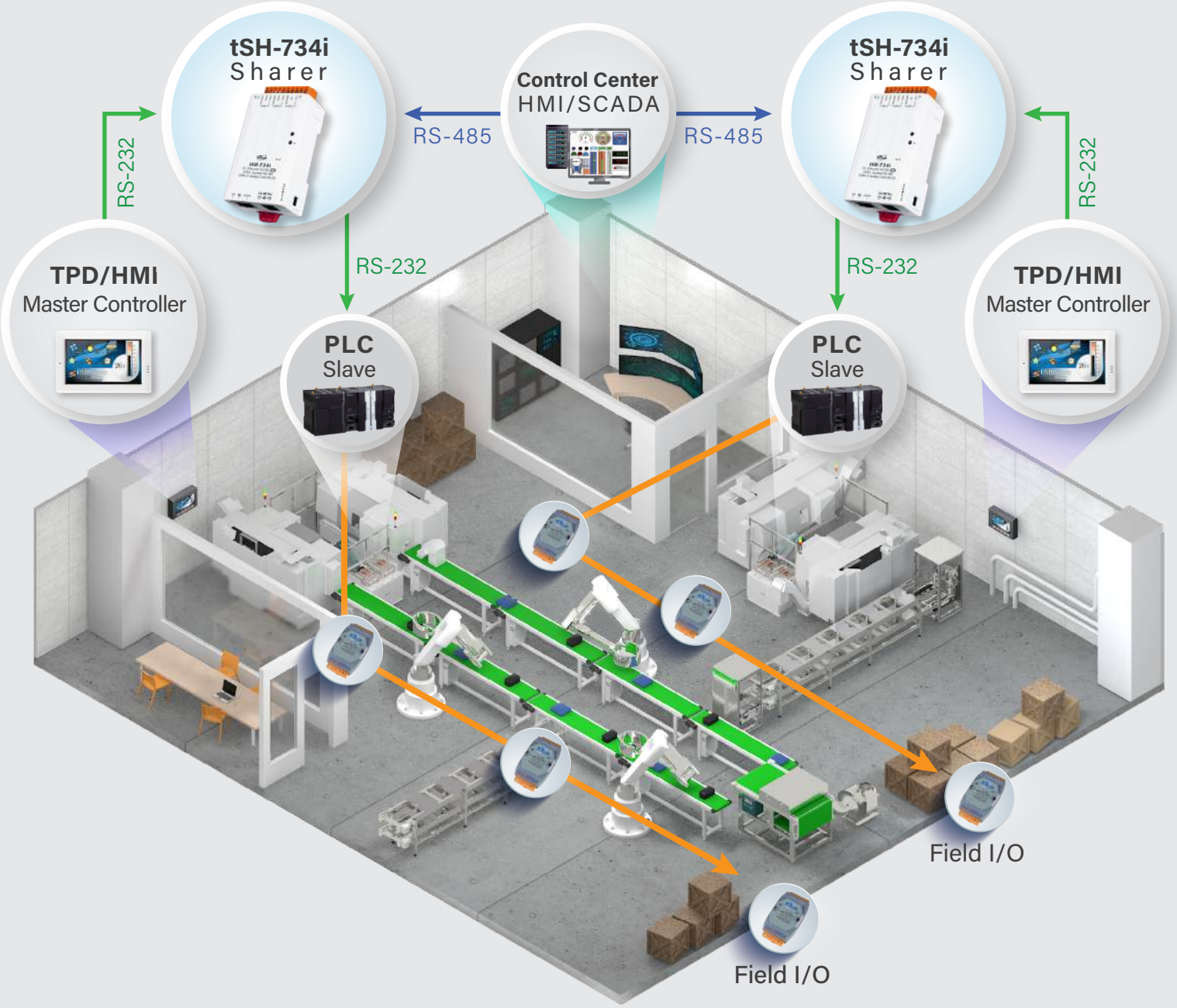


Smart Factory
Production Line Monitoring

Commands Buffering to Avoid Collisions

Simultaneous Operation of Two Master Controllers

In this scenario, to enhance real-time responsiveness and facilitate on-site parameter adjustments without modifying the central control HMI, the client implemented tSH-700. This allows multiple on-site HMIs to control production line machines concurrently with the central HMI, thereby improving operational efficiency and configuration flexibility.
If both a central controller and an on-site controller issue commands simultaneously, one of the commands will be temporarily stored in the tSH-700 module. Once the first command is successfully transmitted, the stored command will then be transmitted, effectively preventing data collisions.



Product Selection

Model	RS-232	RS-485	Application	COM1	COM2	COM3
tSH-722i	2	-	Converter	3-wire RS-232	3-wire RS-232	-
tSH-725i	-	2		2-wire RS-485	2-wire RS-485	-
tSH-724i	1	1		2-wire RS-485	3-wire RS-232	-
tSH-732i	3	-	Sharer	3-wire RS-232	3-wire RS-232	3-wire RS-232
tSH-735i	-	3		2-wire RS-485	2-wire RS-485	2-wire RS-485
tSH-734i	2	1		2-wire RS-485	3-wire RS-232	3-wire RS-232

The tSH-700 series provides two power supply options: DC and PoE Switch.

Related Products

tDS-700 Series

Tiny Serial-to-Ethernet Device Server

tGW-700 Series

Tiny Modbus/TCP to RTU/ASCII Gateway

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