Network Data Bridge

East Moon Creation Technology

2023/02

About EMCTEK

- Started since 2009
- All our team members are IT specialists with above 20 years experience in IT system development
- All our team members have experience in leading or participating in introducing / developing large IT projects such as ERP、PLM、MES、CIM、CNC
- Key services we are providing are mainly self-developed software and hardware, and we are cooperating with a wide variety of partner companies developing solutions for different domains
- Our website - https://www.emctek.net

Our Customers

wistron

LITEON

群光電能 Chicony POWER TECHNOLOGY

lenovo

DELTA 台达 中达电通股份有限公司

Chroma

Arima COMMUNICATIONS

DynaPack

东风汽车公司 DONGFENG MOTOR CORPORATION

SHIN ZU SHING Since 1965

GENTEC

BenQ 明基逐鹿 BenQ Guru

FLEXium

英業達集團 Inventec

Quanta Computer

Product Function Lists

- GPI to GPO via Ethernet
- RS232/RS485 to RS232/RS485 via Ethernet
- POE Giga Switch (Optional)
- Fastest Data Transfer Rate - 100ms/per-data

Application Scenario

GPIO
RS485
POE SWITCH

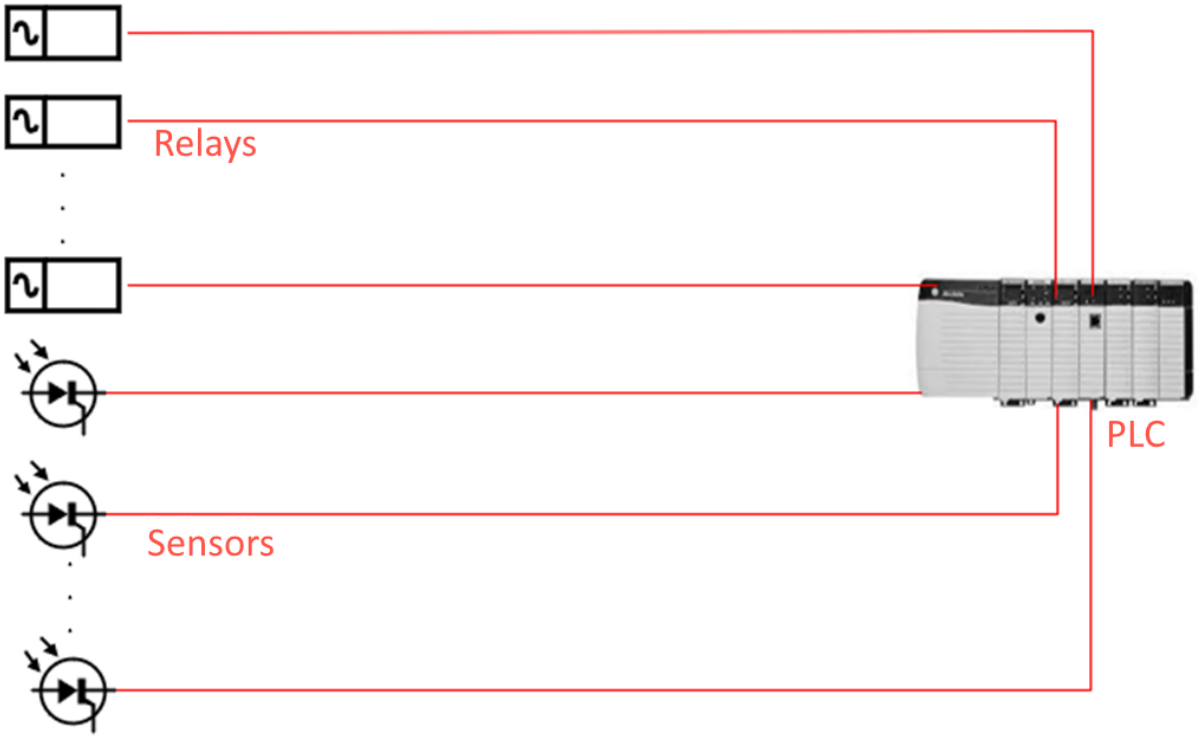
Replacing connection cables of various sensors between robotic arm and destination IPC with single Gigabit LAN cable. Providing high data transfer efficiency and simplifying wiring allocation at the same time.

Controller Side
E.g. IPC, PLC, other equipments ...

Equipment Side
E.g. Robotic Arms, ATE ...

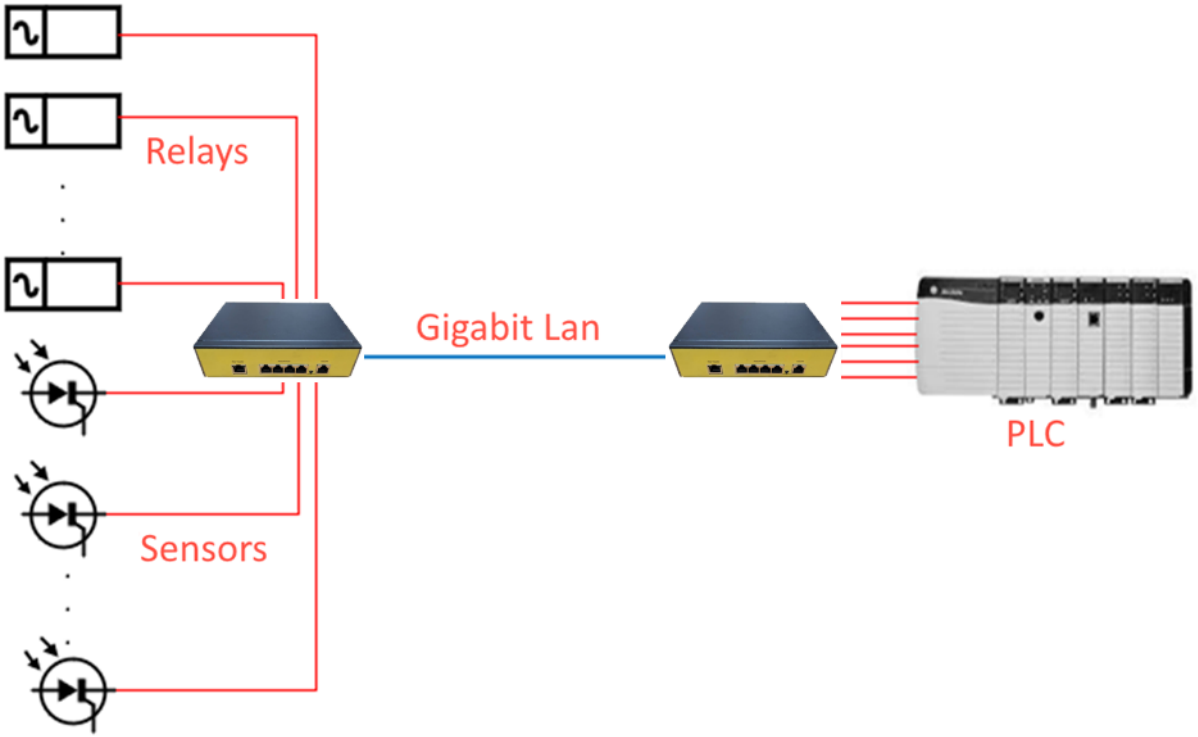
System Diagram（As-Is）

- Before applying NBD
  - Relays and Sensors are connected to PLC directly, resulting in plenty of long cables, and increasing difficulties of system building and maintaining



System Diagram（To-Be）

- After applying NDB
  - Relays and Sensors are connected to NDB first, and data is redirected to PLC via single gigabit-Lan cable, reducing difficulties of system building and maintaining



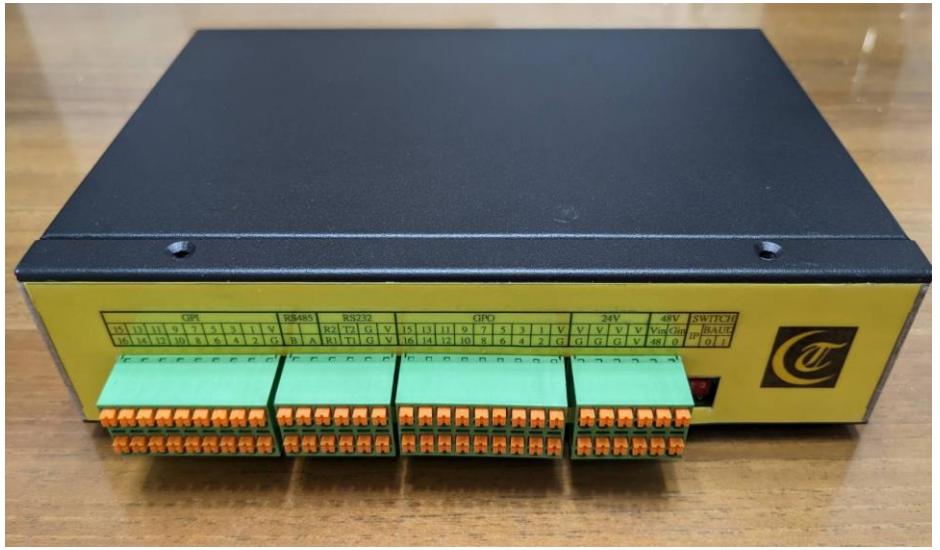
Benefit Analysis

- NDB is working transparently, and there's no need to change your original system architect.
- Plenty of cables are replaced with single gigabit-Lan, making it easier to build your system.
- Maintenance effort is greatly reduced since you only need to concentrate on one LAN cable instead of plenty cables while troubleshooting.
- Building cost is also lower with NDB if the distance between your sensors/relays and PLC is long or winding since you'll need to utilize pricy high class cables without NDB.

Product Pictures

Frontend –

- POE Lan Ports



Backend –

- Power Conn
- I/O Ports

Product Feature – Modular Design

- POE Switch Module
- GPI Module
- GPO Module
- UART Module
- Network Module（WIFI / LAN）
- Power Supply Module

Advantage of Modular Design

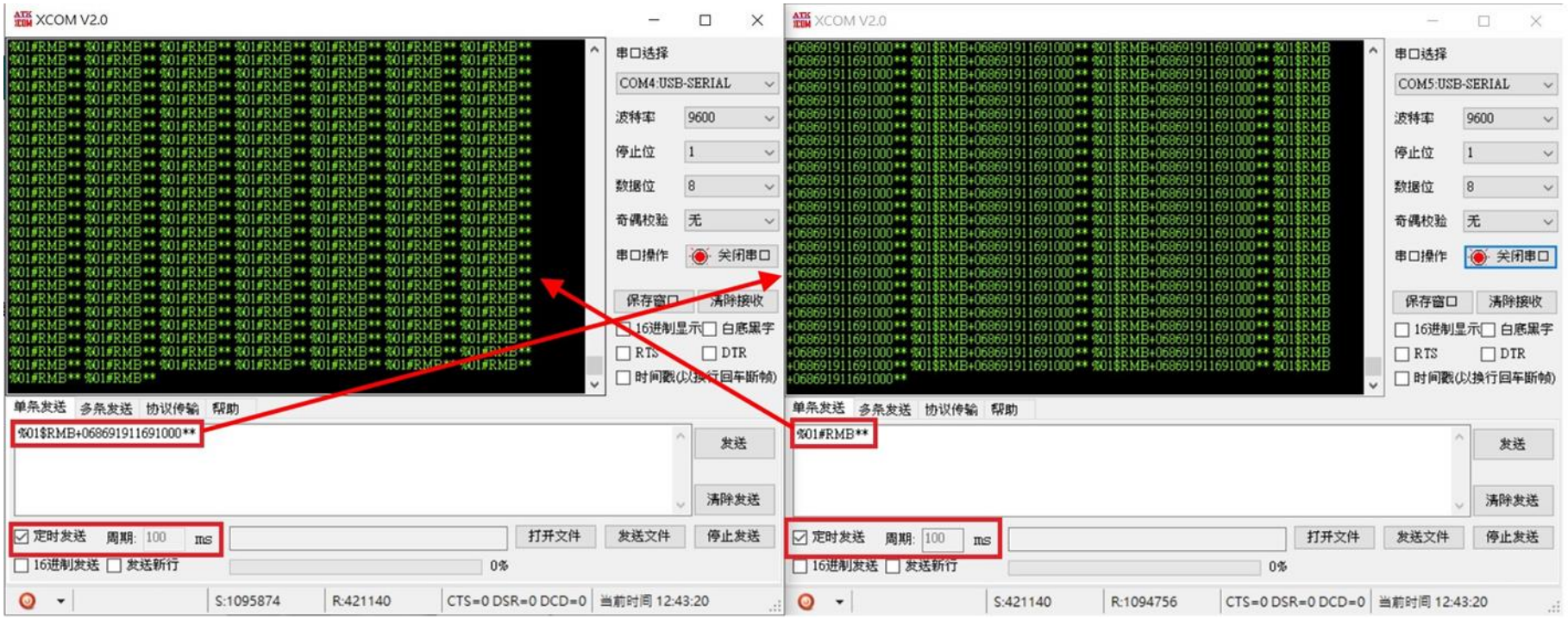
- Easy to debug
  - Allow focusing development on different modules simultaneously
- Easy to maintain
  - Reduce maintenance efforts by exchanging malfunctional module directly instead of fixing it
- Low maintenance cost
  - Batch preparing spare parts of different modules. Lowering the total maintenance cost in manpower and inventory
- Low response latency and high efficiency
  - Independent MCU for different module providing distributed system loading with higher speed and efficiency

Product Competitiveness

- Our competitiveness
  - Very low response latency，transferring data with frequency of **100ms/per-data** without lagging or data lost
  - Petit size, with form factor **L 184 * W 124 * H 44 mm**
  - Very low power consumption, and no fan needed
  - Supporting **WIFI / LAN** transfer，and providing flexibility in various application scenario

Simulating Test Scenario

- Data transfer rate set as 100ms/per-data (lowest limit 50ms)
- Data input from Bridge-A RS232 Port.
  Data transferred from Bridge-A to Bridge-B via ethernet.
  Data output to Bridge-B RS232 Port.



Q & A

Thank you