

CR-04
Wi-Fi/BT
3rd Party
Bridge USB
Dongle
User Guide
2026



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Introduction

About This Guide

Keilton+autani lighting control system is capable of **connecting to third-party systems** such as Building Automation System so it can be part of a larger system.

Keilton+autani lighting control system provides certain connection protocols, known as Application Programming Interfaces (APIs), so that third-party systems can communicate with Keilton. The APIs covered in this guide include:

- Modbus TCP - An open communication protocol widely adopted by industry and automation systems.
- REST - Representational State Transfer (REST) is a Web service protocol compatible with most IT systems.

Product Overview

CR04 Bridge Specifications

Wi-Fi/Bluetooth Third-Party Bridge USB Dongle

CR04 is a Wi-Fi dongle with Bluetooth Low Energy (BLE) and Wi-Fi hardware connections. The BLE connects to Keilton+autani devices while the Wi-Fi connects to third-party systems. It provide **Modbus TCP** and **REST APIs** simultaneously over Wi-Fi connections.



CR04

Features:

- Support mainstream Wi-Fi encryption, such as WPA2_PSK
- Support both DHCP and static IP assignment
- Automatically synchronize date/time and Daylight Saving Time settings from mobile device
- Modbus TCP API for building automation integration
- REST API for IT system integration

The CR04 provides dual API support for maximum compatibility. Modbus TCP enables integration with building automation systems (BAS), HVAC controls, and energy management platforms using industry-standard protocols. REST API provides web-based integration for IT systems, cloud platforms, and custom applications.

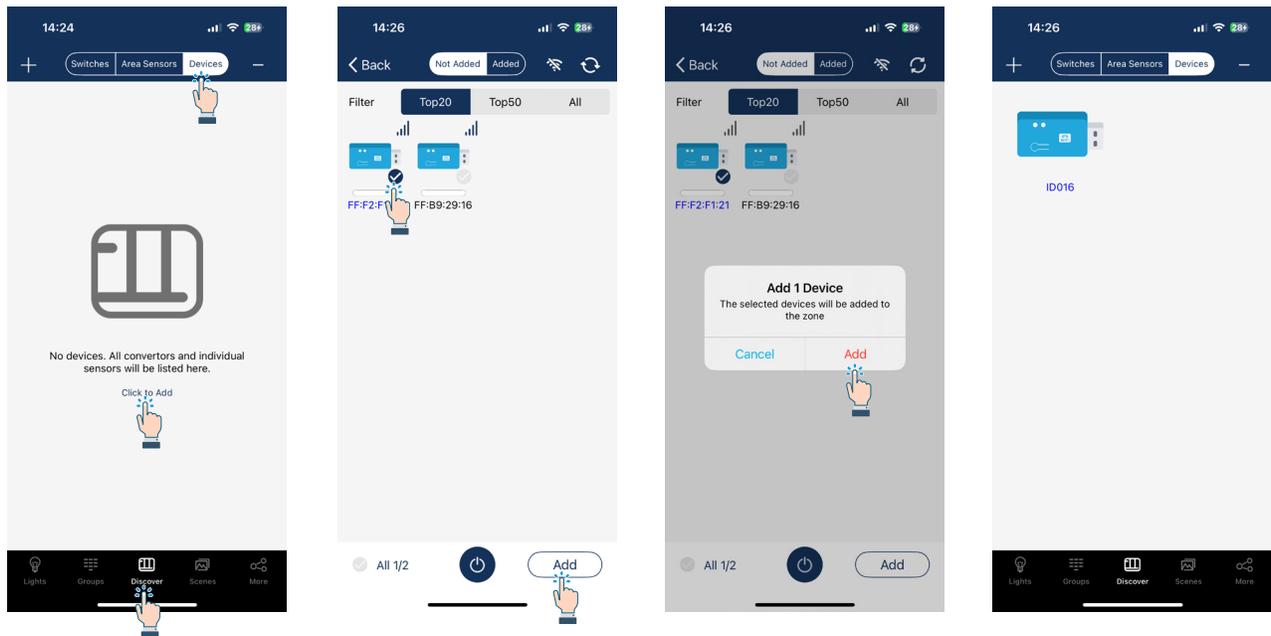
Note: Upgrade sensor/controller firmware to version 221010 or later for full CR04 API compatibility.

Installation and Setup



*Refer to the Keilton+autani App Instruction for adding lights and commissioning.

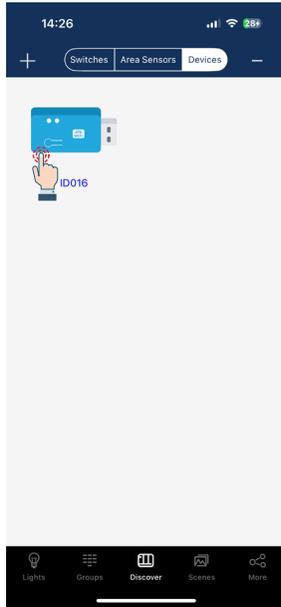
Add CR04 Dongle to Keilton+autani App



1. Go to **'Discover'** page, select **'Devices'** then select **'Click to Add'** to find and add CR04 dongle

2. Select the dongle checkbox and then select **'Add'** to add it to the zone

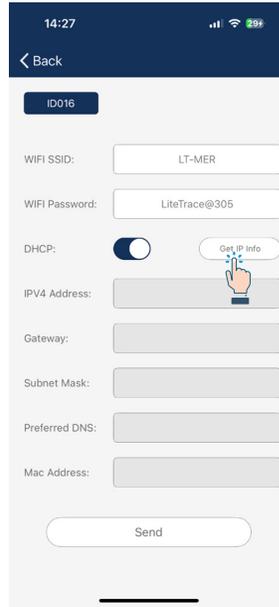
Configure Wi-Fi Settings



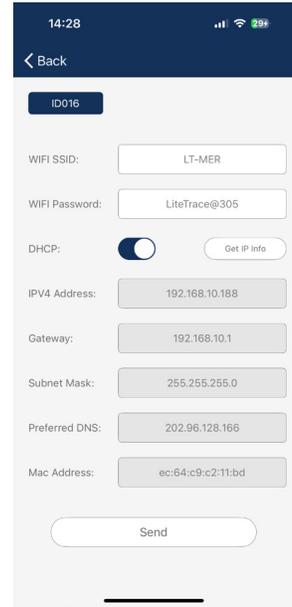
1. Press and hold the CR04 dongle icon to open the Wi-Fi configuration page



2. Enter the Wi-Fi SSID and password, select DHCP, then select 'Send' to transmit the configuration to the dongle



3. Select 'Get IP Info' to retrieve the IP address. The dongle may require several seconds to connect to Wi-Fi and obtain an IP address



4. Record the automatically allocated IP address for future use. Alternatively, disable DHCP and manually enter a static IP address for the dongle

Third-Party Integration APIs

Modbus TCP API

Refer to 'CR04_Modbus_API.xlsx' for complete Modbus TCP API specifications.

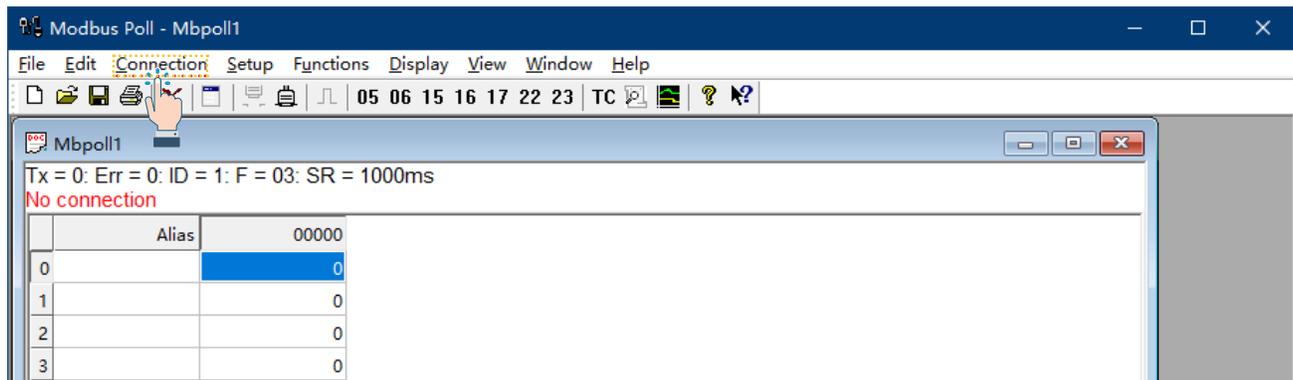
REST API

Refer to 'CR04_REST_API_Specification.docx' for complete REST API specifications.

Testing with Modbus Poll

Modbus Poll is a commercial testing tool. Alternative Modbus testing tools may be substituted.

1. Launch '**Modbus Poll**'.
2. Select '**Connection**' from the menu.



* *Modbus Poll* is commercial Modbus test tool. You may use other Modbus test tool to test it as well.

Connection Setup

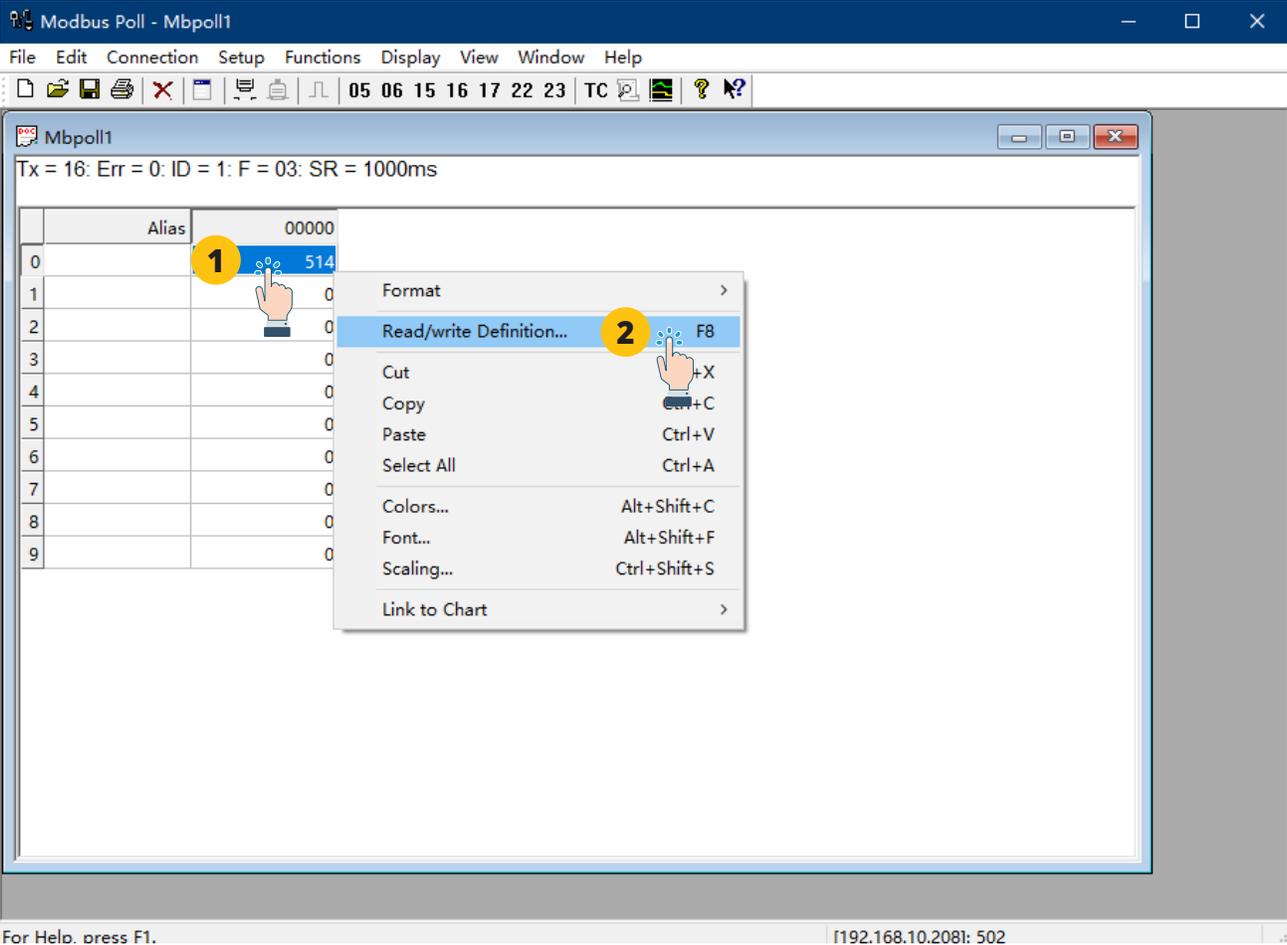
1. Select '**Modbus TCP/IP**' from the dropdown menu
2. Enter the CR04 dongle IP address
3. Retain default parameter values

The screenshot shows the 'Connection Setup' dialog box with the following configuration:

- Connection:** Modbus TCP/IP (indicated by a yellow circle with the number 1 and a hand cursor pointing to the dropdown arrow).
- Serial Settings:**
 - COM1
 - 9600 Baud
 - 8 Data bits
 - Even Parity
 - 1 Stop Bit
 - Advanced...
- Remote Modbus Server:**
 - IP Address or Node Name: 192.168.10.204 (indicated by a yellow circle with the number 2 and a hand cursor pointing to the dropdown arrow).
 - Server Port: 502
 - Connect Timeout: 3000 [ms]
 - Mode: RTU, ASCII
 - Response Timeout: 1000 [ms]
 - Delay Between Polls: 20 [ms]
 - Protocol: IPv4, IPv6
- Buttons:** OK, Cancel

Read/Write Definition

- 1. Right-click on the first item
- 2. Select **'Read/Write Definition'**



Register Configuration

1. Select '**03 Read Holding Registers (4x)**' from the dropdown menu
2. Retain default parameters and select '**OK**'

Read/Write Definition

Slave ID:

Function: **03 Read Holding Registers (4x)**

Address: PLC address = 40001

Quantity:

Scan Rate: [ms]

Read/Write Disabled

Disable on error

Read/Write Once

View

Rows

10 20 50 100 Fit to Quantity

Hide Alias Columns PLC Addresses (Base 1)

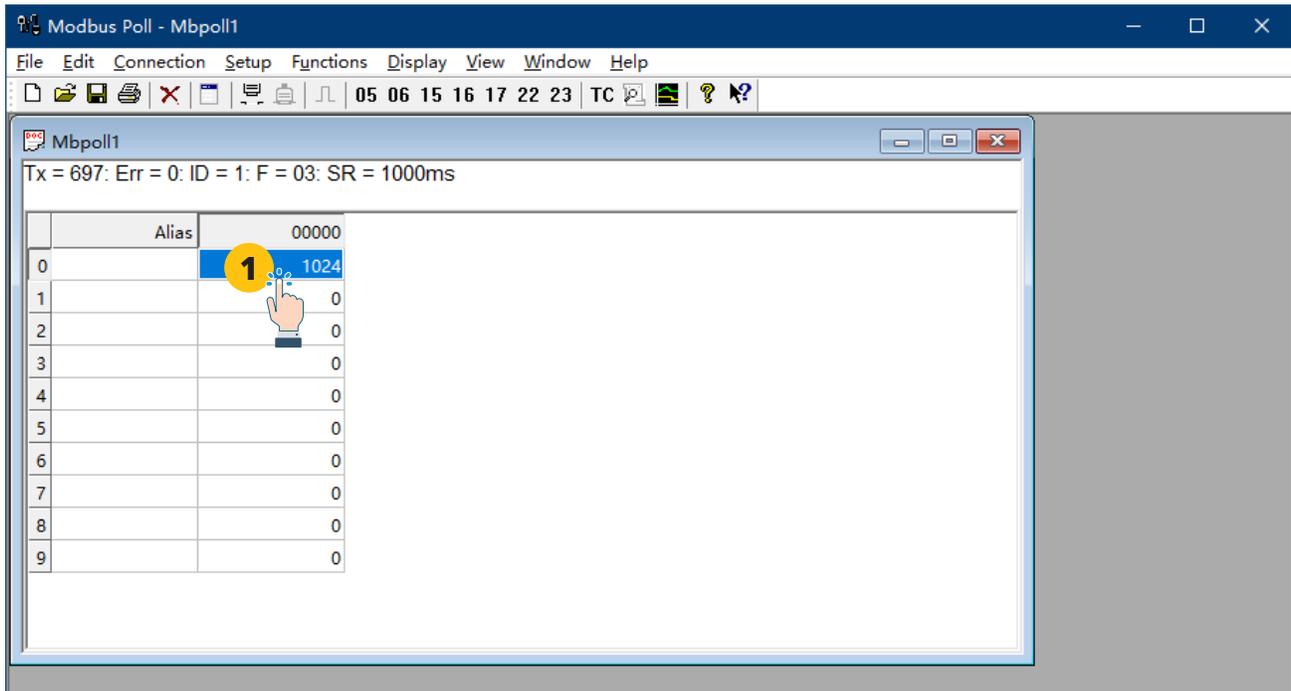
Address in Cell Enron/Daniel Mode

Request

RTU

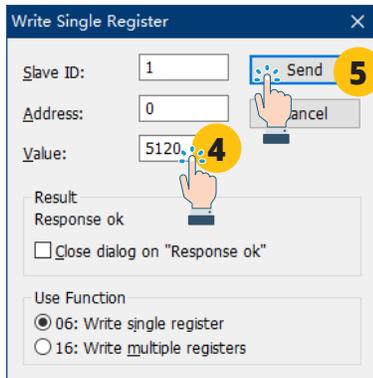
ASCII

Testing Commands



1. Double-click the first item
2. Enter the value '1024'
3. Select 'Send'

This command turns ON all lights in the zone.



4. Enter the value '5120'
5. Select 'Send'

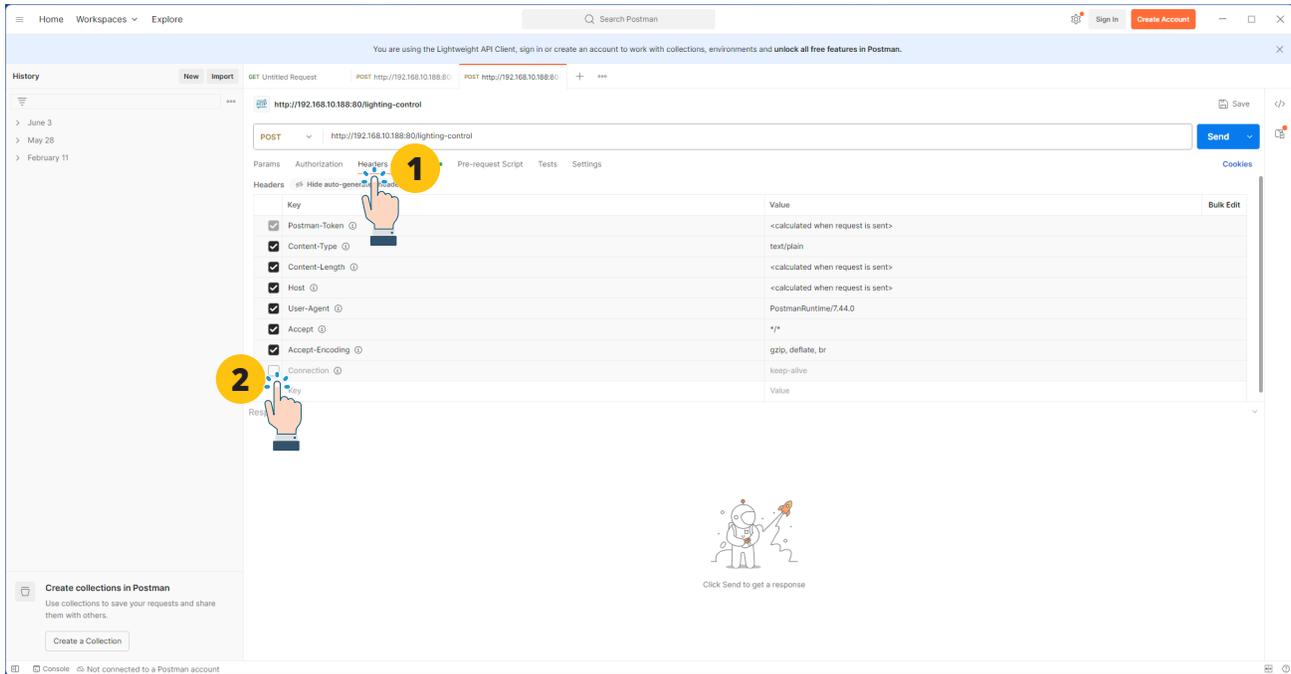
This command turns OFF all lights in the zone.

Establish Connection

Prerequisites: Postman installed and CR04 dongle IP address configured.

Launch *Postman*.

1. Select '**Headers**'
2. Clear the '**Connection**' checkbox

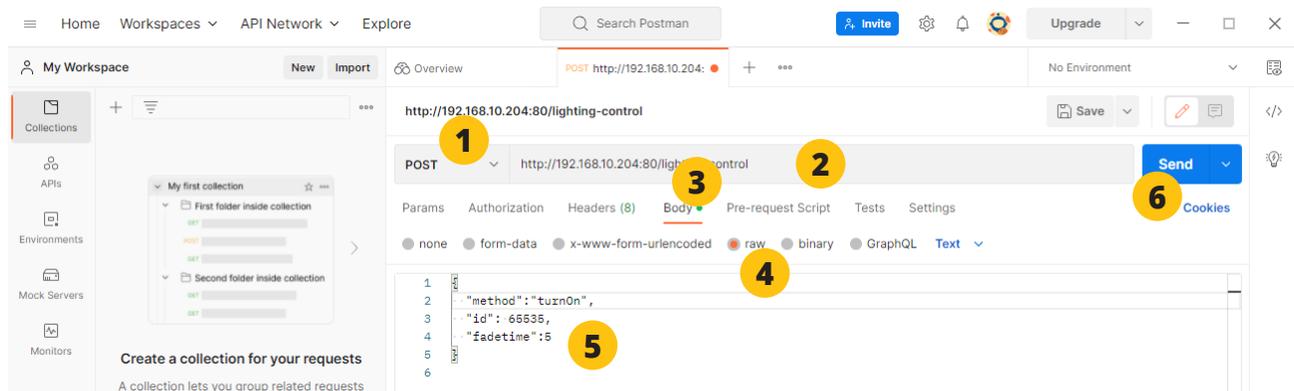


Turning Lights ON

Example: Turn All Lights ON

Launch **'Postman'**.

1. Select **'POST'** method
2. Enter the **'REST API'** endpoint URL
3. Select the **'Body'** tab
4. Select **'raw'** as the content type
5. Enter the **'JSON'** payload to turn ON all lights in the zone
6. Select **'Send'** to transmit the command to the CR04 dongle

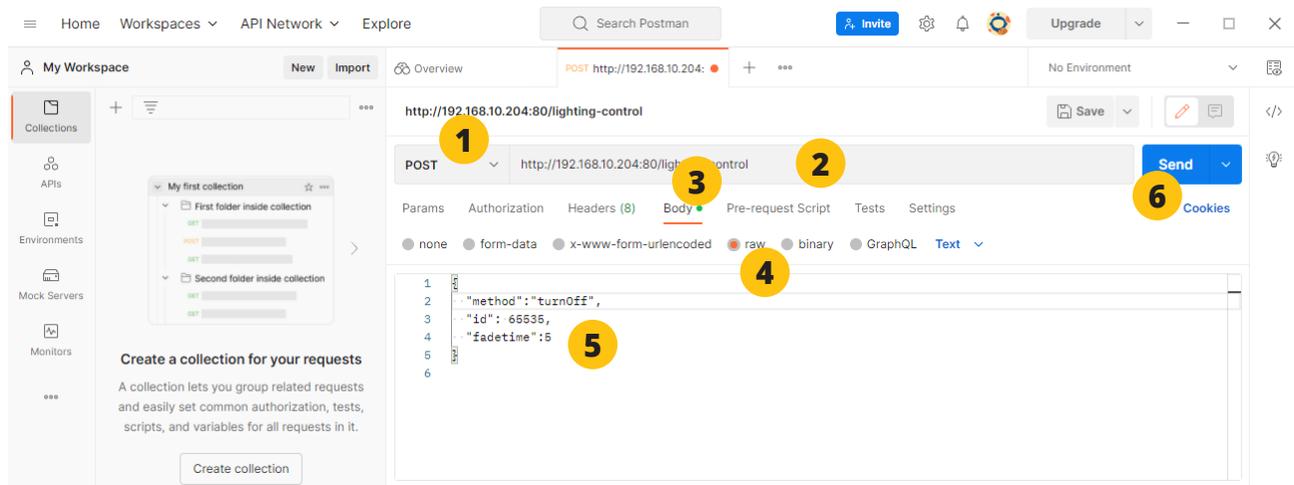


Turning Lights OFF

Example: Turning All Lights OFF

Launch **'Postman'**.

1. Select **'POST'** method
2. Enter the **'REST API'** endpoint URL
3. Select the **'Body'** tab
4. Select **'raw'** as the content type
5. Enter the **'JSON'** payload to turn OFF all lights in the zone
6. Select **'Send'** to transmit the command to the CR04 dongle



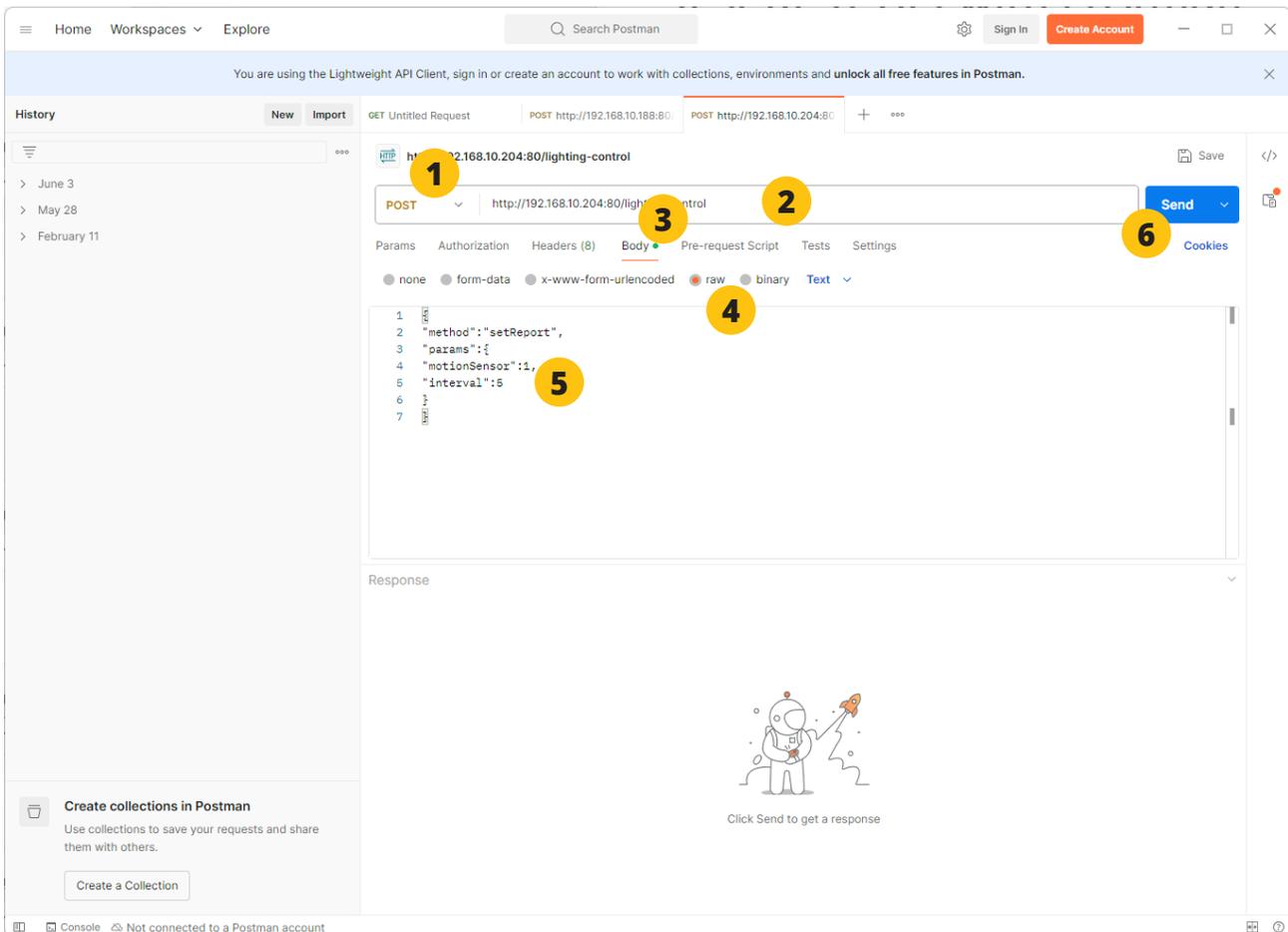
Enable PIR Status

Enable PIR Status Reporting

Enable PIR (Passive Infrared) status reporting before querying zone status. Without this configuration, PIR status values default to 255.

Launch **'Postman'**.

1. Select **'POST'** method.
2. Enter the **'REST API'** endpoint URL
3. Select the **'Body'** tab
4. Select **'raw'** as the content type
5. Enter the **'JSON'** payload to enable PIR status reporting
6. Select **'Send'** to transmit the command to the CR04 dongle

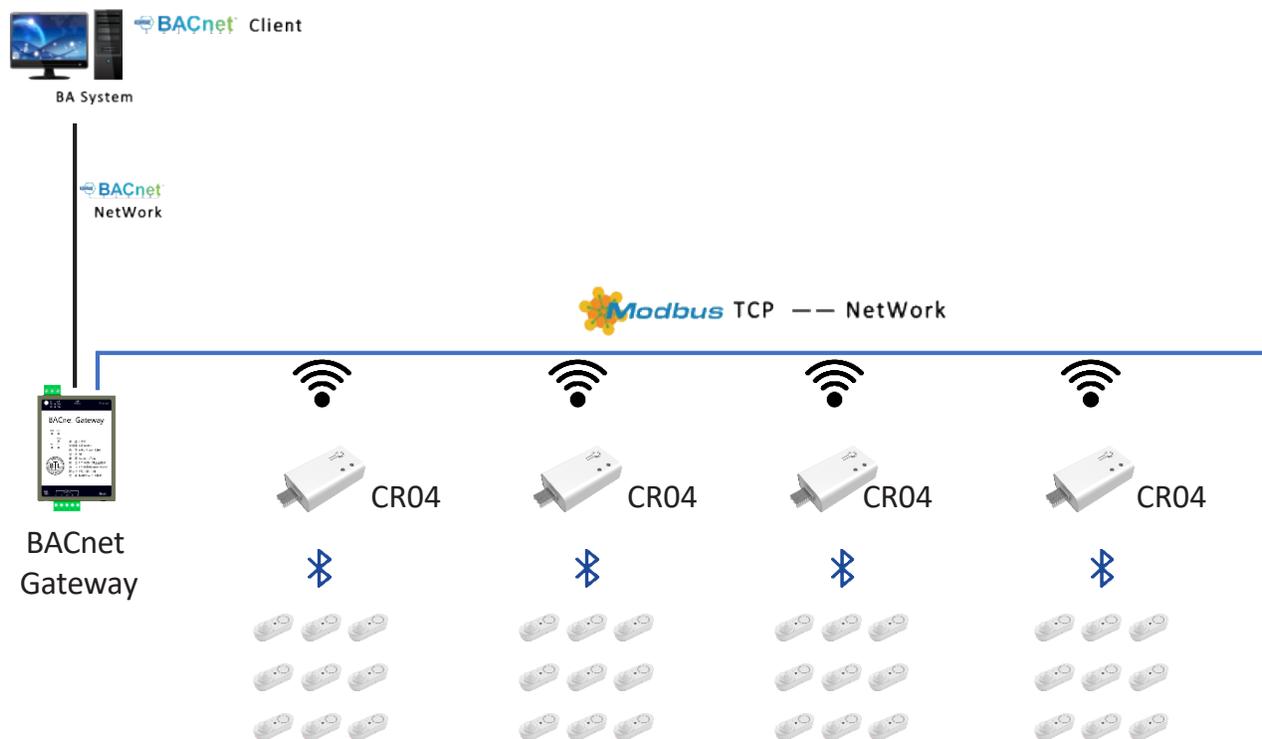


Appendix A: BACnet Integration

Connect Keilton+autani Products to BACnet

BACnet is widely adopted for building automation system (BAS) integration. Connect Keilton+autani products to a BACnet building automation system through the following approach:

- Deploy a BACnet gateway to translate between BACnet protocol and CR04 Modbus TCP API
- Configure the BACnet-to-Modbus register mapping on the gateway
- The BACnet client transmits commands to the gateway, which translates and relays them to the CR04 dongle
- A single BACnet gateway can connect to multiple CR04 dongles, depending on gateway capacity



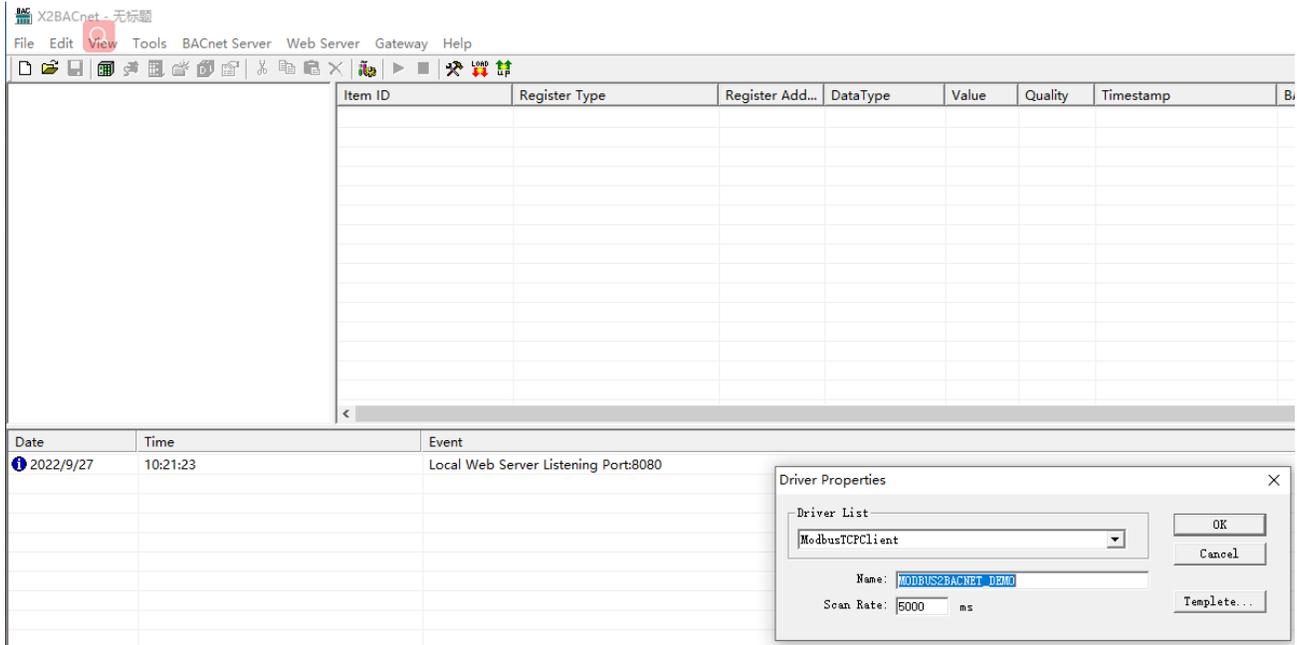
The SUNFULL BACnet gateway shown is for demonstration purposes. Alternative BACnet gateways supporting Modbus TCP or REST API may be substituted.

Prerequisites: Install CR04 dongles in each zone and configure the SUNFULL gateway per manufacturer documentation before proceeding.

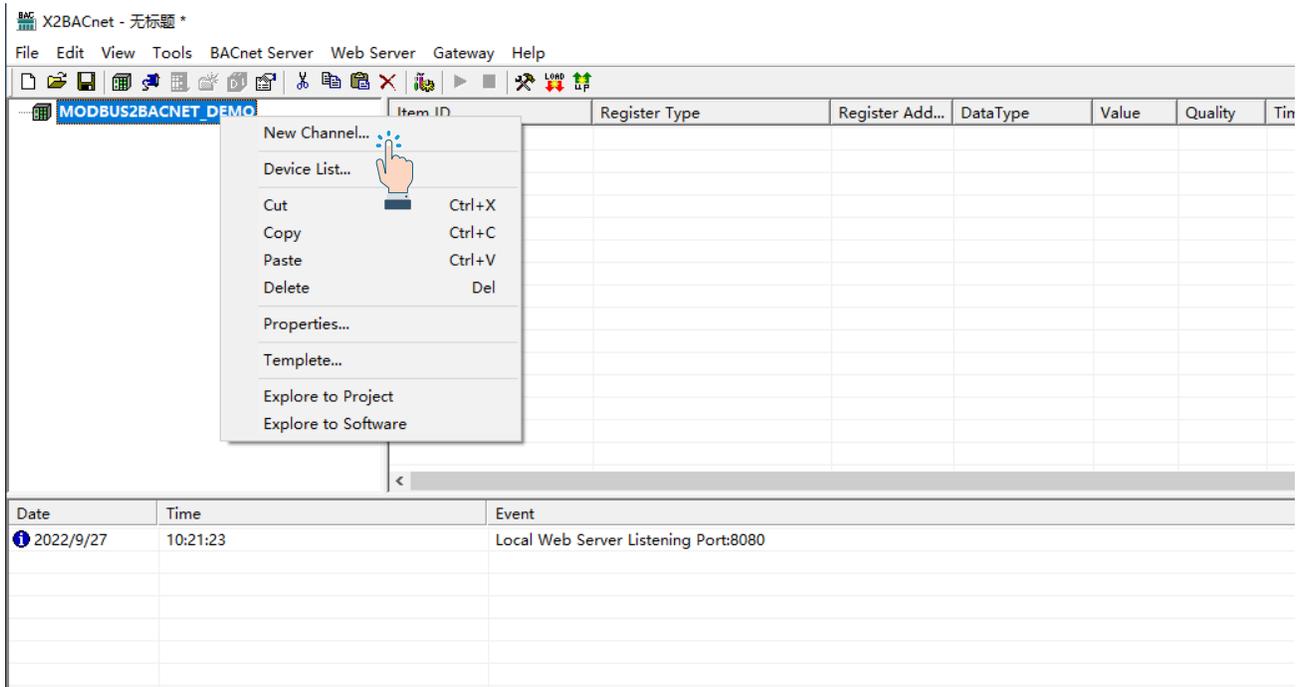
X2BACnet Setup

Launch X2BACnet software. X2BACnet is the SUNFULL configuration application.

Add a Modbus TCP driver:



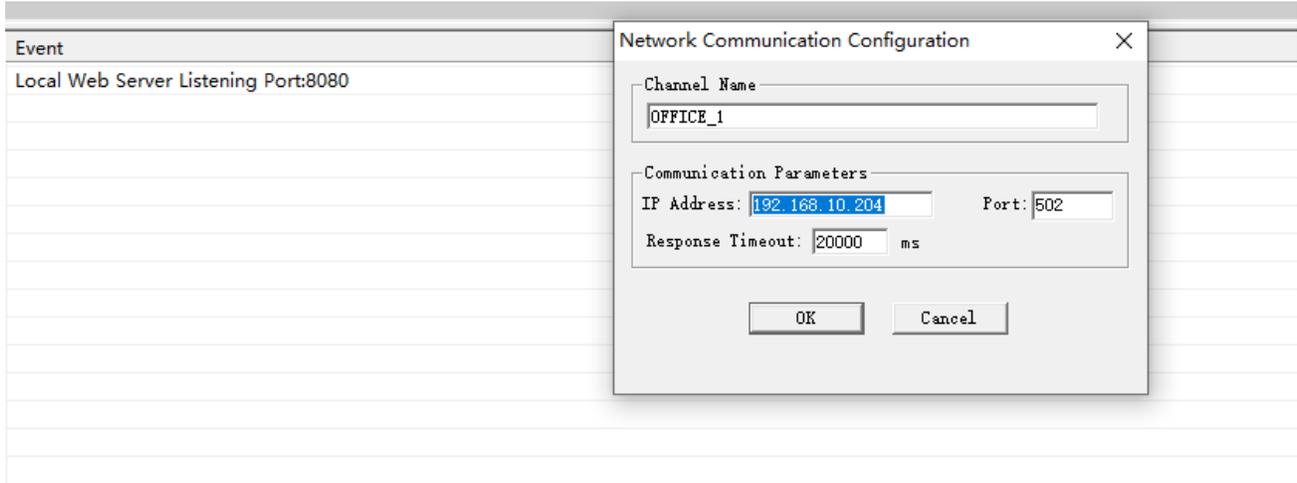
Select 'New Channel'.



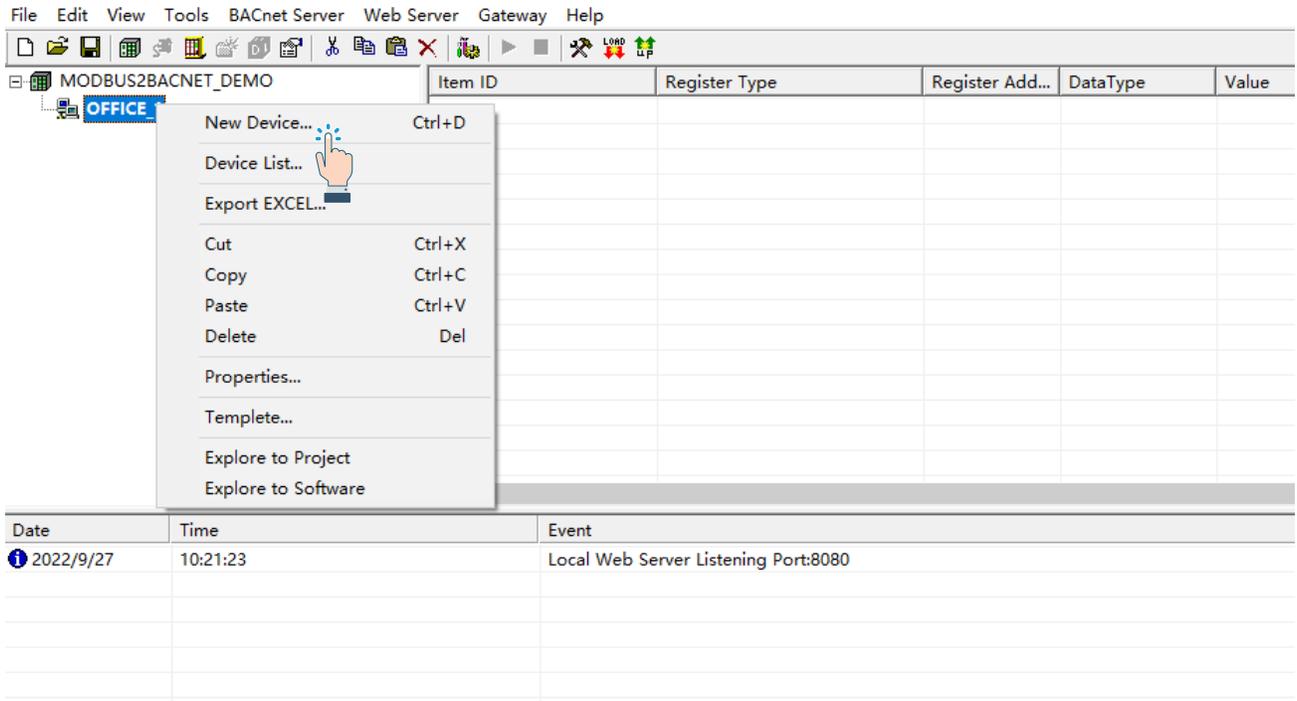
Channel Configuration

Enter the channel name and IP address.
Retain the default port value (502).

Create a separate channel for each CR04 dongle in the system.

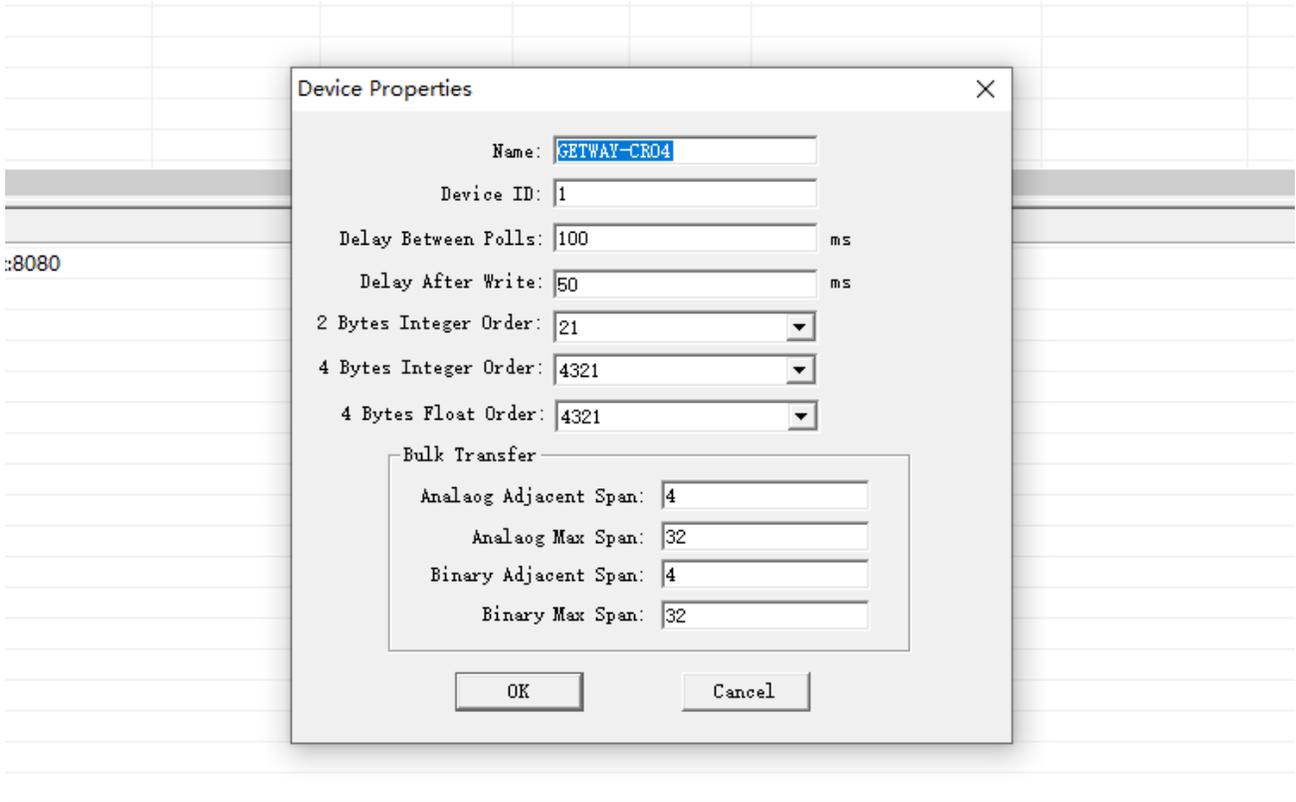


Select 'New Device'.

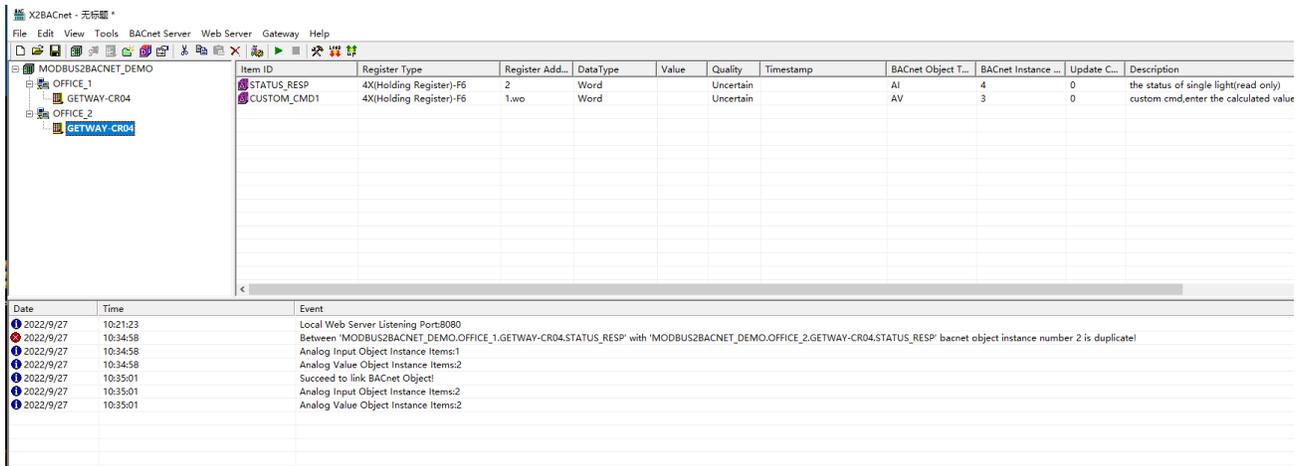


Register Mapping

Retain default device properties.

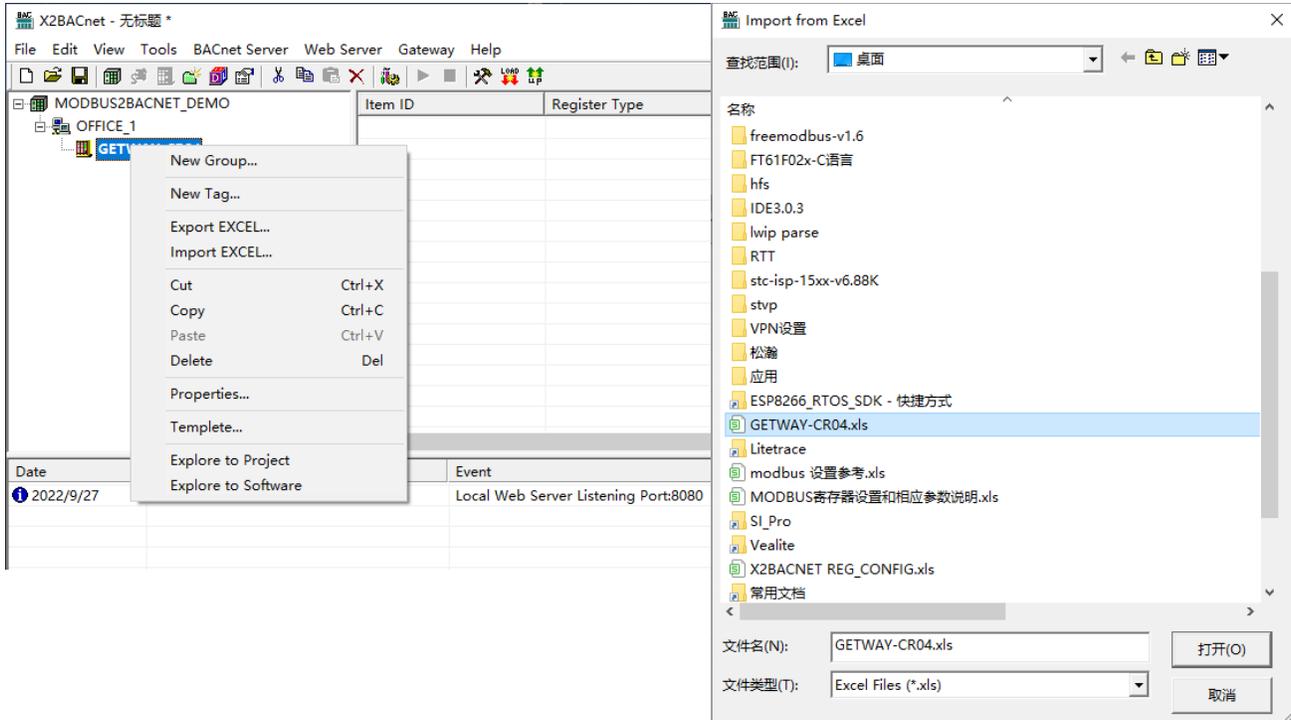


Configure the BACnet-to-Modbus register mapping as shown.

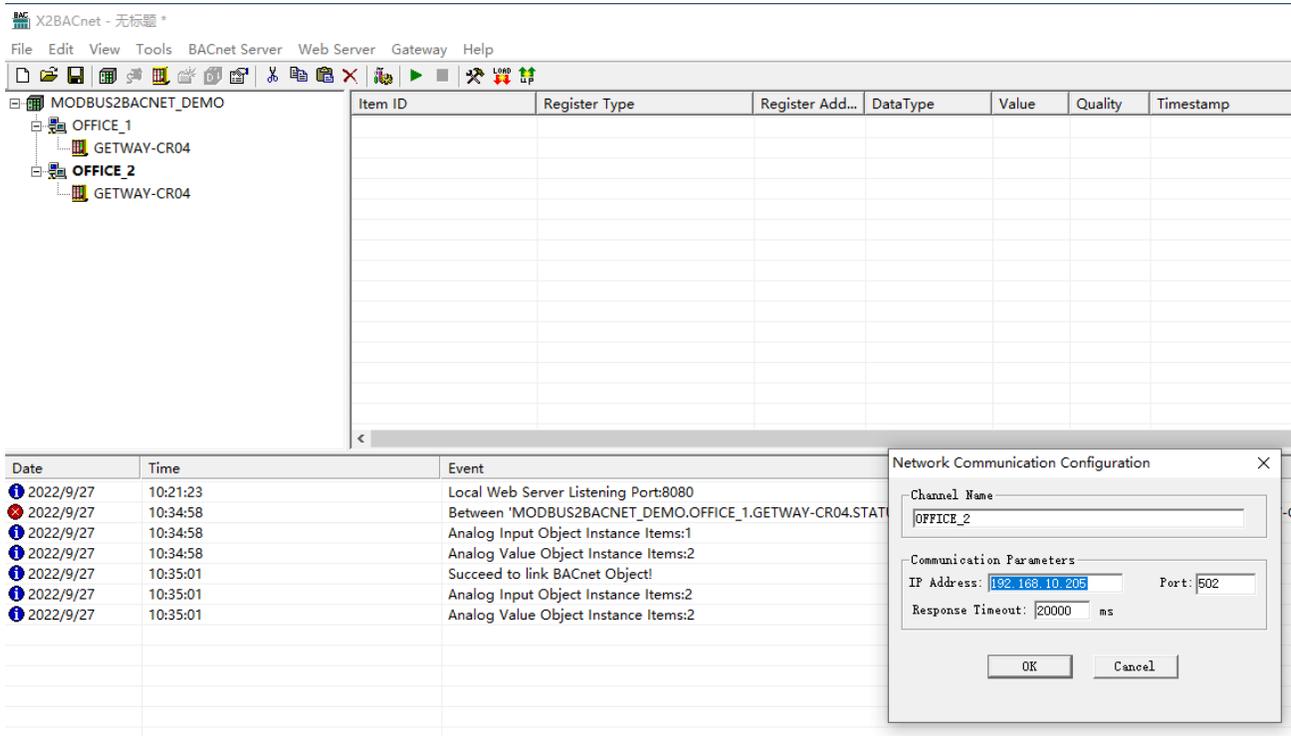


Multiple Channels

Optional: Export the register map to Excel, modify for additional CR04 dongles, then import the updated configuration.



Repeat the process to add channels for additional CR04 dongles. Configure the BACnet system operations to enable communication with Keilton+autani devices.

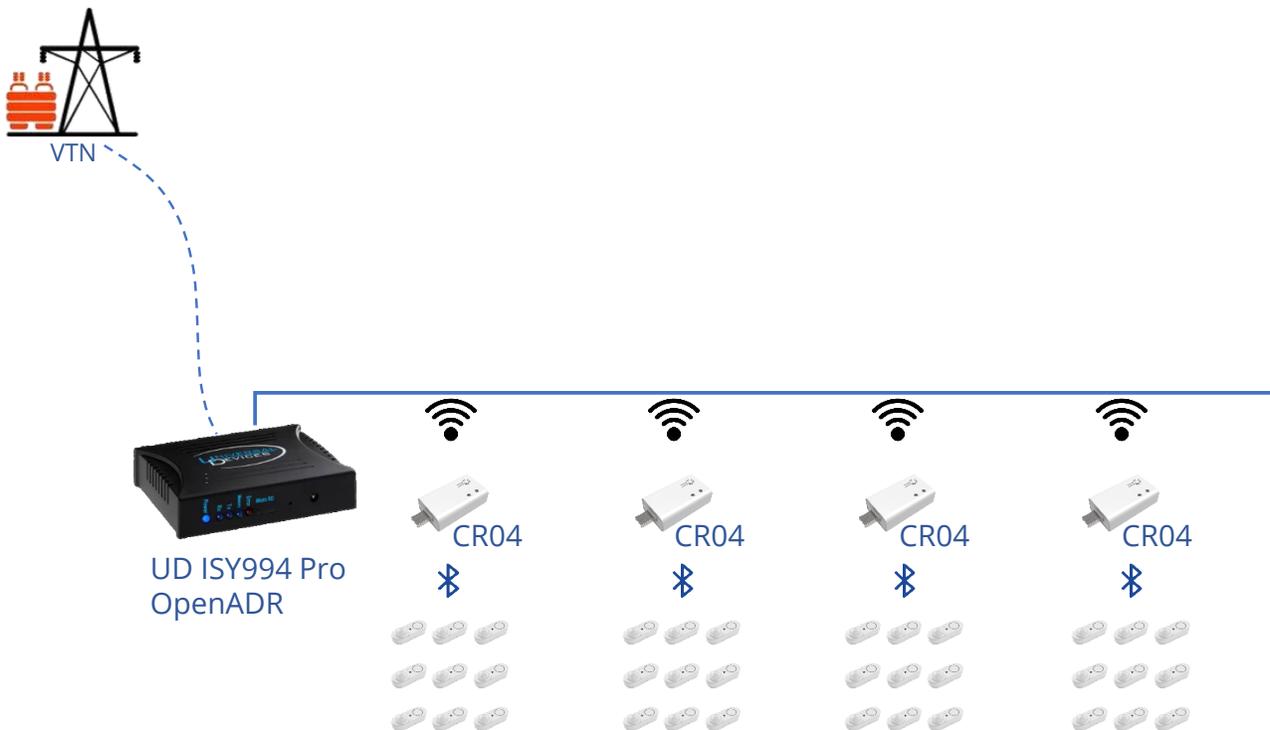


Appendix B: OpenADR Integration

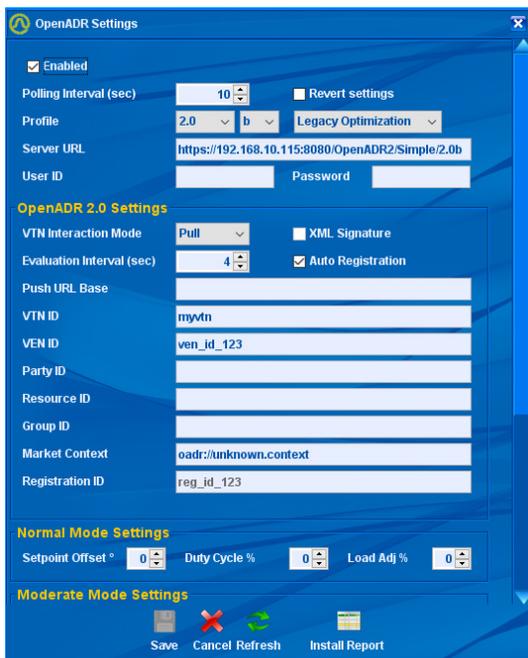
OpenADR Gateway Configuration

The KLT994-OADR is an OpenADR-enabled gateway device. The CR04 REST API integrates with the KLT994-OADR gateway to enable Demand Response (DR) functionality for Keilton+autani systems.

- Deploy the KLT994-OADR as a gateway to the Virtual Top Node (VTN)
- Register the KLT994-OADR with the VTN and configure per utility requirements
- Configure CR04 REST endpoints in the KLT994-OADR and map OpenADR commands to CR04 REST API calls
- *The KLT994-OADR triggers CR04 REST API calls when receiving commands from the VTN*
- A single KLT994-OADR gateway can manage multiple CR04 dongles



VTN Configuration

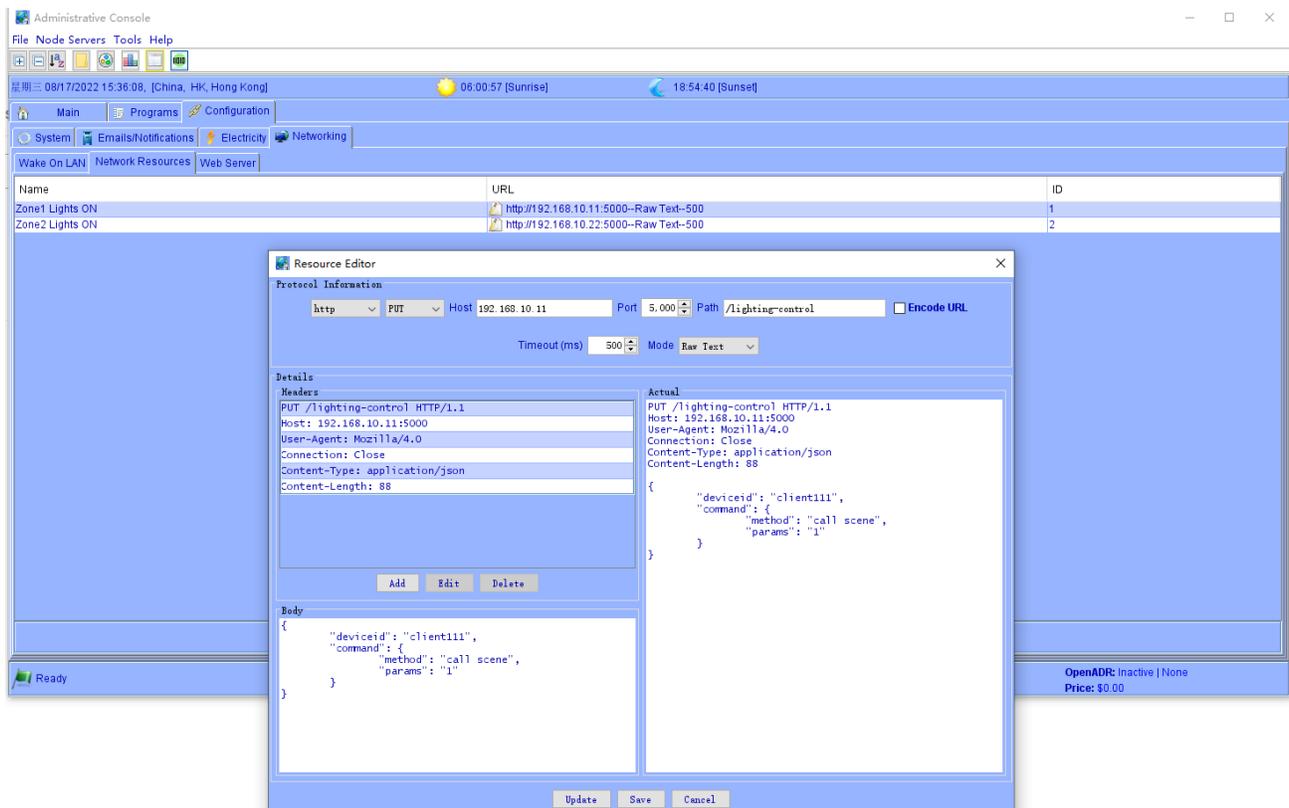


Configure VTN Settings in KLT994-OADR

Obtain VTN configuration parameters from your local utility provider. Refer to the KLT994-OADR manual for complete setup instructions.

Register CR04 REST API Resources

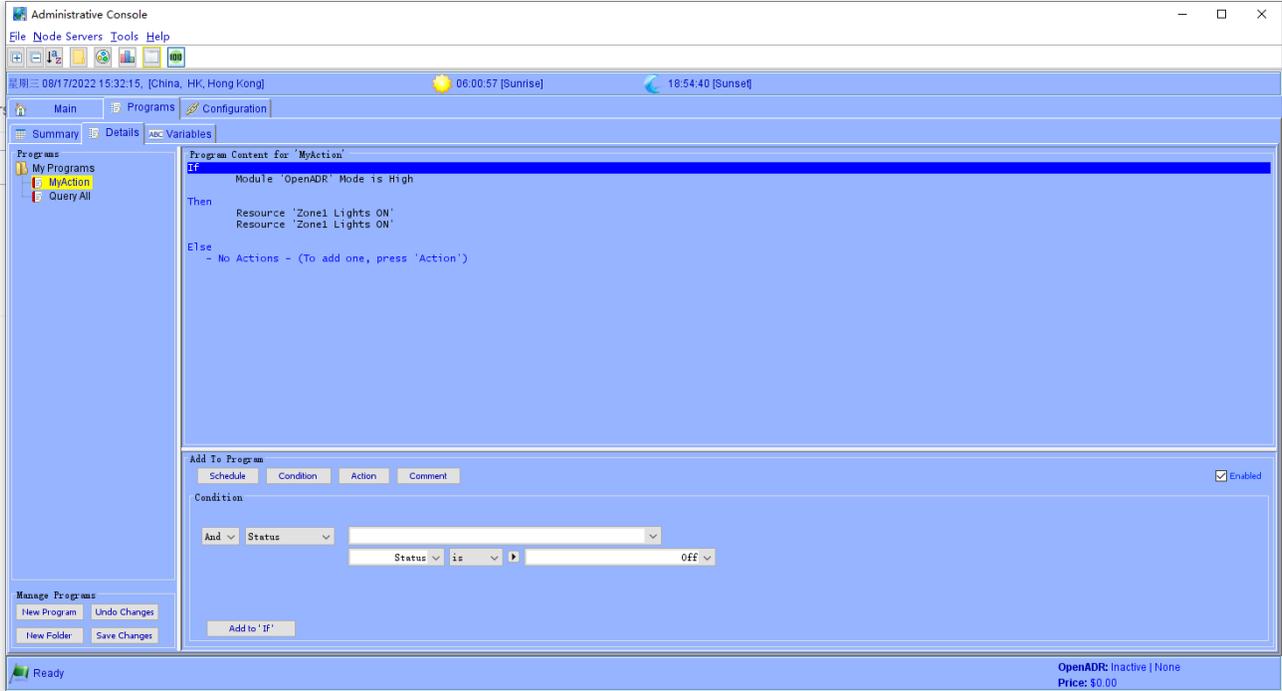
Register each CR04 dongle as a network resource in the KLT994-OADR administrative console.



Command Association

Associate OpenADR Commands with CR04 Resources

Map OpenADR commands to CR04 REST API resources. A single OpenADR command can trigger actions across multiple CR04 dongles, enabling coordinated demand response across zones.



Status Monitoring

Monitor OpenADR Command Execution

Figure A-1: OpenADR Event Execution Status Dashboard.

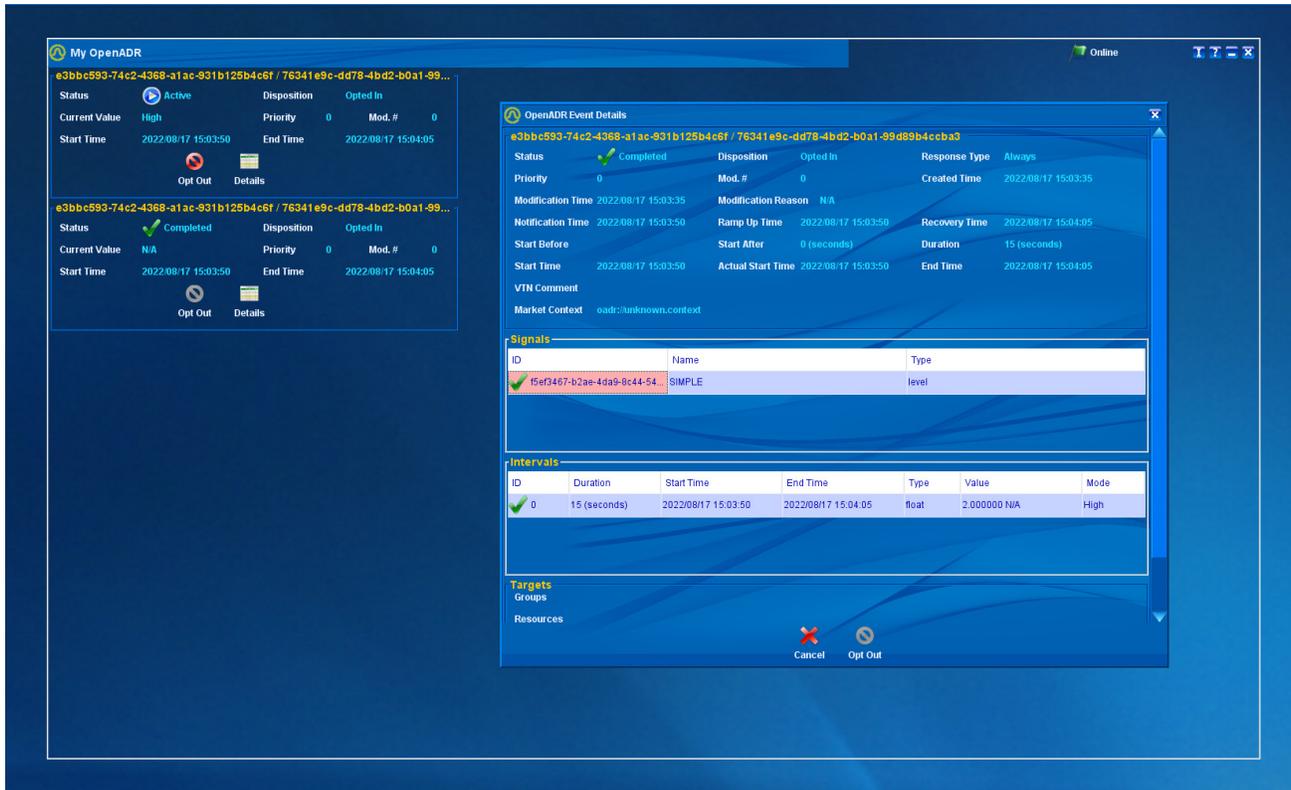


Figure A-1



Need Help?

Technical Support For installation, configuration, and troubleshooting assistance

Support Center: <https://autani.zendesk.com/hc/en-us> | Email: support@autani.com

Phone: +1 (443) 320-2233 | Hours: Monday-Friday, 9 AM - 5 PM EST

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Phone: +1 (443) 320-2233

Online Resources

Website: <https://www.litetrace.com>

Resources: <https://www.litetrace.com/resource>

Company Information

LiteTrace Brands

7001 Columbia Gateway Dr, #210 Columbia,
MD 21046, United States

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