

GOODWE SCADA SOLUTION (PLC)

VER: 01, UPDATED ON JANUARY 10TH, 2020

Application Background

Interoperation of various control systems in powerhouse and substation automation systems from SCADA was a challenge in past decades, but with the development of IEC 60870 - 5 - 103/104 and IEC 61850, interoperation of various automation systems is possible. IEC 60870 standard is widely applied for telecontrol in electrical power system. This article is focused on how to ensure the interoperability between GoodWe inverters and a SCADA System for solar power plant automation in compliance with the various IEC standards and interfacing protocols.

GoodWe Solution

Based on PLC communication of MT series, smart communication box SCB2000 is used to support SCADA system as shown in below diagram.

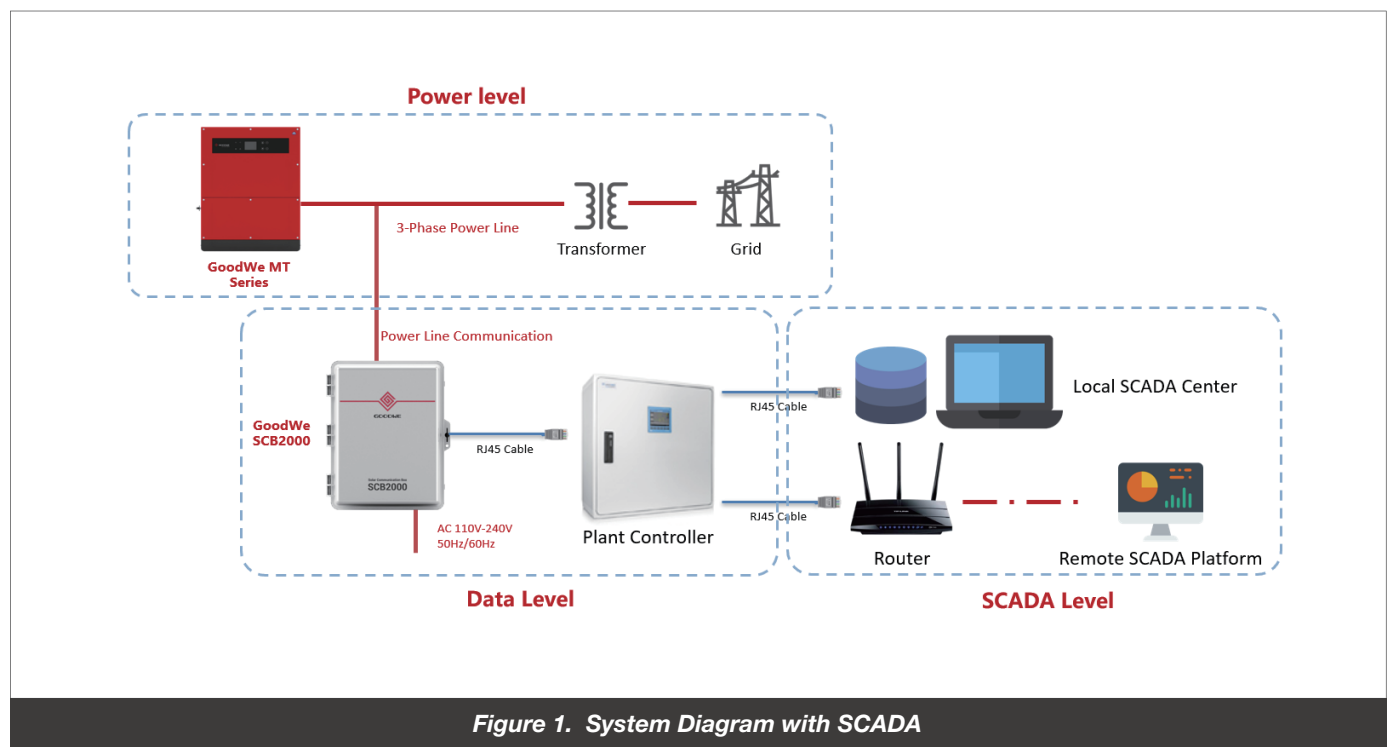


Figure 1. System Diagram with SCADA

Note

Please refer to technical document **GoodWe PLC Communication Solution** at GoodWe Solar Academy website at <https://en.goodwe.com/solar-academy.asp> for the overall wiring.

With all installation and wiring steps complete, then you need to use GoodWe software ProMate to do configuration for SCB2000 by following the steps as below.

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Discover the inverters connected in the system

- 1) Connect the laptop's LAN port to SCB2000's LAN port;
- 2) Revise the IP address of laptop to "192.168.1.XXX" ($1 \leq XXX \leq 254$ and $XXX \neq 200$);
- 3) Run ProMate

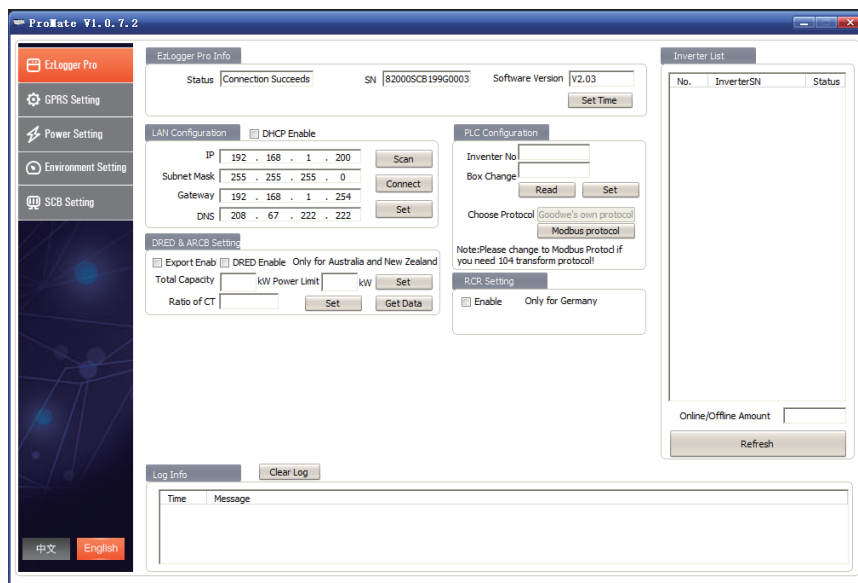


Figure 2. ProMate Home Page

- 4) At EzLogger Pro setting page, enter the transformer No. (connected with this SCB2000) in the blank of **Box Change** and in **Inverter No** enter the amount of inverters that are connected to this transformer. Then click **Set**. It would say "Set PLC parameters Successfully!" when parameters are set correctly.

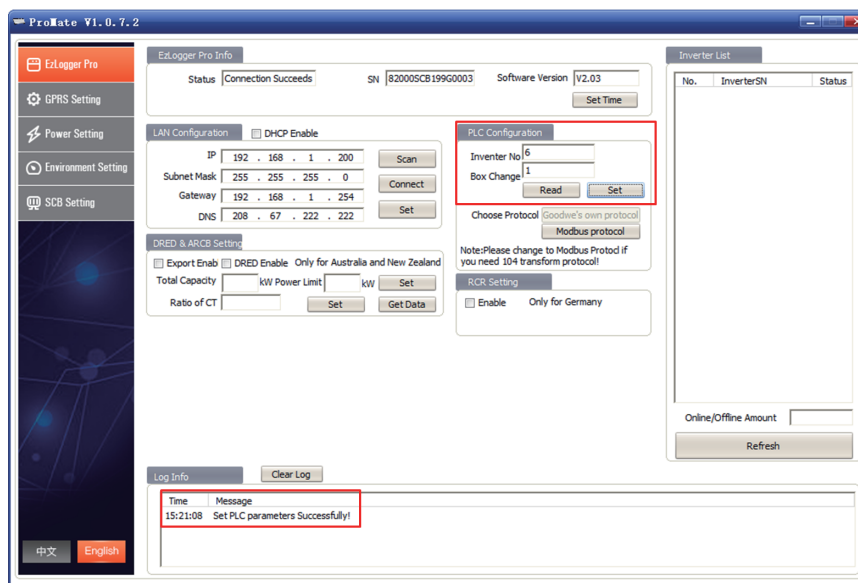


Figure 3. ProMate Home Page – PLC Configuration

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5) Click **Read**. The SN and status of inverters connected to the transformer are presented at **Inverter List**. Moreover, the amount of online/offline inverters is displayed at the bottom.

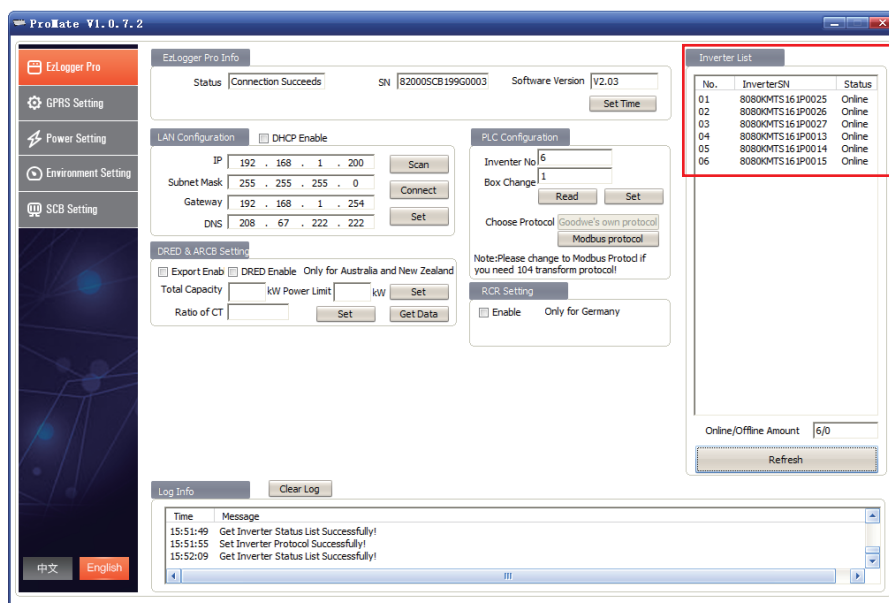


Figure 4. ProMate Home Page – Inverter List

● Set Modbus address for inverter

1) At SCB Setting page, click **Get** to read information of inverters including SN, Box (transformer) No, address and ARM version (of PLC). Crosscheck the information. Then click **One key config** to assign Modbus addresses to all inverters.

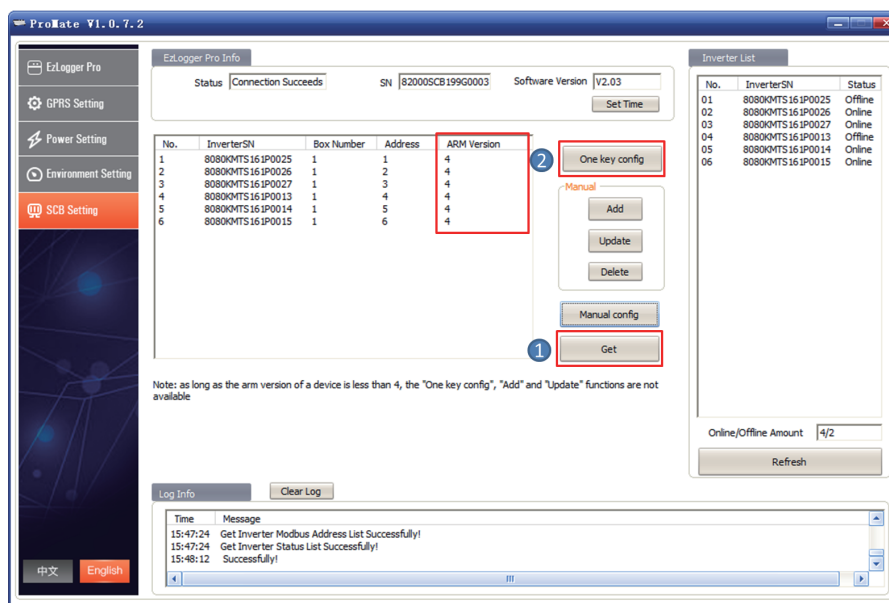


Figure 5. ProMate Home Page – Set Modbus Address

Note

One key config function is available only for inverter with PLC ARM version 4.

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2) To set Modbus address of inverter one by one, select one inverter in the list and then click **Update**. In the pop-up window modify Modbus address and click **OK**. To confirm this step, click **Manual config**.

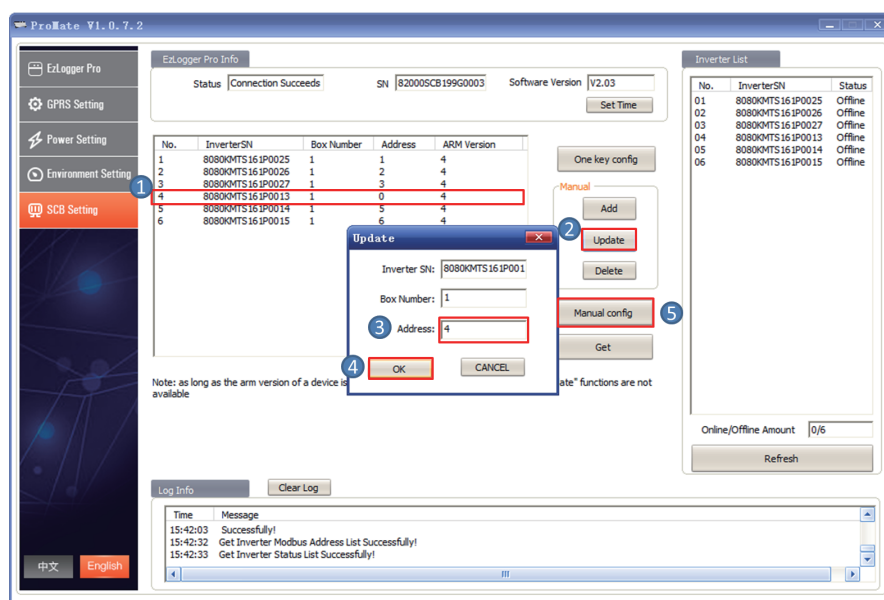


Figure 6. ProMate Home Page –Set Modbus Address

● Switch the protocol of SCB2000

1) Return to EzLogger Pro setting page. Click **Modbus protocol** at PLC Configuration section to change the communication protocol between inverters and SCB2000 into Modbus RTU protocol and then click OK in the pop-up window to confirm.

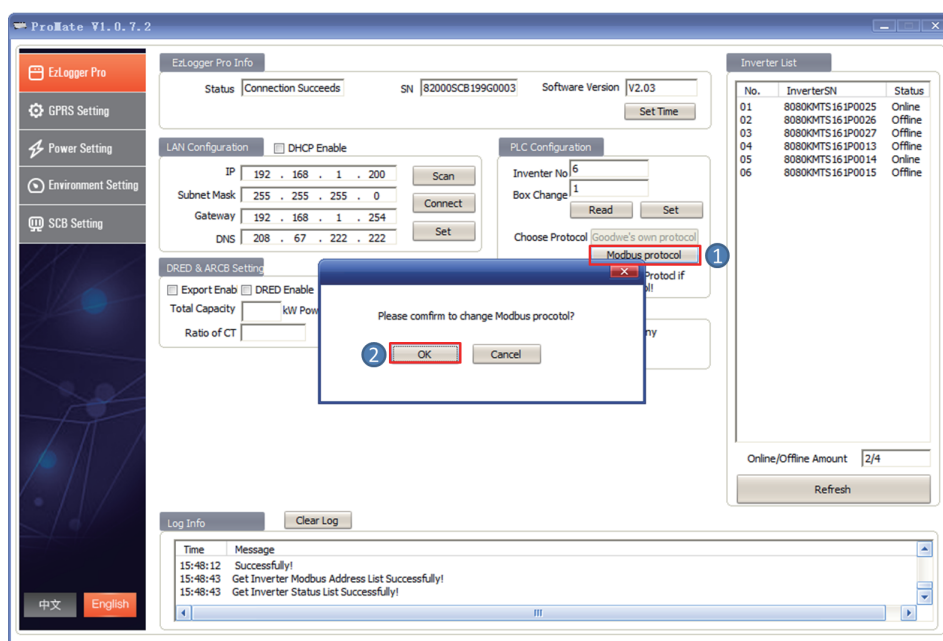
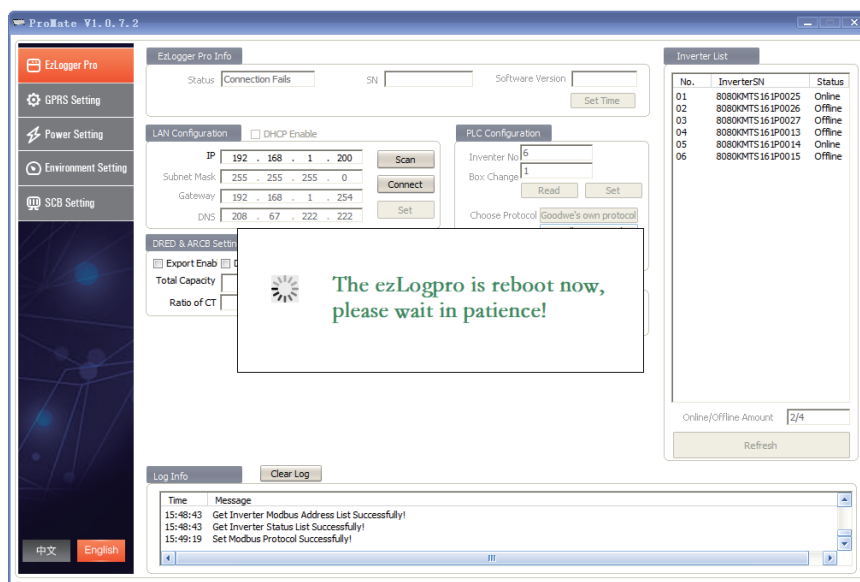


Figure 7. ProMate Home Page – Change Modbus Protocol

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2) Wait for a few minutes as SCB2000 will reboot, and then it is ready to connect to SCADA system.



Note

After switching to Modbus protocol, **SCB Setting** will be unavailable and the protocol of SCB2000 can be switched back to GoodWe A55 protocol after 10 minutes.

Notice

The information in this document is subject to change without notice, all information in this document do not constitute any kind of warranty. Please check with GoodWe Solar Academy 'academy@goodwe.com' for the latest version.

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