

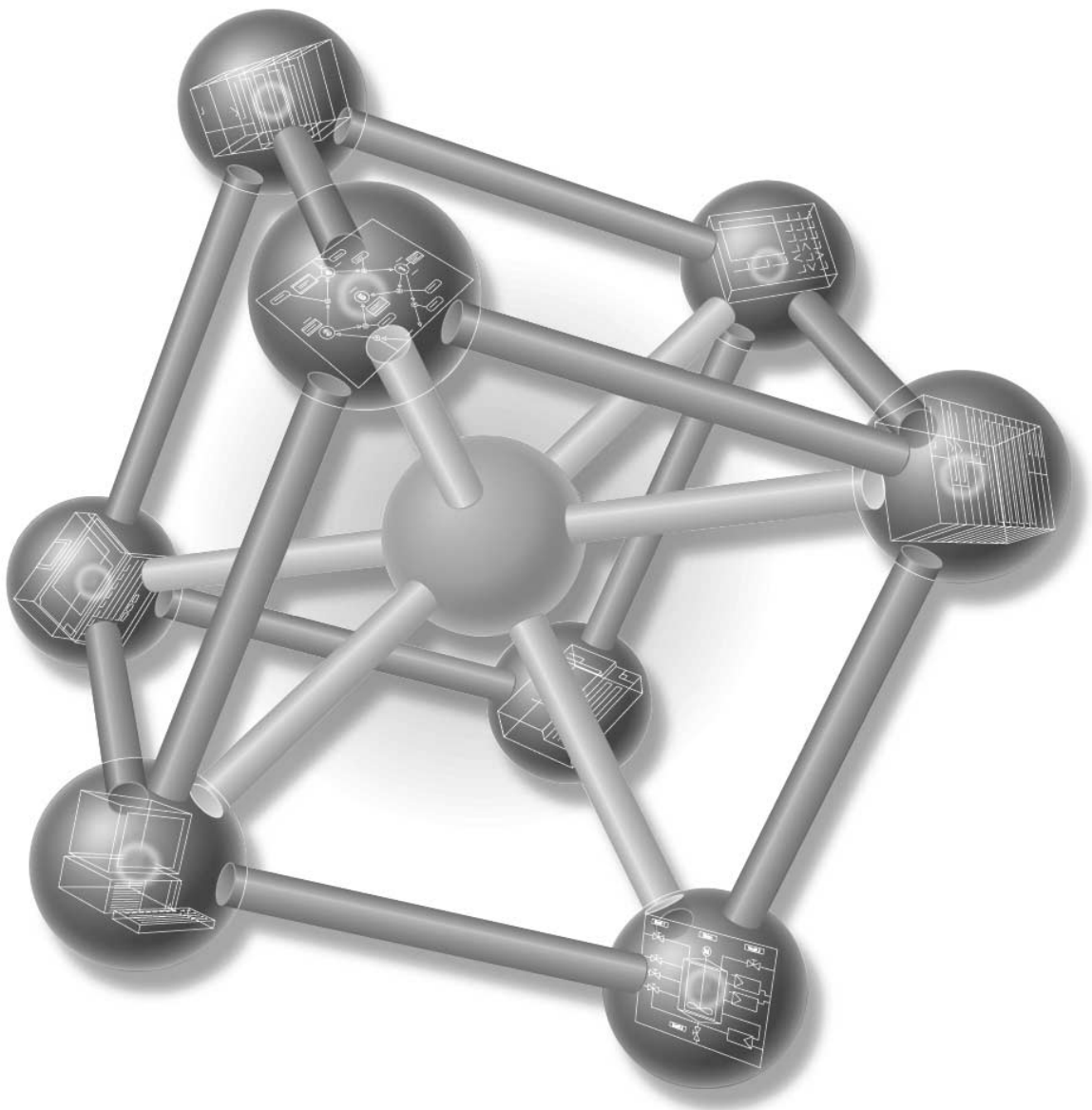
# SIEMENS

## SIMATIC

### CP 341

#### Getting Started Guide

## First Steps



This Guide uses a real-life example to take you through the four steps for setting up a fully functional application that will enable you to transfer data via the serial interface and to familiarize yourself with and test the basic hardware and software features of your CP 341. The cross-references tell you where to find more detailed information on specific topics in the operating manual.

It will take you between one and two hours to work your way through the example, depending on your prior experience.

## Preconditions

These are the preconditions for this example:

- You have an S7-300 station, consisting of power supply module and CPU.
- STEP 7 ( $\geq V5.0$ ) is correctly installed on your programming device.
- You have configured a project for the S7-300 station.
- The programming device is connected to the CPU.
- You have a CP 341 module complete with the appropriate configuration package and connecting cable.
- You have prepared your connection partner for serial data transfer. If you are using a CP 341 with RS232/V.24 interface, your programming device running the "Hyper Terminal" program can function as the connection partner. You will find "Hyper Terminal" in Windows under [Start→Programs → Accessories → Hyper Terminal](#). The procedure for starting the program is described below.

## Installing the Configuration Package on your Programming Device

The configuration package consists of a parameterization tool for the CP 341, a library containing function blocks, and a demo program.

Start the installation program on the CD by double-clicking the file called SETUP.EXE.

Follow the instructions issued by the installation program.

## Installing the CP 341, Connecting to the Communication Partner

Plug the bus connection supplied with the CP 341 into the CPU's bus port. Hook the CP 341 over the rail, lower the bottom edge into position and install the securing screws.

Connect your power supply's L+ and M terminals to the corresponding terminals on the CP.

Use the connecting cable to interconnect the CP 341 and your connection partner. The pin assignment of the interface adapter is detailed in Appendix B of the operating manual.

**Test:** *Apply line voltage to the power supply module.*

*When the initialization phase completes, the SF LED on the CP 341 is on.*

## Parameterizing the CP 341

Open your project in SIMATIC Manager.

In your project, call up the HW Config configuration table.

In the hardware catalog, select the CP 341 with the correct order number and drag it to the appropriate slot.

Double-click the CP 341 to open the "Properties CP 341" form.

Note the module address under "Address" (in the demo this address is 256 → 100 hex). You will need this value when you set up the link to your user program.

Click the [Parameters](#) button and select the "ASCII" protocol. Double-click the [Envelope](#).

Click the [OK](#) button to accept the parameterization defaults: 9600 bit/s, 8 data bits, 1 stop bit, even parity.

Select [File → Save](#) to save your parameterization settings and exit the form with [File → Exit](#). In the "Properties CP 341" form, click the [OK](#) button.

Save the configuration in your project by selecting [Station → Save and Compile](#).

Transfer the configuration with the CPU in STOP by selecting [PLC → Load to module](#).

The data are transferred directly to the CPU and the CP 341. The SF LED goes out to indicate that loading was successful.

Select [Station → Exit](#) to close HW Config.

## Linking to the User Program

The demo project "CP340\_41" was installed in the \Siemens\STEP7\Examples catalog when you installed the configuration package.

In SIMATIC Manager, open this project by selecting [File](#) → [Open...](#) → [Projects](#) and double-click the sub-project called "CP341Protocol 3964" (suitable for ASCII protocols, despite the name).

Open the S7 program of the CPU in this project. Double-click the "Blocks" container.

Copy all the blocks except the system data from this container to your project under [SIMATIC 300 Station](#) → [CPU3xx](#) → [S7 Program](#) → [Blocks](#).

- FC21                      FC with SEND
- FC22                      FC with RECEIVE
- DB21, DB22              Instance DBs for the standard FBs
- DB40, DB41              Work DBs for the standard FBs
- DB42                      The source DB for send
- DB43                      The destination DB for received data
- OB1                        Cyclic OB
- OB100                     Restart (warm start) OB
- VAT1                      Variables table
- FB7, FB8                 Standard FBs for RECEIVE, SEND
- SFC 58, 59                SFCs for the standard FBs

In your project, double-click FC22 to open it and in the first line of Network 1, change the module address "LADDR" from "272" to "256".

Save the blocks by selecting [File](#) → [Save](#).

No other changes have to be made to the FCs, so select [File](#) → [Exit](#).

In SIMATIC Manager, select [SIMATIC 300 Station](#) → [CPU3xx](#) → [S7 Program](#) → [Blocks](#).

Load all the S7 blocks to your CPU (CPU in STOP mode) with [PLC](#) → [Load](#).

Switch the CPU to RUN. The CP 341 starts to send data cyclically via the serial interface (the "TxD" LED flashes).

Data you send from your communication partner are received by the CP 341 in DB 43. The destination is entered in the "DB\_NO" and "DBB\_NO" parameters of FB7 (P\_RCV\_RK) in FC22.

**Test:** Double-click VAT1 in the “Blocks” directory in your project to observe data transfer:

Go online by selecting [PLC → Set up connection to → configured CPU](#).

Go to observe mode by selecting [Variable → Monitor](#).

The “DB42.DBW0” operand (send counter) indicates the number of transfers. The counterpart counter for incoming data is “DB41.DBW18” (receive counter).

If you use your programming device as connection partner, you can receive data and send data to the CP 341 using the “Hyper Terminal” program. Double-click the file called “Getting.ht” (in \Siemens\STEP7\s7ftp\Terminal\...) to start “Hyper Terminal” with the appropriate settings. The data sent by the CP 341 are displayed. Press a key on your keyboard to send the corresponding character to the CP 341.

## Diagnosis

Operator mistakes, incorrect wiring of the serial interface or parameterization conflicts can cause errors.

Possible errors and the diagnosis messages are described in Section 8 of the operating manual.