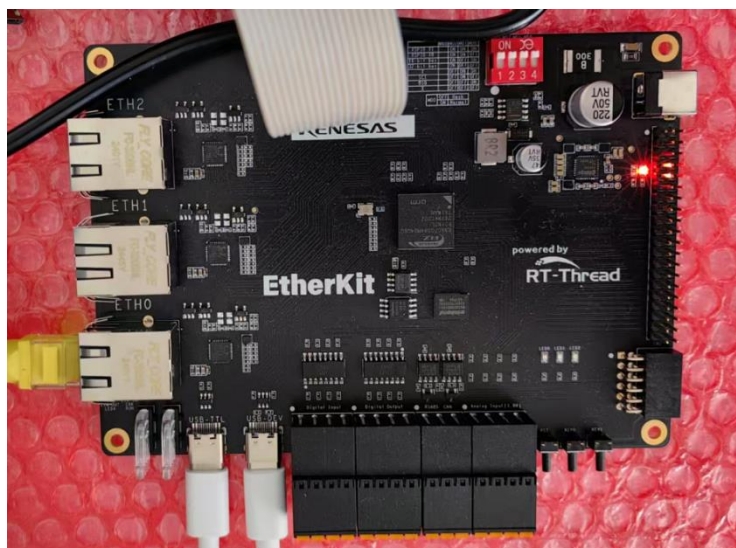


RZN2L usb_pcdc 例程操作手册-----基于 Etherkit 开发板

简介

本应用笔记介绍了基于 RZ/N2 Etherkit 开发板的 **usb_pcdc** 例程操作。分别介绍 IDE IAR 和 E2studio 软件下的操作，及从官方 SDK 移植过来需要修改的内容。

本例由官方例程 RZN2L_RSK_usb_pcdc_Rev200a 移植而来。



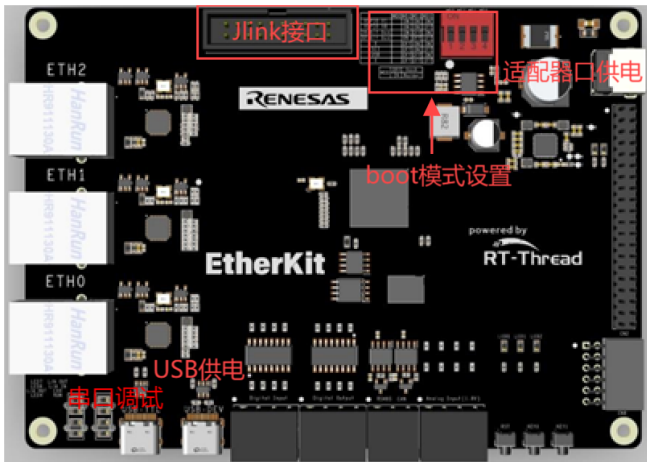
开发工具 <ul style="list-style-type: none"> • IDE: IAR EW for Arm 9.50.2 E2studio 2024-01.1 • FSP: RZ/N2 FSP V2.0 • 仿真器: Jlink V12 • teraterm-5.3 虚拟终端 	实验材料 <ul style="list-style-type: none"> • Etherkit 开发板 • Jlink 仿真器, 需支持瑞萨 R52 内核
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实验部分

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1 .硬件设置及软件安装

本节 EtherKit 开发板硬件设置。

<p>1.1</p>	<p>开发板设置：</p> <ul style="list-style-type: none"> ● 供电：可选 USB 供电或适配器供电 ● Boot 模式设置：推荐 xSPI0 x1 boot mode ● Jlink v12 ● USB 端口和 USB 供电同一个端口 
<p>1.2</p>	<p>软件安装：</p> <ul style="list-style-type: none"> ● 安装 IAR EW for Arm 9.50.2 ● 安装 FSP 2.0: RZN2L: setup_rznfsp_v2_0_0_rzsc_v2024-01.1.exe ● 安装 E2studio : RZN2L: setup_rznfsp_v2_0_0_e2s_v2024-01.1.exe

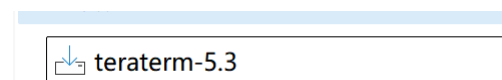
本节完

2 .teraterm-5.3 虚拟终端安装

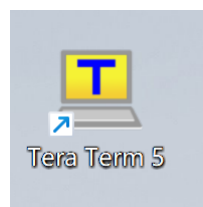
本节使用虚拟终端版本 teraterm-5.3 。

2.1

安装软件，默认安装

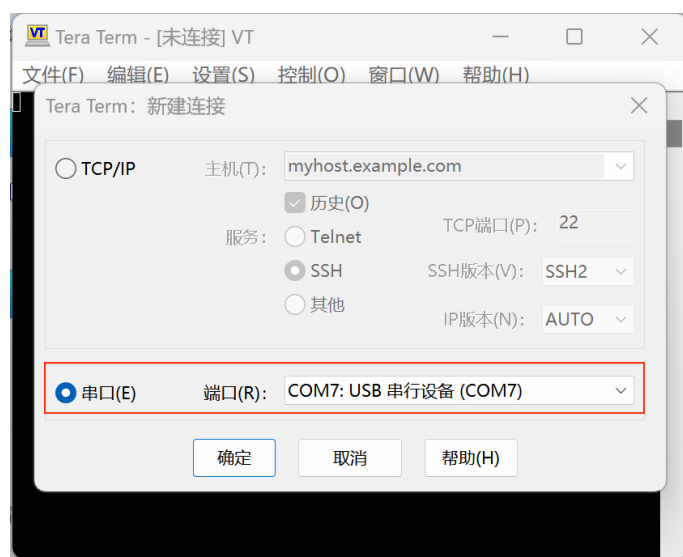


安装成功:

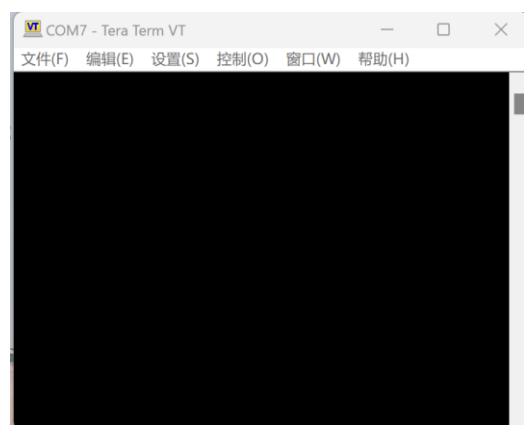


- 打开软件：

选择串口，选择对应的 COMX，此处为 com7

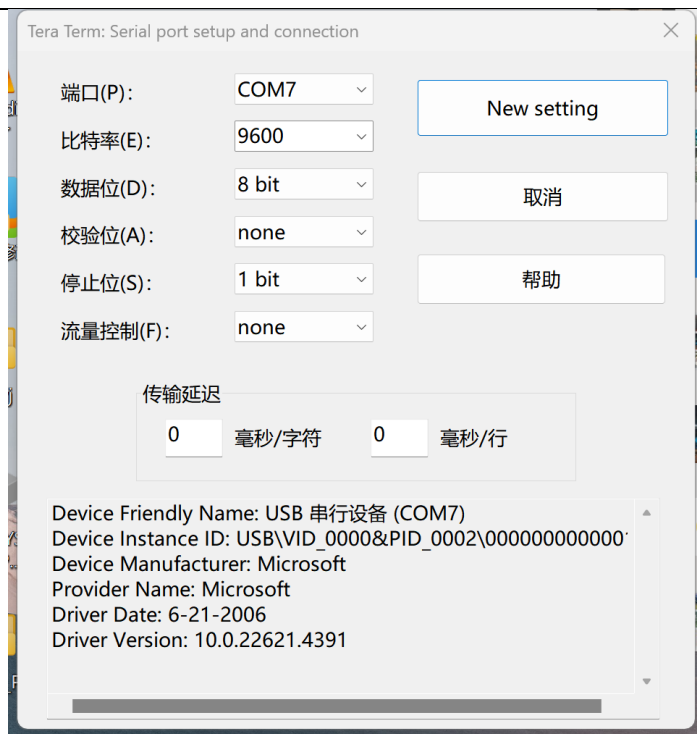


- 确认，进入如下界面



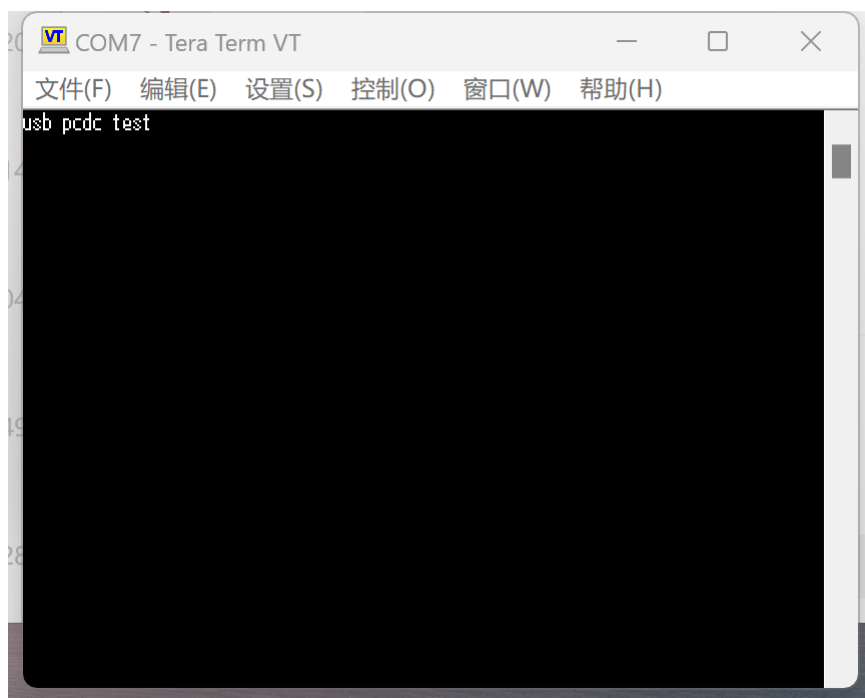
- 打开 设置--串口

进入如下配置：波特率 9600， 点击 New setting



- 以下是连接成功界面：

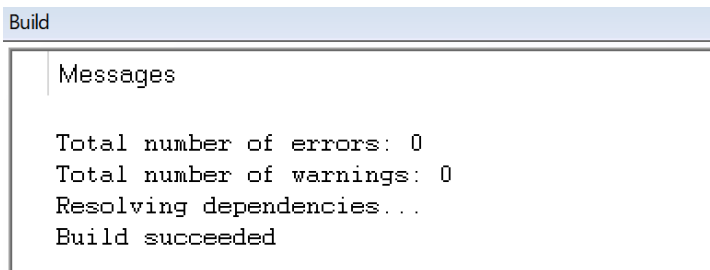
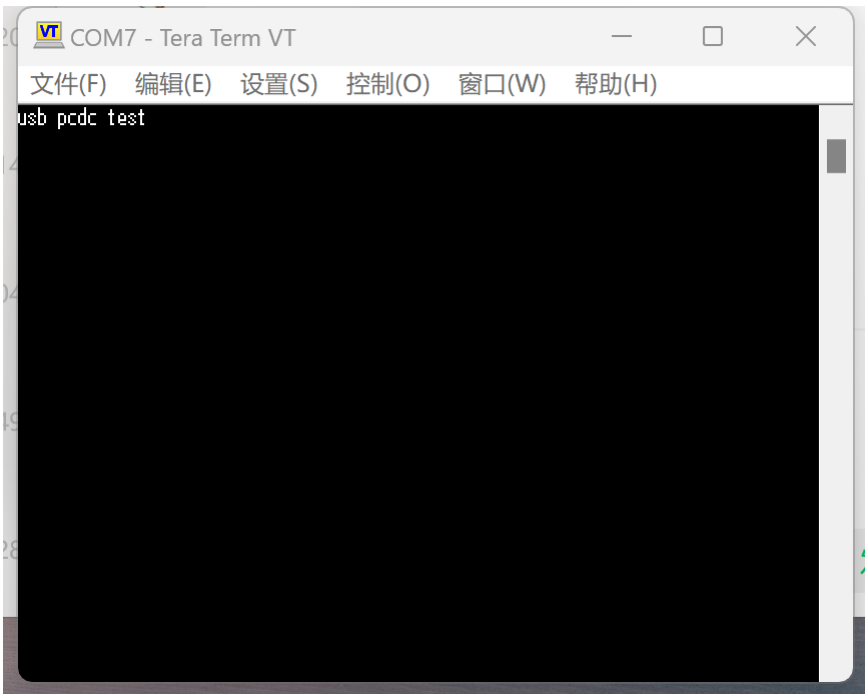
面板可输入任意字符



本节完

3 .IAR 环境工程介绍

本节介绍 IAR 环境下 usb_pcdc 工程。

3.1	<ul style="list-style-type: none"> ● 打开工程：RZN2L_RSK_usb_pcdc <ul style="list-style-type: none"> □ RZN2L_RSK_usb_pcdc.ewp □ RZN2L_RSK_usb_pcdc.ewt ➤ RZN2L_RSK_usb_pcdc
3.2	<p>Rebuild All 编译工程</p> 
3.3	<ul style="list-style-type: none"> ● 下载程序 <p>然后下载工程到开发板，复位开发板运行程序</p>
3.4	<ul style="list-style-type: none"> ● 运行效果，打开终端，连接成功后如下图： <p>面板可以用电脑输入任意字符。</p> 

本节完

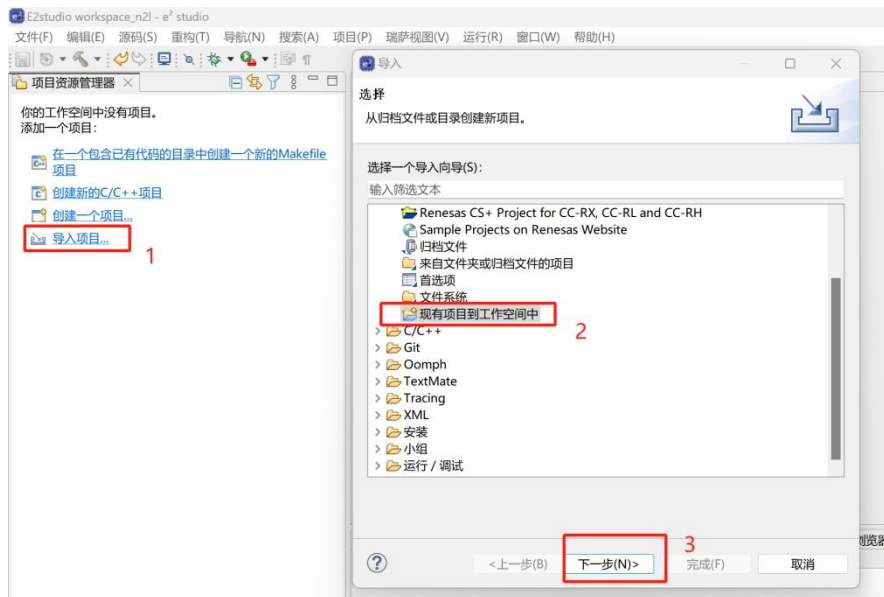
4 .E2studio 环境工程介绍

本节介绍使用 E2studio 环境 Ethernet 工程。

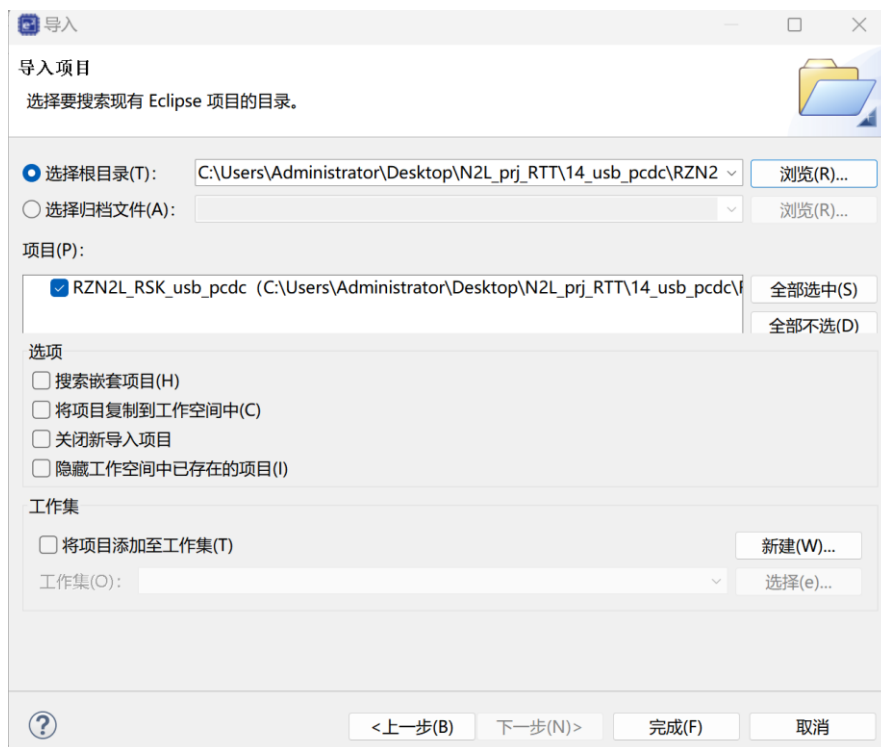
4.1

● 打开 E2studio, 导入工程

1. 选择 文件--导入--下一步:



2. 浏览--指定到工程文件夹---完成



4.2	<ul style="list-style-type: none"> ● 编译工程，无报错 <pre> CDT Build Console [RZN2L_RSK_usb_pcdc] Building file: ../rzn/board/rzn2l_rsk/board_init.c Building target: RZN2L_RSK_usb_pcdc.elf arm-none-eabi-objcopy -O srec "RZN2L_RSK_usb_pcdc.elf" "RZN2L_RSK_usb_pcdc.srec" arm-none-eabi-size --format=berkeley "RZN2L_RSK_usb_pcdc.elf" text data bss dec hex filename 24280 6240 48244 78764 133ac RZN2L_RSK_usb_pcdc.elf 16:51:22 Build Finished. 0 errors, 0 warnings. (took 4s.876ms) </pre>
4.3	<ul style="list-style-type: none"> ● 下载程序到开发板，复位板子。
4.4	<ul style="list-style-type: none"> ● 运行效果，打开终端，连接成功后如下图： <p>面板可以用电脑输入任意字符。</p> 

本节完

5 .官方 SDK 移植到 Etherkit 修改位置

5.1

● 禁掉 ETH2

Pin Selection

Type filter text

- > P22
- > P23
- > P24
- > Other Pins
- ✓ Peripherals
 - > Connectivity:CANFD
 - > Connectivity:ETHER_ESC
 - ✓ Connectivity:ETHER_ETH
 - ✓ ETHER_ETH0
 - ✓ ETHER_ETH1
 - ✓ ETHER_ETH2
 - > Connectivity:ETHER_ETHSW
 - > Connectivity:ETHER_GMAC
 - ✓ Connectivity:IIC
 - ✓ IIC0

Pin Configuration

Name	Value	Lock	Link
Pin Group Selection	Mixed		
Operation Mode	Disabled		
Input/Output			
ETH2_COL	None		
ETH2_CRS	None		
ETH2_REFCLK	None		
ETH2_RMII2_REFCLK	None		
ETH2_RXCLK_REF_CLK_RXC	None		
ETH2_RXD0	None		
ETH2_RXD1	None		
ETH2_RXD2	None		
ETH2_RXD3	None		

Module name: ETHER_ETH2

Pin Function | Pin Number

Summary | BSP | Clocks | Pins | Interrupts | Event Links | Stacks | Components

● 禁掉 IIC1

Pin Selection

Type filter text

- > Connectivity:ETHER_ESC
- ✓ Connectivity:ETHER_ETH
 - ✓ ETHER_ETH0
 - ✓ ETHER_ETH1
 - ✓ ETHER_ETH2
- > Connectivity:ETHER_ETHSW
- > Connectivity:ETHER_GMAC
- ✓ Connectivity:IIC
 - ✓ IIC0
 - ✓ IIC1
 - ✓ IIC2
- > Connectivity:PHOSTIF
- > Connectivity:SCI
- > Connectivity:SHOSTIF
- > Connectivity:SPI

Pin Configuration

Name	Value	Lock	Link
Pin Group Selection	Mixed		
Operation Mode	Disabled		
Input/Output			
IIC_SCL1	None		
IIC_SDA1	None		

Module name: IIC1

Pin Function | Pin Number

Summary | BSP | Clocks | Pins | Interrupts | Event Links | Stacks | Components

5.2

● 修改 USB 配置

USB 使用引脚设置和开发板一致。

Pin Selection

Type filter text

- > Connectivity:SHOSTIF
- ✓ Connectivity:SPI
- ✓ Connectivity:USB_HS
 - ✓ USB_HS
- > Connectivity:XSPI
- > Debug:JTAG/SWD
- > Debug:TRACE
- > Delta signalF:DSMIF
- > ExBus:BSC
- > Interrupt:IRQ
- ✓ System:CGC
- > System:MBXSEM
- ✓ System:SYSTEM
- > TRG:ADC
- > Timer:CMTW
- > Timer:GPT
- > Timer:GPT_POEG

Pin Configuration

Name	Value	Lock	Link
Pin Group Selection	Mixed		
Operation Mode	Enabled		
Input/Output			
USB_EXICEN	None		
USB_OTGID	None		
USB_OVRCUR	✓ P00_2		
USB_VBUSIN	✓ P05_2		
USB_VBUSIN	✓ P07_4		

Module name: USB_HS

Pin Function | Pin Number

Summary | BSP | Clocks | Pins | Interrupts | Event Links | Stacks | Components

保存重新生成代码。

本节完