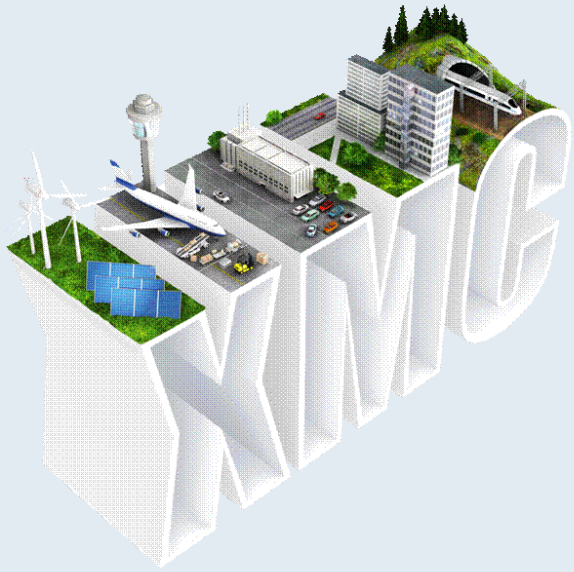
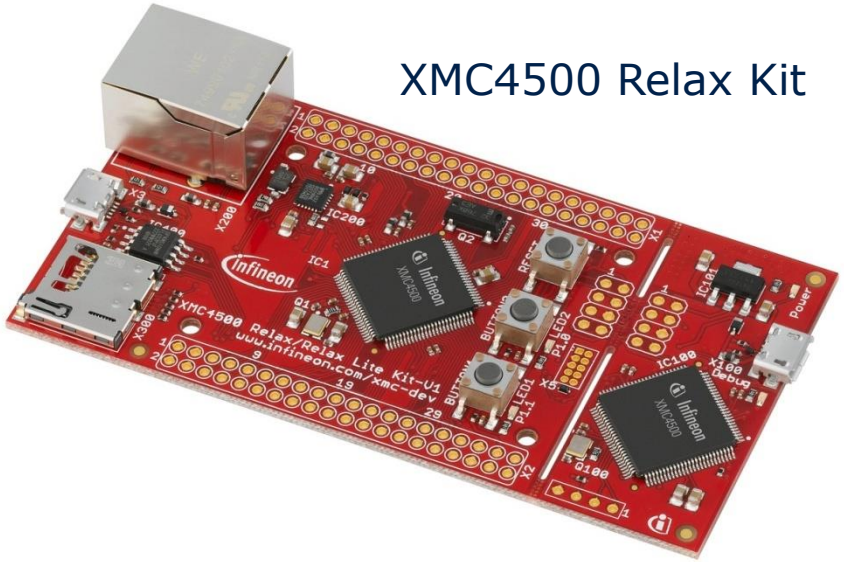
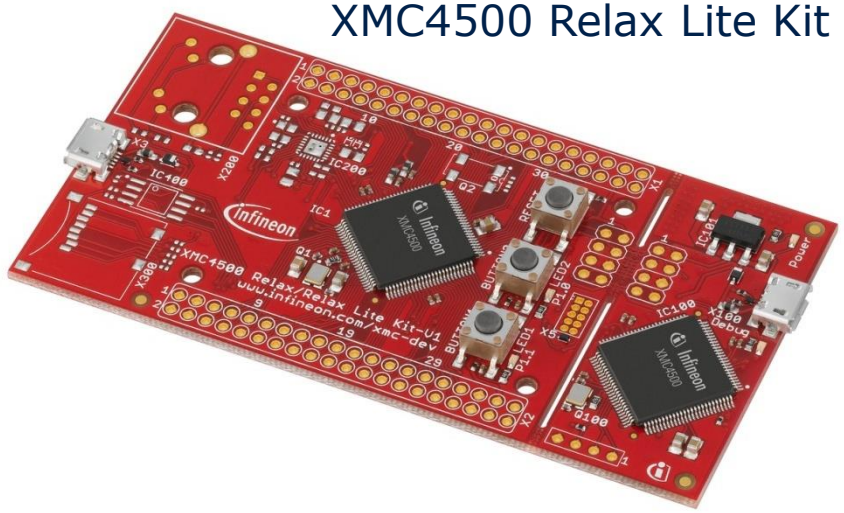


Infineon

XMC4500 Relax Kit



XMC4500 Relax Lite Kit



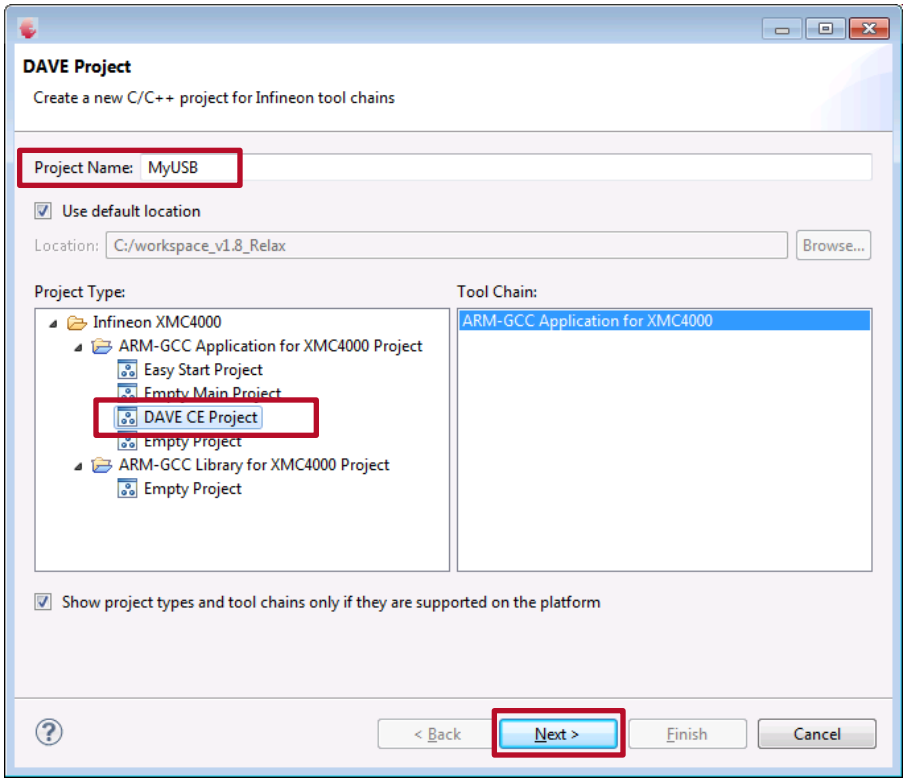
- The XMC4500 Relax Kit and the XMC4500 Relax Lite Kit are new budget-priced evaluation boards equipped with:
  - ARM® Cortex™-M4F CPU running on 120MHz
  - 1MB Flash
  - 160KB RAM
- The Relax Lite Kit offers a complete set of on-board devices and plugs to run USB-based applications and to develop human machine interfaces with buttons and LEDs
- The Relax Kit extends the feature set with an Ethernet-enabled communication option. It also allows developers to explore mass storage and file systems using a microSD card. In addition, it comes with serial flash memory

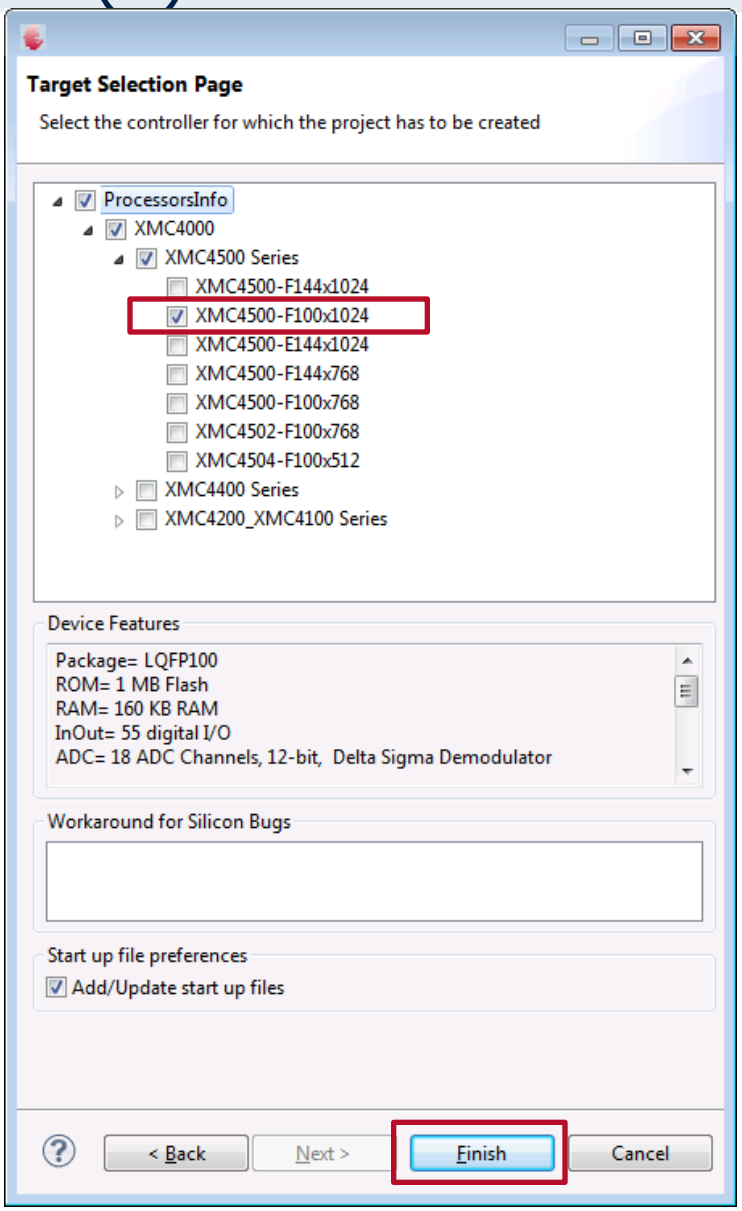
Exercise 1: USB Virtual Serial Port

- Implement a USB CDC Class (USBVC001) acting as virtual serial port:
  - Send “Hello Word” to the terminal program via USB on reception of any character/string.

Exercise 1: USB Virtual Serial Port (1)

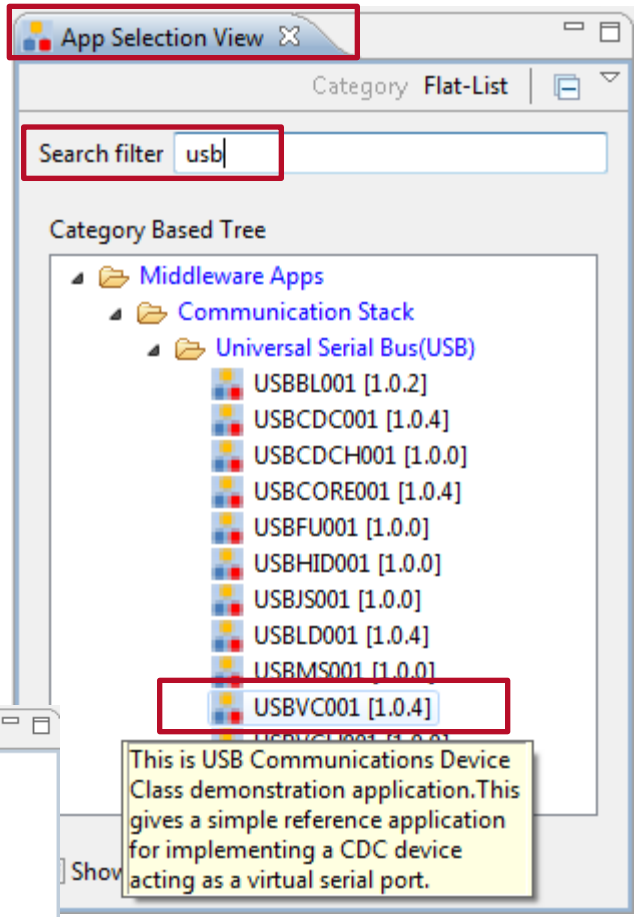
- Start a New Project
  - File > New > DAVE Project
- Project Name: MyUSB
- Project Type: DAVE CE Project
- Target Device: XMC4500-F100x1024

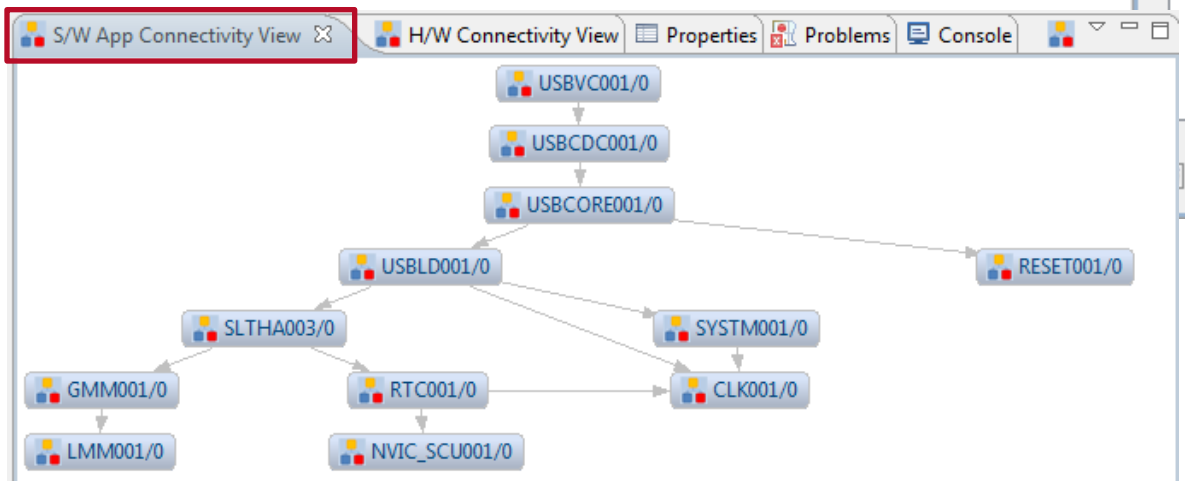




Exercise 1: USB Virtual Serial Port (2)

- Add an App to your project:
  - The "Search Filter" in the "App Selection View" helps you to find Apps
  - Double Click on the USBVC001 App to insert the App into your project
  - In the "S/W App Connectivity View" window all requires "Sub"-Apps will appear



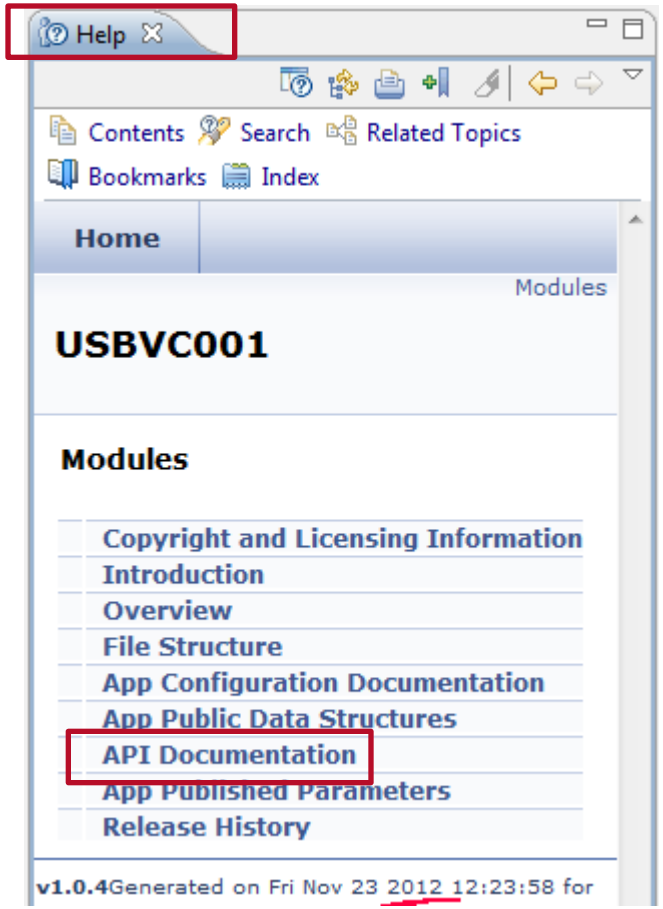


- Use the mouseover function to get more details about the Apps

Exercise 1: USB Virtual Serial Port (3)

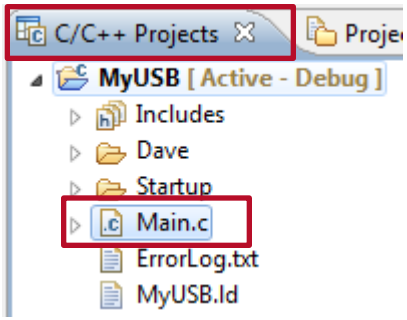
- Look up in the Apps documentation:
  - Press F1 or click Help > Dynamic Help
  - Then click on the App 

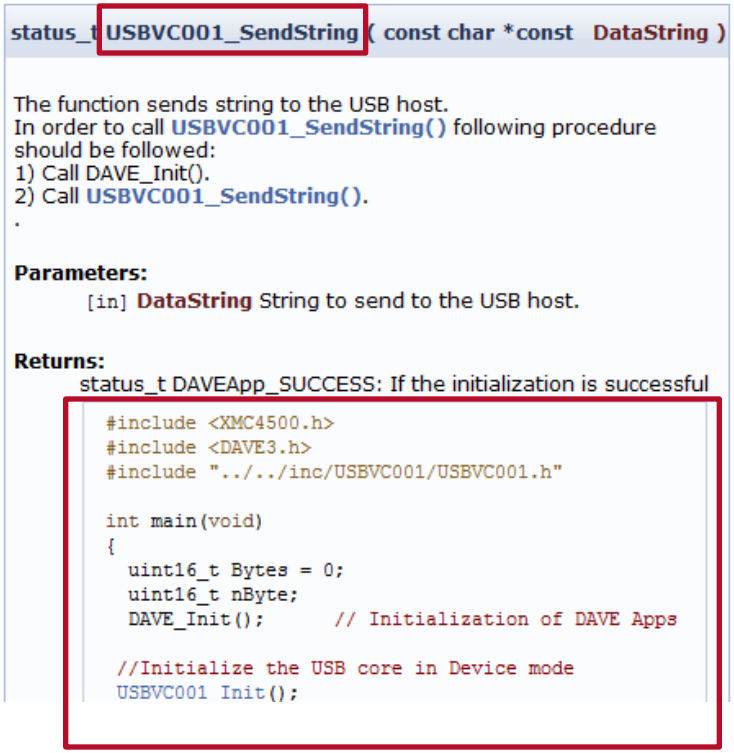
  - In Help window click on “More Info”
  - Click “API Documentation”



Exercise 1: USB Virtual Serial Port (4)

- Use the example code from the documentation in your project:
  - In the C/C++ Projects window double click on Main.c
  - Delete the code in Main.c window.
  - In Help: Copy the complete code example of the function „USBVC001_SendString“
  - In Main.c: Paste the code example





Exercise 1: USB Virtual Serial Port (5)

- Click  to generate the code
  - Code needs to be generated only if
    - new Apps have been added to the project or
    - Apps settings have been changed
- Build the project: 

- Exercises:
  - Study the code in main. What needs to be changed in the code, if “Hello World” should be send on reception of a byte only? Modify the code.
  - Where can you find the compiler messages und what error does the compiler report? Correct the code!

Exercise 1: USB Virtual Serial Port (6)

- Exercises Solution:
  - What needs to be changed in the code, if “Hello World” should be send only on reception of a byte?
    Move the function “USBVC001_SendString” into the if-condition:

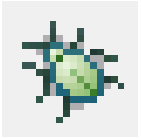
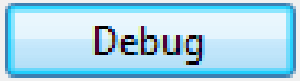
```
if(Bytes != 0)
{
  .....
  USBVC001_SendString((const char *)"Hello World");
}
```

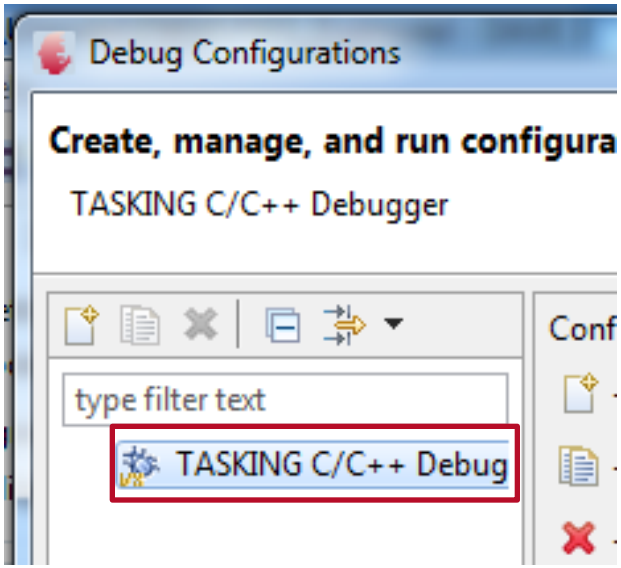
  - Where can you find the compiler messages and what error does the compiler report?
    “Console” shows compiler messages.
    Add code for TxBuffer declaration:

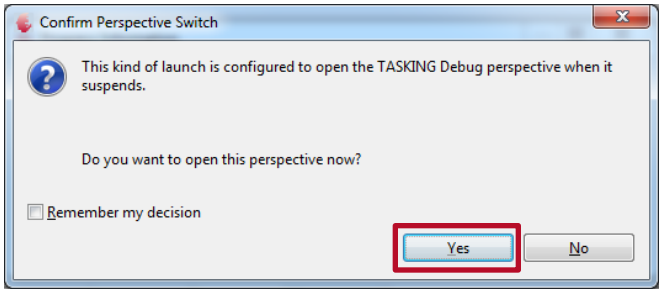
```
int main(void)
{
  int8_t TxBuffer[100];
  uint16_t Bytes = 0;
  uint16_t nByte;
```

- Build the project again.

Exercise 1: USB Virtual Serial Port (7)

- Connect Relax Kit via USB cable to X100
- Setup a Debug Session
  - Click the "bug" button 
  - Double Click on "TASKING C/C++ Debug"
  - Click the "Debug" button 
  - Click "Yes" in the "Confirm Perspective Switch" dialog
  - Run the  with the "Resume" button

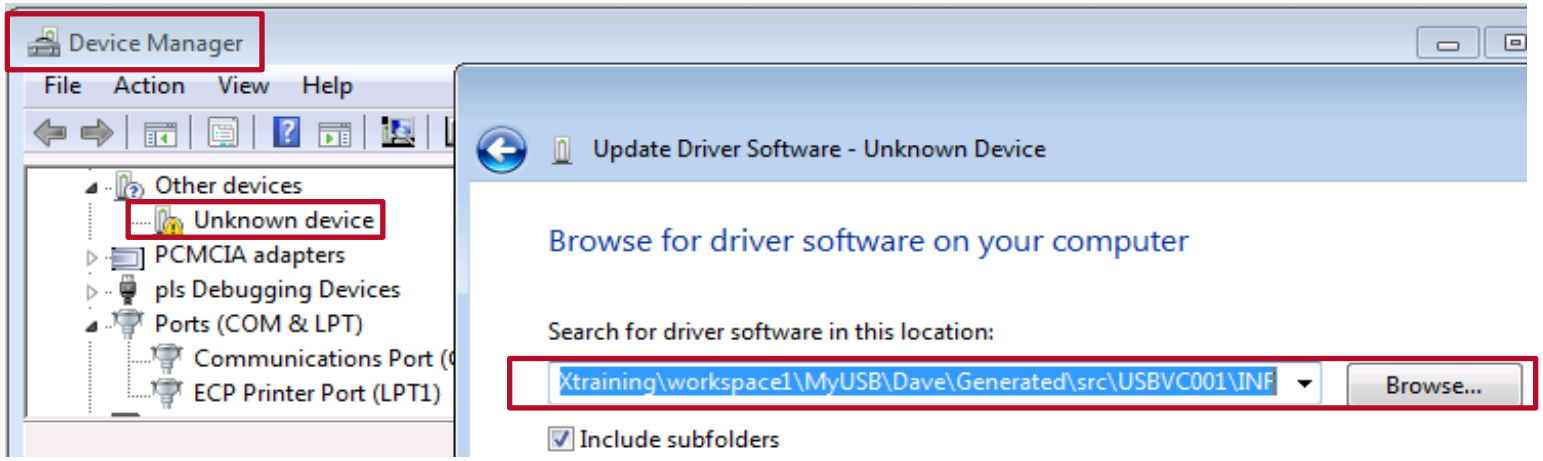




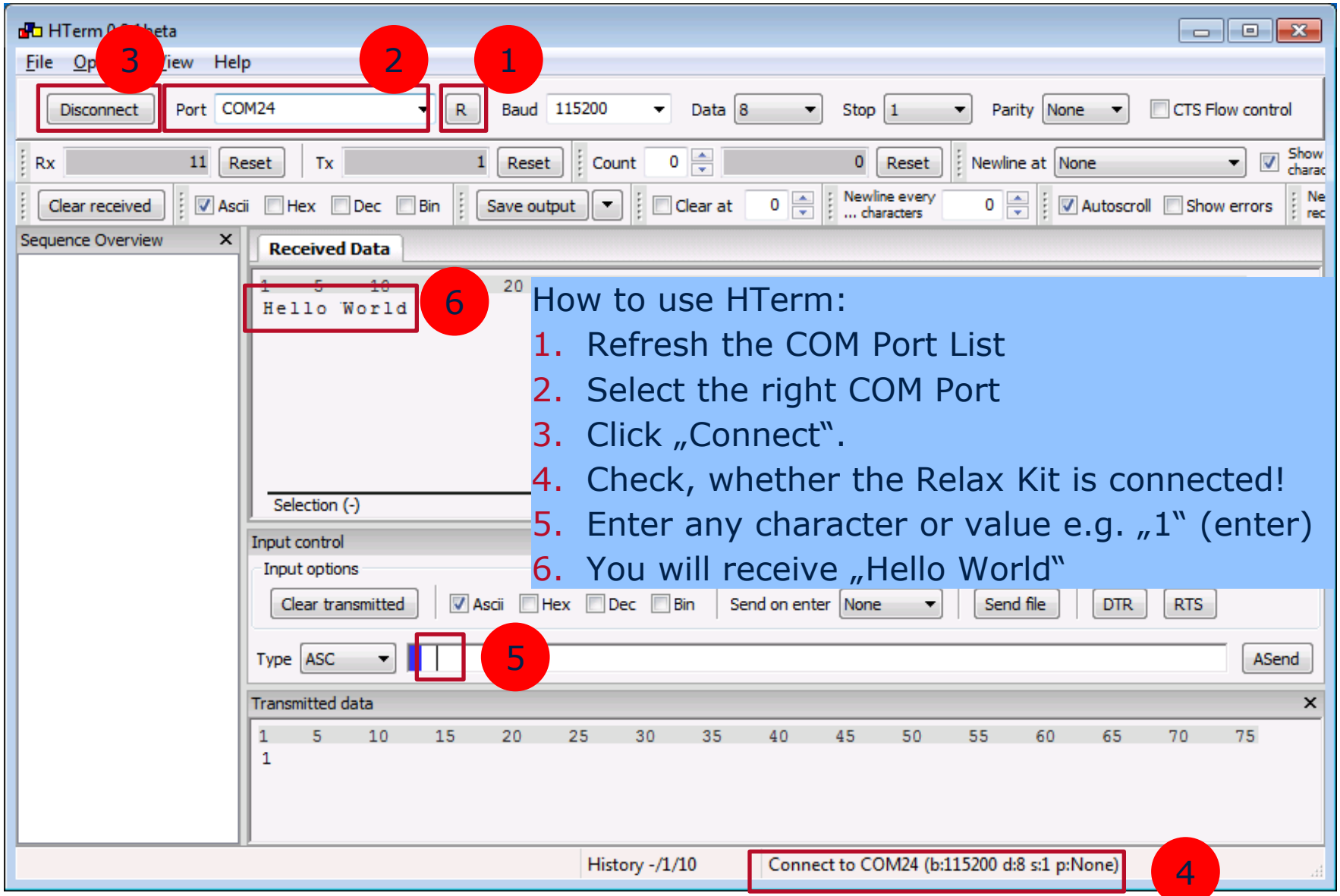
- Note: The next time you want to launch the debugger, just click on the "bug" button

Exercise 1: USB Virtual Serial Port (8)

- Installation of USB Driver on the PC:
  - Connect USB port (X3) of the Relax Kit to your PC
  - Open Windows Device Manager from the control panel
  - Select the "Unknown device" with the driver error indication
  - Choose the option in the properties window to update the driver
  - Use the manual driver location option and point it: C:\YOUR_workspace\MyUSB\Dave\Generated\src\USBVC001\INF



Exercise 1: USB Virtual Serial Port (9)



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