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How to use MDK for W7500 Peripherals Examples

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- author : IOP Team
- version : V1.0.0
- date : 1-May-2015
- brief : Description of How to use W7500 Peripheral example with Keil project.

Introduction

This application note guides user to use W7500 peripheral examples with Keil uVision compiler. Here we use TCP/IP core Offload Engine(TOE) among W7500 peripherals and loopback test example as sample.

This document is based on Keil uVision MDK-Lite version:5.14.0.0 compiler and WIZwiki-W7500 platform as hardware.

Download W7500 library and example

You can download the library and example zip file at [link]. Download and abstract the file then you can see some folder.

Directory structure

The extracted files consist of the CMSIS, driver and peripheral example. The W7500 standard peripheral library provides a rich set of examples covering the main features of each peripheral.

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Example of WZTOE directory

In WZTOE folder, directory structure is as follows.



DHCPClient, DNSClient and LoopbackTest are example project and ioLibrary contains library of socket APIs, DHCP APIs, DNS APIs and etc.

In LoopbackTest folder, directory structure is as follows.

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📙 GCC
] MDK
📄 main.c
💼 readme.md
📄 retarget.c
W7500x_conf.h
W7500x_it.c
🗎 W7500x_it.h

The **main.c** file is main body of the project.

The **retarget.c** file is for using printf function for debug.

The **W7500x_conf.h** file contains all peripheral headers. If you want to enable/disable peripheral header file, uncomment/comment the line.

The W7500x_it.c file contains interrupt handlers for the project.

The **readme.md** file contains the example description, hardware and software environment and description of how to use.

The **MDK** folder is for Keil IDE compiler and the **GCC** folder is for GCC compiler.

Open Keil project

In MDK directory is here a file: Keil project file. Double click the file, then Keil uVision will be opened.

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You can see upper image at left side on your uVision. In **W7500x_Periph** group are peripheral drivers which are used for this project. The **User** group contains main function.

Compile



Click the build icon on menu bar or 'F7'. Then compile will be done. After compile, **W7500x_WZTOE_Loopback.bin** file is generated in Obj folder.

Download code

WIZwiki-W7500 board supports CMSIS-DAP, so you can just drag & drop the code file to download into 'mbed' directory on your system.



Connect to WIZwiki-W7500 and do the loopback test

Now, WIZwiki-W7500 is running TCP server: IP - 192.168.77.9, PORT - 5000. Type IP address and Port number(This application note use Hercules as TCP client program). And then click 'Connect' button.

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S Hercules SETUP utility by HW-group.com	
UDP Setup Serial TCP Client TCP Server UDP Test Mode About Received/Sent data	TCP Port
	192.168.77.9 5000 Ping ★ Connect TEA authorization TEA key 1: 01020304 3: 090A0B0C 2: 05050709 4: 00050510
	Authorization code
	Received test data
Send	
	Send HW group
□ HEX	Send Version 3.2.8

After connection, send some string and you can see the same as you sent.

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😵 Hercules SETUP utility by HW-group.com	_ D X
UDP Setup Serial TCP Client TCP Server UDP Test Mode About Received/Sent data Connecting to 192.168.77.9 WIZwiki-W7500WIZwiki-W7500 Sent string Received string	TCP Port 192.168.77.9 5000 Ping Disconnect TEA authorization TEA key 1: 01020304 3: 090A0B0C 2: 05060708 4: 0D0E0F10 Authorization code Image: Comparison code Image: Comparison code PortStore test NVT disable Received test data Received test data Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code Image: Comparison code
Send WIZwiki-W7500	HEX Send HEX Send HEX Send HEX Send Version 3.2.8

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