HME05

DWIN JTAG 仿真器

DWIN JTAG simulator

修订记录 Record of Revision

版本Ver	日期Revise Date	描述Content	编辑Editor
00	2021.01.11	首次发布First Edition	郑运佳

简介 Introduction

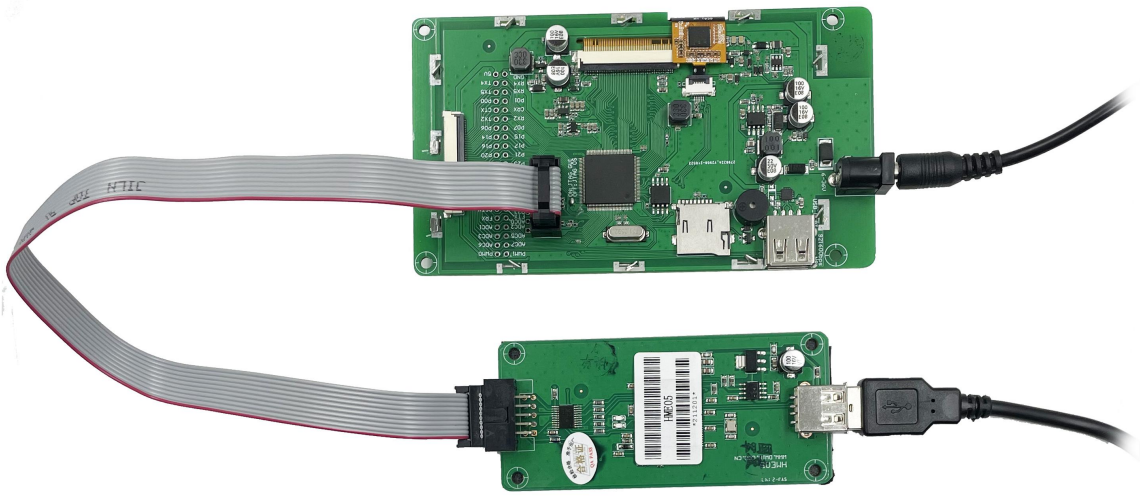
HME05是一款调试仿真器，借助 HME05 仿真器，安装相应的USB 驱动后，用户可以连接 T5L 的 JTAG 接口，在 Keil 开发环境下进行代码 IAP 调试和仿真运行。

HME05 is a debugging emulator. With the help of HME05 emulator, after installing the corresponding USB driver, users can connect the JTAG interface of T5L for code IAP debugging and simulation operation in KEIL development environment.

接口介绍 Interface

引脚 Pin	信号名称 Signal name	类型 Type	描述 Description
1	GND	P	公共接地/GND
2	TDI	I	数据输入/Input
3/4/5	NC	-	未定义/Undefined
6	TMS	-	模式选择/Mode selection
7	VCC	P	电源输入/Power input
8	TDO	O	数据输出/Output
9	GND	P	公共接地/GND
10	TCK	-	时钟/Clock

连接示意图 Connection diagram



使用方法Usage

（建议在WINDOWS7下安装 It is recommended to install under Windows 7）

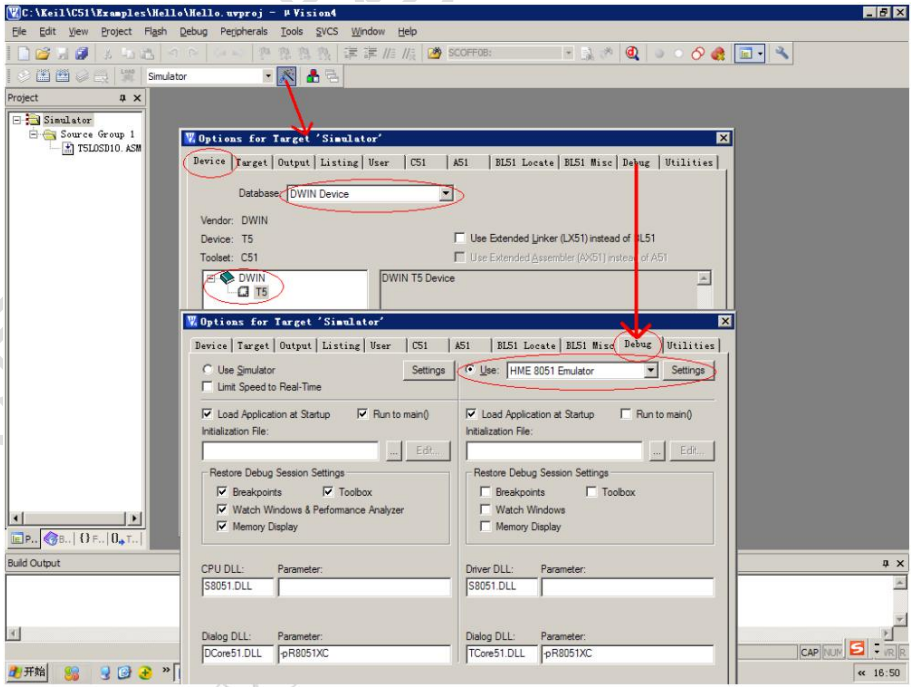
1、安装HME05 USB驱动。Install the HME05 USB driver.

JTAG接口必须选择到OS CPU，并且是JTAG模式，即OS/GUI（PIN#32）=0 JTAGS（PIN#34）=1。使用开发板仿真时，JTAG接口边上跳线焊盘为断开状态。

The JTAG interface must be selected to the OS CPU and in the JTAG mode, that is, OS/GUI(PIN#32)=0 JTAGS(PIN#34)=1. When using the development board simulation, the jumper pad on the side of the JTAG interface is disconnected.

2、安装好 AGDI 驱动，使得 Keil 支持 T5 和 HME05 仿真器，安装好之后按照下图选择和配置。 安装好之后，把 T5L OS CPU 的头文件(*.INC 或*.h) Copy 到 KEIL/C51/INC/DWIN 目录下。

Install the AGDI driver so that Keil supports T5 and HME05 simulators. After installation, select and configure as follows. After installation, you should copy the header files (*. Inc or *. H) of T5L OS CPU to the KEIL/C51/INC/DWIN directory.



3、注意事项Note

①设置断点读取数据存储器（XDATA）内容前，必须确保DPC=0x00，否则数据会错位。

Before setting a breakpoint to read the contents of the data store (XDATA), you must ensure that DPC = 0x00, otherwise the data will be misaligned.

②仿真前，必须确保烧录在T5L Flash中的OS CPU代码0x00F8位置开始是0xFF FF 44 57 49 4E 54 35，否则OS CPU的JTAG接口被禁止，不能连接上HME05仿真器。

Before simulation, it must be ensured that the position of OS CPU code 0x00F8 burned in T5L Flash starts with 0xFF FF 44 57 49 4E 54 35, otherwise the JTAG interface of OS CPU is prohibited and hme05 simulator cannot be connected.

③ 用户在标准C或其他8051平台代码移植时，注意编译时SFR头文件加载要选择T5L相应的.INC或.H文件。如果客户代码中的SFR定义和T5L定义不同时，可以修改代码或T5L的SFR头文件保持一致。

When porting standard C or other 8051 platform code, users should pay attention to selecting the corresponding T5L when loading SFR header file during compilation Inc or H file. If the SFR definition in the customer code is different from the T5L definition, you can modify the code or keep the SFR header file of T5L consistent.

④HME05是通过把代码下载到T5L OS CPU的Code RAM来实现硬件仿真的，代码并没有烧录到片内的Flash上。把代码烧录到芯片内部，需要通过SD卡接口或者UART1调试接口，SD卡接口烧录时T5L底层会自动把OS代码的0x00F8位置修改为0x0000（禁止JTAG接口） 44 57 49 4E 54 35 。

HME05 realizes hardware simulation by downloading the code to the code RAM of T5L OS CPU, and the code is not burned to the on-chip flash. To burn the code into the chip, you need to use the SD card interface or UART1 debugging interface. When burning the SD card interface, the bottom layer of T5L will automatically change the 0x00F8 position of the OS code to 0x0000 (JTAG interface prohibited) 44 57 49 4E 54 35.

4、T5L OS CPU采用标准8051架构，除SFR和扩展外设访问略有差异外，指令集完全相同，移植用户原有8051代码时，注意好以下几个方面：

T5l OS CPU adopts standard 8051 architecture. Except that SFR and extended peripheral access are slightly different, the instruction set is exactly the same. When transplanting the user's original 8051 code, pay attention to the following aspects.

①按照硬件设计，在复位后用迪文提供的startup.A51（C51启动代码）或initcpu汇编程序简单修改、配置好T5L特有的SFR和参数设置。典型的差异在IO、定时器主频、中断、WDT之类。

According to the hardware design, use the startup provided by DWIN after reset A51 (C51 startup code) or initcpu assembler can simply modify and configure the SFR and parameter settings unique to t5l. Typical differences are IO, timer dominant frequency, interrupt, WDT, etc.

②T5L的IO输出模式是可控的，在输入、输出模式之间切换时，要相应配置PxMDOUT寄存器，否则会出错。

The IO output mode of T5L is controllable. When switching between input and output modes, PxMDOUT register shall be configured accordingly, otherwise an error will occur.

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③把中断嵌套关闭，每个中断服务程序进入时EA=0，退出时EA=1。

Close the interrupt nesting. EA = 0 when each interrupt service program enters and EA = 1 when it exits.

④代码中用到片外RAM（XRAM）做数据存储时，注意T5L的32KB数据RAM起始地址是从0x8000开始。

When off chip RAM (xram) is used for data storage in the code, note that the starting address of 32KB data RAM of t5l starts from 0x8000.

⑤代码0x00F8位置加上0xFFFF（或0x0000禁止JTAG接口）44 57 49 4E 54 35。

Code 0x00f8 position plus 0xFFFF (or 0x0000 prohibits JTAG interface) 44 57 49 4E 54 35.

⑥用MDU硬件运算加速用户远兰代码的算法；把UI和互联网（比如通过迪文WIFI模块接入迪文云）功能挪到DGUS Ⅱ平台上实现，用户代码通过简单的读写DGUS变量空间来处理，大幅度提升产品性能，提升研发效。

The algorithm of accelerating user remote blue code with MDU hardware operation; Move the UI and Internet functions (such as accessing DWIN cloud through DWIN WiFi module) to the DGUS II platform. The user code is processed by simply reading and writing DGUS variable space, which greatly improves the product performance and R & D efficiency.

- **工作环境和可靠性参数 Reliability Test**

参数 Item	测试条件 Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
工作温度 Operating Temperature	5V 电压下，湿度 60% 60%RH at 5V voltage	-20	25	70	℃
储存温度 Storage Temperature	-	-30	25	80	℃
工作湿度 Operating Humidity	25℃	10%	60%	90%	RH
三防处理 Protective Paint	-	-	无 None	-	-

- **包装和物理尺寸 Packing Capacity & Dimension**

尺寸 Dimension	
外形尺寸 Dimension	187.45(W) × 85.85(H) ×13.20(T) mm
净重量 Net Weight	21g

声明：资料仅供参考，不影响性能参数和使用的产品设计变更，恕不另行通知。

Disclaimer: the data is for reference only and the information of product design that do not affect performance parameters and utilization is subject to alternation without prior notice.

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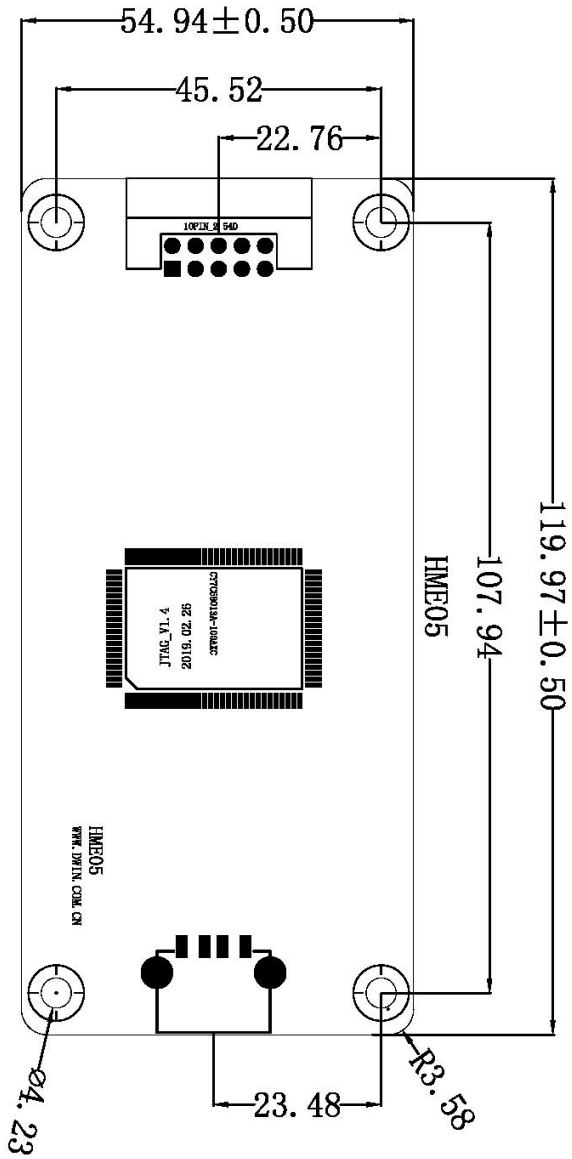

型号 Model	HME05					
图纸 Drawing	A 4	绘制 Drawn	G.Y	日期 Date	2021.12.14	
比例 Scale	1:1	审核 Review		日期 Date		
单位 Unit	MM	批准 Approval		日期 Date		

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