



**THE DATASHEET OF
TMDS-FET470R1B1M**



TMDS-FET470R1B1M IAR Kickstart Development Kit

Getting Started Guide

Literature Number: SPNU255
October 2005



Contents

| | | |
|----------|--|-----------|
| 1 | Getting Started | 5 |
| 1.1 | Kit Contents..... | 5 |
| 1.2 | Installing the Embedded Workbench KickStart-16 | 5 |
| 1.3 | Installing IAR J-Link-KS USB to JTAG Debugger | 6 |
| 1.4 | Hardware Installation | 7 |
| 1.5 | Starting the Embedded Workbench and Running the Demo Application | 7 |
| 1.6 | Documentation and Information..... | 9 |
| 2 | Helpful Hints | 10 |
| 2.1 | Setting up a new workbench..... | 10 |

List of Figures

| | | |
|---|------------------------------------|---|
| 1 | Installer Start Screen | 6 |
| 2 | Embedded Workbench Screen | 7 |
| 3 | Open Example Workspace Screen..... | 8 |
| 4 | Workspace Window | 8 |
| 5 | C-SPY Debug Button..... | 9 |
| 6 | GO Button | 9 |
| 7 | BREAK Button..... | 9 |
| 8 | EXIT Button..... | 9 |

1 Getting Started

This chapter provides installation and programming instructions for the starter kit TMDS-FET470R1B1M TMS470 IAR Kickstart Development Kit.

1.1 *Kit Contents*

- One TMDS-FET470R1B1M CD-ROM
- One TMDS-FET470R1B1M IAR Kickstart Development Board
- One TMDS-FET470R1B1M IAR Jlink USB-JTAG Debugger

1.2 *Installing the Embedded Workbench KickStart-16*

Exit all MS-Windows programs prior to loading this software.

The setup program installs all necessary files for running programs on the IAR KickStart Environment. The setup program adds the appropriate program group and icons to the Windows program manager. Included on this CD is a 16 Kbytes code-sized limited Embedded Workbench KickStart C/C++ compiler debugger.

1. To install it select **Install Software** and then select **KickStart Version**.

Note: If the program does not install automatically click the open file and this will begin the installation. This will start the installer (below).



Figure 1. Installer Start Screen

2. Click **Install the IAR Embedded Workbench** and follow the instructions in the installation application. If the files does not automatically open click open the file. We recommend that you use the default directories, and the **Full** installation option.
3. **Exit** the installer application.

1.3 Installing IAR J-Link-KS USB to JTAG Debugger

Before you start the Embedded Workbench it is a good idea to install the J-Link-KS USB to JTAG debugger.

Note: J-Link-KS is not compatible with Windows 98.

1. Plug the USB cable into the J-Link-KS.
Important: Do not connect the J-Link-KS to the target PCB before this installation procedure is completed!
2. Connect the other end of the USB cable to the USB port on your PC. The green light on the J-Link-KS will start to blink indicating that J-Link-KS has not found a driver.
3. Your PC will search for a driver. This might take a few seconds. When it has located **New Hardware**, it will start the Install wizard.
4. Choose **Install from a specific location**
5. Click the **Browse** button and browse to the J-Link-KS directory. If you used the default directory they will be at: *C:\Program Files\IAR Systems\Embedded Workbench 4.0 Kickstart\ARM\drivers\Jlink*.

Note: WinXP shows a warning that the driver is not certified by Microsoft. Ignore this warning and click continue anyway.

6. Click **Finish**. Windows will tell you that everything is OK and the green light on J-Link-KS will stop

flashing. J-Link-KS is now installed.

1.4 Hardware Installation

1. With the J-Link-KS Connected to the PC. Connect the 20 conductor ribbon cable between the J-Link-KS and the target EVM.
2. Verify the jumper setting for J-Link-KS supplied power or connect a 6 – 9 VDC power supply to the EVM (not included) with a 5.5mmO.D. x 2.1mm I.D. connector.
3. Verify the jumper configuration with the **Descriptions of the jumpers on the TMS470R1B1M board** document named *TMS470B1M JumperDescriptions.pdf* on the supplied CD ROM, in the **Product_Info** directory.
4. Now you are ready to start the workbench and try an example program.

1.5 Starting the Embedded Workbench and Running the Demo Application

1. From the Start menu choose **Programs>IAR Systems>IAR Embedded Workbench for ARM>IAR Embedded Workbench**. The IAR Embedded Workbench for ARM will start.
2. Choose **Open existing workspace**.

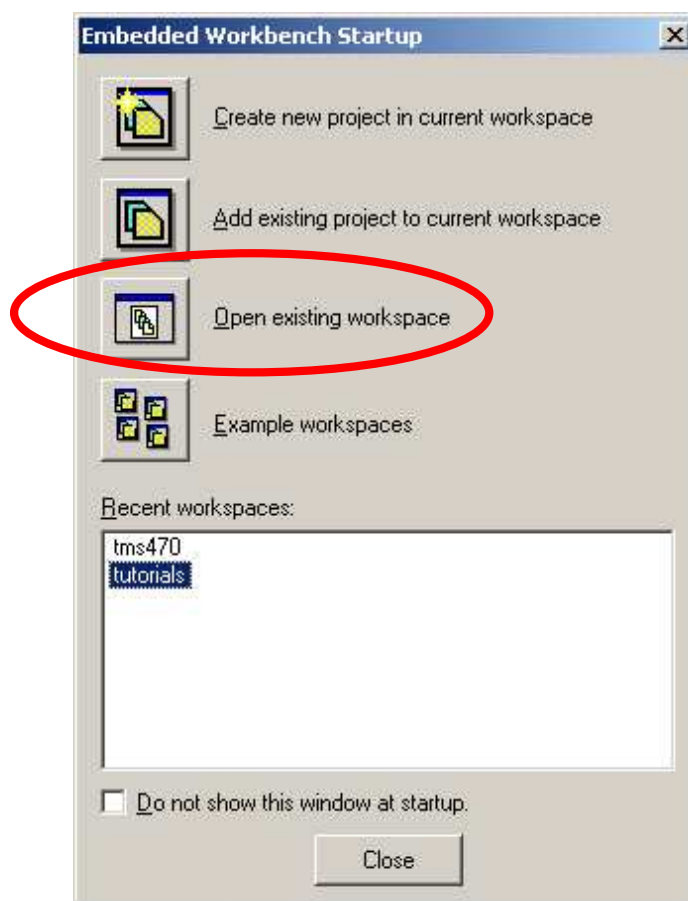


Figure 2. Embedded Workbench Screen

3. Navigate to the installation directory `\ARM\src\examples\TexasInstruments\TMS470R1B1M\FlashingLight` directory and open the `tms470.eww` workspace.

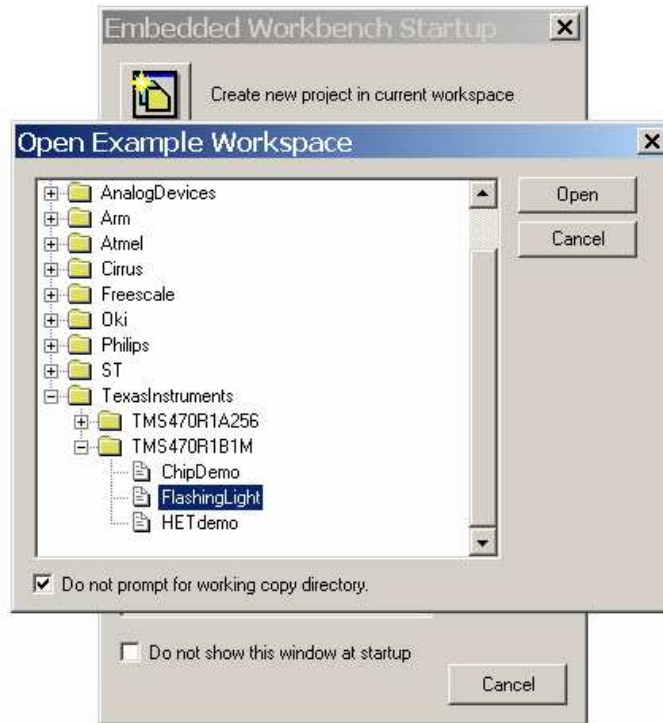


Figure 3. Open Example Workspace Screen

In the Workspace window, select **Flash** as the compilation target.

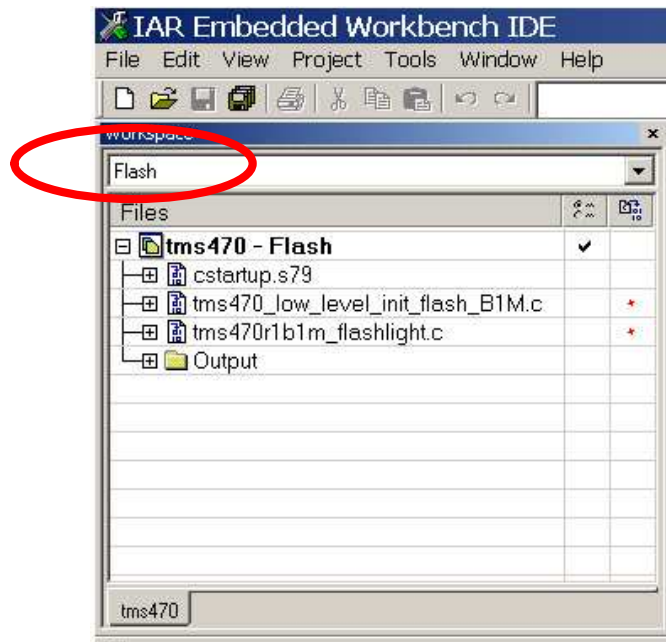


Figure 4. Workspace Window

Double clicking on any of the files in the list will open the editor window.

4. Click the C-SPY **Debug** button. This will automatically compile the project, if necessary, start C-SPY **Debug** and then download and Flash.

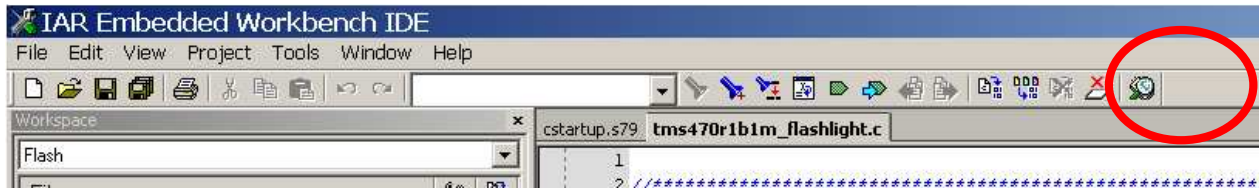


Figure 5. C-SPY Debug Button

5. Click on the **GO** button to start the program.

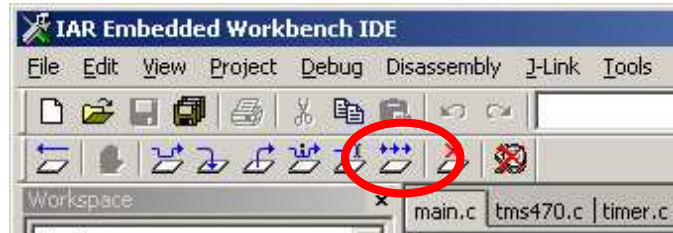


Figure 6. GO Button

6. The lights should now be blinking on the target board.
7. To stop the debugger click the **BREAK** button.

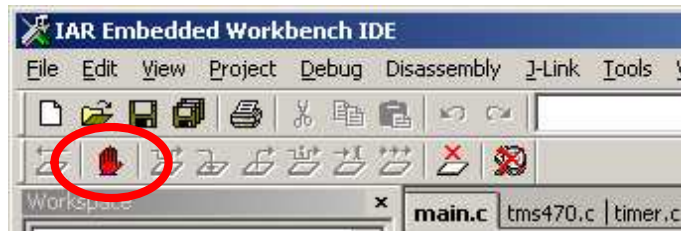


Figure 7. BREAK Button

8. To exit the debugger click the **EXIT** button.

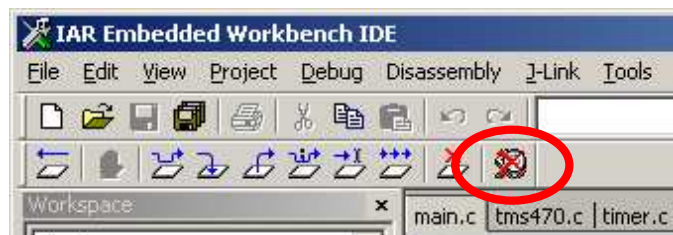


Figure 8. EXIT Button

Congratulations. You have just run your first Embedded Workbench for ARM application and debug session.

1.6 Documentation and Information

For more information, please see the user guides in PDF format in the installation directory `\\ARM\\doc` on the CD ROM.

Comprehensive and up-to-date documentation and information can be found on the Web at <http://www.ti.com/tms470>.

2 Helpful Hints

2.1 *Setting up a new workbench*

1. Start a new work space.
2. Add a new project. **Project>Create a New Project** Name and save it to your project directory.
3. Add the program files (or create a new program file then add it) **Project>Add a New File**.
Example : main.c , tms470_cstartup.s79 and tms470_low_level_init.c
4. Select the project
5. Select options for the project. **Project>Options**.
6. Select the General Options Category and Confirm the **Target Window**.
 - a. Select the **chip variant** in use, **ARM Mode**, **Big-Endian Mode**, and **4 bytes**.
7. Select the **Linker Category** and Confirm the Output Window.
 - a. Select **Allow C-SPY specific extra output file**
8. Change to **Extra Output Window** and select **Generate extra output file**.
9. Change to **config Window** and select **Override default** for the Linker Command file.
10. Select the appropriate CMD file for part, RAM or Flash.
11. Select the **Debugger Category** and Confirm the Setup Window.
 - a. Change **Driver** to **J-Link**.
 - b. Change **Setup Macros** by checking the **Use Macro file** to the appropriate macro (Ram or Flash).
 - c. Change to **Download Window** and select **Verify download** and if you are going to flash the part check the **Flash download**.
 - d. Close the window and you are now ready to start.

IMPORTANT NOTICE

Texas Instruments Incorporated and its subsidiaries (TI) reserve the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services at any time and to discontinue any product or service without notice. Customers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its hardware products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are used to the extent TI deems necessary to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

TI assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using TI components. To minimize the risks associated with customer products and applications, customers should provide adequate design and operating safeguards.

TI does not warrant or represent that any license, either express or implied, is granted under any TI patent right, copyright, mask work right, or other TI intellectual property right relating to any combination, machine, or process in which TI products or services are used. Information published by TI regarding third-party products or services does not constitute a license from TI to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

Reproduction of information in TI data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. Reproduction of this information with alteration is an unfair and deceptive business practice. TI is not responsible or liable for such altered documentation.

Resale of TI products or services with statements different from or beyond the parameters stated by TI for that product or service voids all express and any implied warranties for the associated TI product or service and is an unfair and deceptive business practice. TI is not responsible or liable for any such statements.

Following are URLs where you can obtain information on other Texas Instruments products and application solutions:

| Products | | Applications | |
|------------------|--|---------------------|--|
| Amplifiers | amplifier.ti.com | Audio | www.ti.com/audio |
| Data Converters | dataconverter.ti.com | Automotive | www.ti.com/automotive |
| DSP | dsp.ti.com | Broadband | www.ti.com/broadband |
| Interface | interface.ti.com | Digital Control | www.ti.com/digitalcontrol |
| Logic | logic.ti.com | Military | www.ti.com/military |
| Power Mgmt | power.ti.com | Optical Networking | www.ti.com/opticalnetwork |
| Microcontrollers | microcontroller.ti.com | Security | www.ti.com/security |
| | | Telephony | www.ti.com/telephony |
| | | Video & Imaging | www.ti.com/video |
| | | Wireless | www.ti.com/wireless |

Mailing Address: Texas Instruments
Post Office Box 655303 Dallas, Texas 75265

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

 [View TMD5-FET470R1B1M on WIN SOURCE](#)

 [Texas Instruments](#) Information

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management