ecuri

camera

lighting

settings

calendar

weather

thermostat

News

current temp

68° F

heat to:

72° F

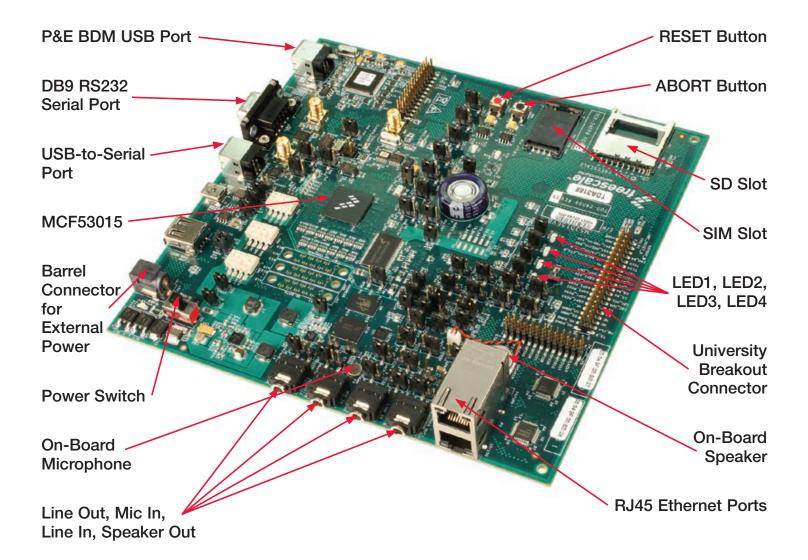
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M53015EVB 32-bit ColdFire MCU



Downloaded from Elcodis.com electronic components distributor

Get to know the M53015EVB



Introduction

In this Quick Start Guide, you will learn how to setup the Web server on the board and use the pre-loaded u-boot bootloader to boot the µClinux kernel with filesystem resident in flash.

In addition, this Quick Start Guide will provide a walk-through of how to play a sample MP3 from the USB flash mass storage device included in the kit, and also record and play back a voice WAV file from the included SD memory card.

Step-by-Step Installation Instructions



Plug the power connector into the barrel connector **(J51)** on the board. Power-on the board via the switch **(SW6)**.

As the board autoboots µClinux, you will hear the welcome message from the board in a few seconds, shortly after the LED (D1) lights up.

Install the USB to Serial Driver, CP210x_ VCP+Win2K_XP_S2K3.exe, found on the DVD. This will enable the board to communicate to a serial terminal.



Barrel Connector / for External Power





Connect the USB Cable

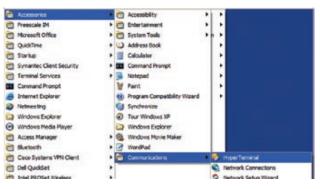
Connect the USB cable from the PC to the Serial-to-USB connector (UART0) on J49.





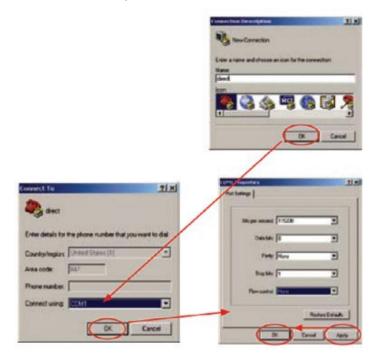


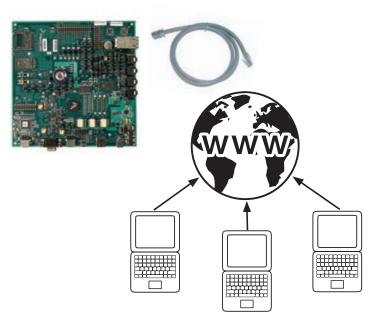
Click Start Menu > Programs > Accessories > Communications > HyperTerminal.





Configure for 115200, 8 bits, no flow control, 1 stop bit.



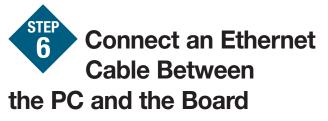


STE **Connect an Ethernet Cable to the Network**

5

If you would like to connect the board via a local network, connect an Ethernet cable between the network and the board via the bottom RJ45 jack. (P2) This Ethernet interface uses DHCP and will automatically get an IP address. Skip to Step 8.

To connect directly to a PC, continue to Step 6.



Connect an Ethernet cable between the PC and the board via the top RJ45 jack **(P2)**.







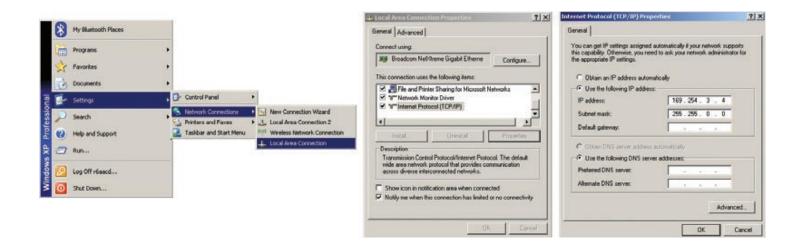


If Necessary, Manually Setup TCP/IP on the PC

The default IP address of the board is **169.254.3.3**. Typically, when you connect your computer directly to the board, the computer will default to an auto IP address on the same subnet as the board (169.254.x.x), requiring no setup.

NOTE: The PC may take a few minutes to default to the auto IP address and make the connection.

If you have trouble connecting, configure the IP address of the computer manually via Start > Settings > Network Connections > Local Area Connection. Note your original TCP/IP settings, then set your IP address to **169.254.3.4** and your subnet mask to **255.255.0.0**.





Now, go to the previously configured HyperTerminal window. At this point, the board would have already booted and you will have to hit "Enter" in order to see the "\$" prompt.

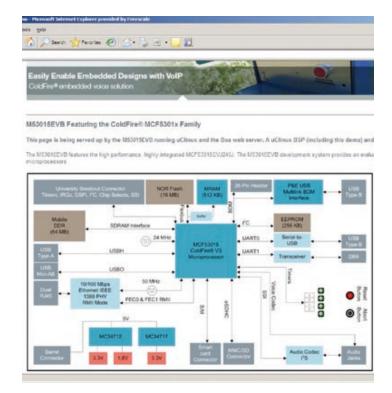
Now, type the command: **ifconfig** in order to verify your IP address for **eth0**, if you are connected to a local network, or **eth1**, if you are connected directly to a PC. The IP address for **eth1** will be **169.254.3.3**.



Open a Web Browser

Next, open a Web browser and go to the board's IP address, found in the previous step, to view the Web page that resides in the M53015EVB external flash memory.

This page is being served by the μ Clinux Boa server residing in external flash memory.





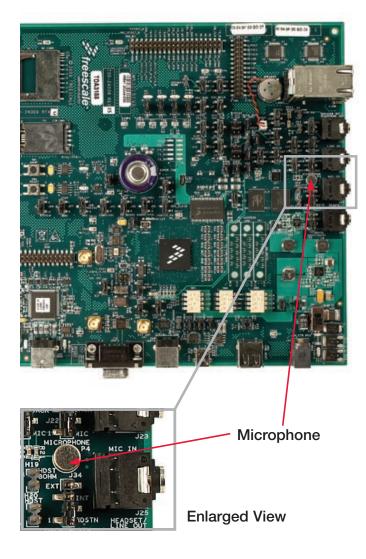
Insert the included SD memory device into the board's SD connector **(P1)**. You will see μ Clinux automount the SD memory device, which is a new feature added to the standard ColdFire μ Clinux distribution. Hit "Enter" to see the command prompt.

mmcO	new SD card at address 0007
mcblk(mmcbll): mmc0:0007 SD01G 995328KiB
;	



Record Your Voice

After the SD memory device has mounted, it is now ready to use. We will use the on-board microphone to record voice with the internal voice codec.



In HyperTerminal, type the command: vrec -w -t 10 -s 8000 -b 16 -D /dev/ dsp1 /mnt/sd/test.wav. Now, speak into the microphone for approximately 10 seconds.

-w	Record a Microsoft WAV file
-t seconds	Sets playback/recording time in seconds
-s speed	Sets sampling rate in Hz
-b bits	Sets sample size (bits per sample)
-D	Specifies device (i.e. internal voice codec)

Next, type the command: **Is /mnt/sd**. You will see the contents listed as: **test.wav**.

	perTerminal Vew Cal Transfer Help	
	<u>8 08</u> 8	
Reco \$ 1s	ec -w -t 10 -s 80 rding WAVE : 16 b /wnt/sd .wav	00 -b 16 -D /dev/dsp1 /mnt/sd/test.wav it, Speed 8000 Hz Mono

Next, type the command: **vplay -t 10 -s 8000 -b 16 -D /dev/dsp1 /mnt/sd/test. wav** to play the file using the internal voice codec.

 Image: Second Second

You will hear your voice audio from the on-board speaker.



Mount the USB Mass Storage Device

Before moving on, please move the blue jumpers J3 and J4 on the board to position 2-3. Moving these jumpers connects the external codec to the on-board speaker instead of the internal. For further details of the internal and external codecs, please refer to the M53015EVB User's Manual.

Insert the included USB mass storage device into the board's USB Type A receptacle (J50). You will see the device automount the USB mass storage device, which is a new feature added to the standard ColdFire μ Clinux distribution. Hit "Enter" to see the command prompt.

\$ usb 1-1: new full usb 1-1: configurati scsi0: SCSI emulati scsi 0:0:0:0: Direct sd 0:0:0:0: [sda] 64	Duilt-in shell (msh) List of built-in commands. speed USB device using fsl-ehci and address 2 ion W1 chosen from 1 choice ion for USB Mass Storage devices -Access TREK ThumbOrive G3 1.11 PO: 0 AMSI; 3
Enter 'help' for a l \$ usb 1-1: new full usb 1-1: configurati scsi0: SCSI emulati scsi0:0:00: Direct sd 0:0:00: [sda166	list of built-in commands. speed USB device using fsl-ehci and address 2 ion WI chosen from 1 choice ion for USB Mass Storage devices
<pre>\$ usb 1-1: new full usb 1-1: configurati scsi0 : SCSI emulati scsi 0:0:0:0: Direct sd 0:0:0:0 : Isdal 64</pre>	speed USB device using fsl-ehci and address 2 ion W1 chosen from 1 choice ion for USB Mass Storage devices
usb 1-1: configurati scsi0 : SCSI emulati scsi 0:0:0:0: Direct sd 0:0:0:0: [sda] 64	ion W1 chosen from 1 choice ion for USB Mass Storage devices
sd 0:0:0:0: [sda] As sd 0:0:0:0: [sda] 64 sd 0:0:0:0: [sda] 64 sd 0:0:0:0: [sda] Wr sd 0:0:0:0: [sda] As sda: sda]	512 512-byte hardware sectors (33 MB) ite Protect is off ssuming drive cache: write through 512 512-byte hardware sectors (33 MB) rite Protect is off ssuming drive cache: write through ttached SCSI removable disk
SU 0.0.0.0. (Sud) H	racheu acai removable ulak



Hear the Music

After the USB mass storage device has initialized and attached, it is now ready to use. In HyperTerminal using the kernel prompt, type the command: Is /mnt/usb. You will see the contents listed as: sample1.mp3* and sample2. mp3**. Now, type the command: mp3play/mnt/usb/sample1.mp3.

You will hear the music play from the on-board speaker.

R of - HyperTerminal	
File Edit View Call Transfer Help	
De 33 08 2	
<pre>\$ ls /mnt/usb sample1.mp3 sample2.mp3 \$ mp3play /mnt/usb/sample1.mp3 /mnt/usb/sample1.mp3: MPEG1-III (43)</pre>	7408 ms)

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** Rocket, Kevin MacLeod (incompetech.com) Licensed under Creative Commons "Attribution 3.0" http://creativecommons.org/licenses/by/3.0/"

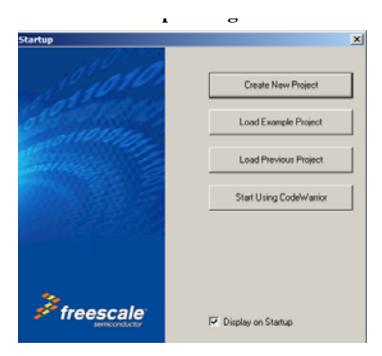
CodeWarrior Stationary Quick Start

This Quick Start explains how to create, build, and run a sample project using the M53015EVB with CodeWarrior.



Create new project

a. Select Start > Programs > Freescale CodeWarrior > CodeWarrior for ColdFire V7.2 > CodeWarrior IDE from task bar. IDE starts and the CodeWarrior Startup dialog box appears



b. Select Create New Project > Device and Connection window appears

Wizard Map	Select the derivative or board you would like to use:	Choose your default connection.
Device and Connection Project Parameters Add Addstonal Files	B: ColdFire V2 ColdFire V3 ColdFire V4 ColdFire V4 ColdFire V4 ColdFire V4 ColdFire V2 ColdFire V2 ColdFire V2 ColdFire V3	Connections P&E USB BDM Multilink Ethernet TAP BDM Remote Conne USB-TAP BDM Remote Connection Instruction Set Simulation P&E USB Cyclone Max P&E TCP-IP Cyclone Max P&E TCP-IP Cyclone Max P&E Serial Cyclone Max
	- M53015FV8 - M5307C3 - M5329EV8 - M5329EV8 - M5329EV8 - M5329EV8 - SoldFire V4 8- ColdFire V4	Creates project for M53015EVB.

c. Select ColdFire Evaluation Boards > ColdFire V3 > M53015EVB

d. Select P&E USB BDM Multilink

e. Click **Next**. **Project Parameters** window appears

Wizard Map	Please choose the set of languages to be	Project name:
Device and Connection	supported initially. You can make multiple selections.	MyProject.mcp
Project Parameters		Location:
Add Additional Files	р с	D: \Projects\WyProject.mcp
C/C++ Options	Г C++	Set
	C language support will be included in the project	
	1	

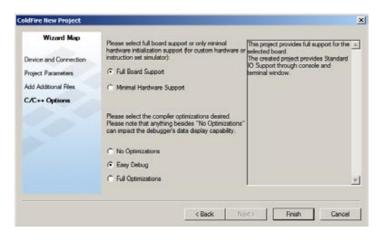
f. Choose C

g. Enter a project name in **Project name** text box. The software automatically creates a folder with the same name in the default location, or click **Set** to browse and select an alternate location for your project

h. Click **Next. Add Additional Files** window appears

Wizard Map	Add existing files to the project	
Device and Connection Project Parameters Add Additional Files C/C++ Options	R Altris	Add Project Files
	Select files to be added to the new project rolder, select "C To copy the added files to the project folder, select "C To have the witzed generate default main c and/or main	opy Files to Project"

i. Click **Next. C/C++ Options** window appears



j. Click **Finish**. Software creates your project according to your specifications



Connect **USB cable** to **J48** and **RS-232 cable** to **J52 connectors** on the board. Ensure **J5** and **J8** jumpers are on **position 1-2**.

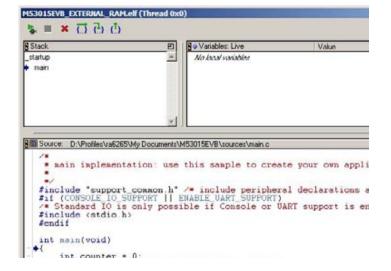


Build and Run Project

a. Select EXTERNAL_RAM

Target; From main menu bar, select **Project > Make** — updates files and links code into application

b. From main menu bar, select **Project > Debug** — builds project, debug window appears



c. Open Terminal Window configured for 19200, 8 bits, no flowcontrol, 1 stop bit

d. From main menu bar, select **Project > Run** — debugger downloads program to board and runs program

e. Terminal Window shows Hello World output

- f. From main menu bar, select Debug
- > Kill debug session ends. You may close all open windows

Congratulations!

You just used CodeWarrior software to create, build and run a simple program.

Learn more at www.freescale.com/coldfire.

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