



Guide for TWR-MCF5225X

TOWER SYSTEM



# MCF5225X

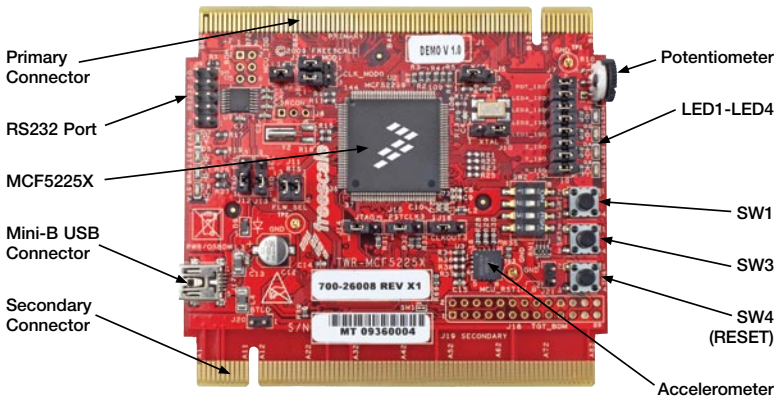
ColdFire® connectivity MCUs







# Get to know the TWR-MCF5225X



## TWR-MCF5225X-KIT Freemove Tower System

The TWR-MCF5225X module is part of the Freemove Tower System, a modular development platform that enables rapid prototyping and total re-use through reconfigurable hardware. Take your design to the next level and begin constructing your Tower System today.

# Step-by-Step Installation Instructions

In this Quick Start Guide, you will learn how to set up the TWR-MCF5225X module and run the default accelerometer demonstration.

STEP  
1

## Install software and tools

- Install CodeWarrior™ Development Studio for ColdFire® Architectures v7.1 or later (Professional Edition—30 day license)\*
- Install CodeWarrior Patch v7.1.2
- Install Freescale MQX™ RTOS v3.4

Install in the order listed. Each of these is included on the DVD. CodeWarrior included offers a 30-day evaluation license. \*Professional Edition is required to run the MQX Lab Tutorials for unrestricted code size and task aware debugging. For updates, please visit [www.freescale.com/tower](http://www.freescale.com/tower).

STEP  
2

## Connect the USB cable

Connect one end of the USB cable to the PC and the other end of the mini-B connector on the TWR-MCF5225X module. Allow the PC to automatically configure the USB drivers if needed.

STEP  
3

## Tilt the board

When the TWR-MCF5225X module is flat, **LED4** blinks slowly. Tilting the board will cause **LED4** to blink faster.

STEP  
4

## Explore further by conducting Lab 1:

### HVAC Controller, Freescale MQX™ RTOS for MCF52259

To run a demonstration using the TWR-MCF5225X, follow the instructions in **Lab 1: HVAC Controller, Freescale MQX RTOS for MCF52259**.

The lab is located in the **TWR-MCF5225X-KIT-LAB** document, located under the Training tab on the DVD.



STEP  
5

## Learn more about the MCF52259

### and MQX software

Read the release notes and the MQX training labs that are located on the DVD and at [www.freescale.com/tower](http://www.freescale.com/tower).

- **Lab 1:** HVAC Controller, Freescale MQX RTOS for MCF52259
- **Lab 2:** USB Functionality, Freescale MQX USB and MFS
- **Lab 3:** Telnet and FTP Operation, Freescale MQX RTCS
- **Lab 4:** Web-Enabled HVAC System, Freescale MQX RTCS
- **Lab 5:** Finding an Error Using Task Aware Debugging (TAD) in CodeWarrior
- **Lab 6:** Ethernet to Serial Bridge, Freescale MQX RTCS

Use **Lab 1** to re-program the board with the default demonstration. These labs require the TWR-SER serial and TWR-ELEV elevator modules.

STEP  
6

## Run simple MQX projects

The included lab tutorials represent completed end applications fully utilizing the microcontroller resources. To begin your application, there are simple MQX templates located under **C:\Program Files\Freescale\Freescale MQX 3.4\mqx\examples**

Please visit [www.freescale.com/tower](http://www.freescale.com/tower) and [www.freescale.com/mqx](http://www.freescale.com/mqx) for the most updated Lab Tutorial, application notes and other documents.



## Jumper Options

The following is a list of all the jumper options. The default installed jumper settings are shown in bold.

Jumper	Option	Setting	Description
J3	Default Clock Mode Selection (CLKMOD1)	<b>1-2</b>	Disable PLL at startup
		2-3	Enable PLL at startup
J4	MCU Power Connection	<b>ON</b>	Supply 3.3V to MCU
		OFF	Isolate MCU from power (connect an ammeter to measure current)
J5	Clock Input Source Selection	<b>1-2</b>	Connect EXTAL to the on-board crystal
		2-3	Connect EXTAL to the CLKIN0 signal on the elevator connector
J6	Default Clock Mode Selection (CLKMOD0)	<b>1-2</b>	Do not use crystal oscillator at startup
		2-3	Use crystal oscillator at startup
J7	Peripheral Selection	<b>1-2</b>	Connect AN3 to Potentiometer
		<b>3-4</b>	Connect TIN3/TOUT3/PWM6 to LED4
		<b>5-6</b>	Connect TIN2/TOUT2/PWM4 to LED3
		<b>7-8</b>	Connect TIN1/TOUT1/PWM2 to LED2
		<b>9-10</b>	Connect TIN0/TOUT0/PWM0 to LED1
		<b>11-12</b>	Connect AN2 to accelerometer Z-access
J10	Default Clock Mode Selection (XTAL)	<b>1-2</b>	Bypass crystal oscillator at startup (if CLKMOD0 = 0)
		<b>2-3</b>	Enable internal relaxation oscillator at startup (if CLKMOD0 = 0)
		OFF	Use crystal oscillator at startup



Jumper	Option	Setting	Description
J11	UART Hardware Flow Control Connections	<b>1-2</b>	Connect CTS0 to the RS232 transceiver for flow control
		<b>3-4</b>	Connect RTS0 to the RS232 transceiver for flow control
J12	UART TXD0 Routing Selection	<b>1-2</b>	Connect TXD0 to the RS232 transceiver
		2-3	Connect TXD0 to the OSBDM debugger interface circuit
J13	UART RXD0 Routing Selection	<b>1-2</b>	Connect RXD0 to the RS232 transceiver
		2-3	Connect RXD0 to the OSBDM debugger interface circuit
J14	BDM/JTAG Enable Selection	<b>1-2</b>	BDM mode
		2-3	JTAG mode
J15	TCLK/PSTCLK Routing Selection	<b>1-2</b>	Connect TCLK/PSTCLK to PSTCLK for BDM mode
		2-3	Connect TCLK/PSTCLK to TCLK for JTAG mode
J16	TCLK/PSTCLK/CLKOUT Routing Selection	<b>1-2</b>	Connect TCLK/PSTCLK/CLKOUT to TCLK/PSTCLK for BDM/JTAG mode
		2-3	Connect TCLK/PSTCLK/CLKOUT to CLKOUT0 on the elevator connector
J20	OSBDM Bootloader Selection	ON	OSBDM bootloader mode (OSBDM firmware reprogramming)
		<b>OFF</b>	Debugger mode
J21	RESET Select	ON	Suspend MCU in reset state (hold RSTIN low)
		<b>OFF</b>	Release RSTIN so it can be controlled by SW4 to initiate reset sequences



Learn more at [www.freescale.com/tower](http://www.freescale.com/tower).

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