



8-, 16- and 32-bit Microcontrollers

# Freescale Tower System

## Modular demonstration and development platform for microcontrollers

### Overview

The Freescale Tower System is a modular development platform for 8-, 16- and 32-bit microcontrollers that enables advanced development through rapid prototyping. Featuring multiple development boards or modules, the Tower System provides designers with building blocks for entry-level to advanced microcontroller development.

### Modular and Expandable

- Controller modules provide easy-to-use, reconfigurable hardware
- Interchangeable peripheral modules—serial, memory and graphical LCD—make customization easy
- Open-source hardware and standardized specifications promote the development of additional modules for added functionality and customization

### Speeds Development Time

- Open source hardware and software allows quick development with proven designs

### The Freescale Tower System

#### Primary Elevator

- Common serial and expansion bus signals
- Two 2x80 connectors on backside for easy signal access and side-mounting board (i.e. LCD module)
- Power regulation circuitry
- Standardized signal assignments

#### Board Connectors

- Four card-edge connectors
- Uses PCI Express® connectors (x16, 90 mm/3.5" long, 164 pins)

#### Peripheral Module

- (i.e. serial, prototype, etc.)

#### MCU/MPU Module

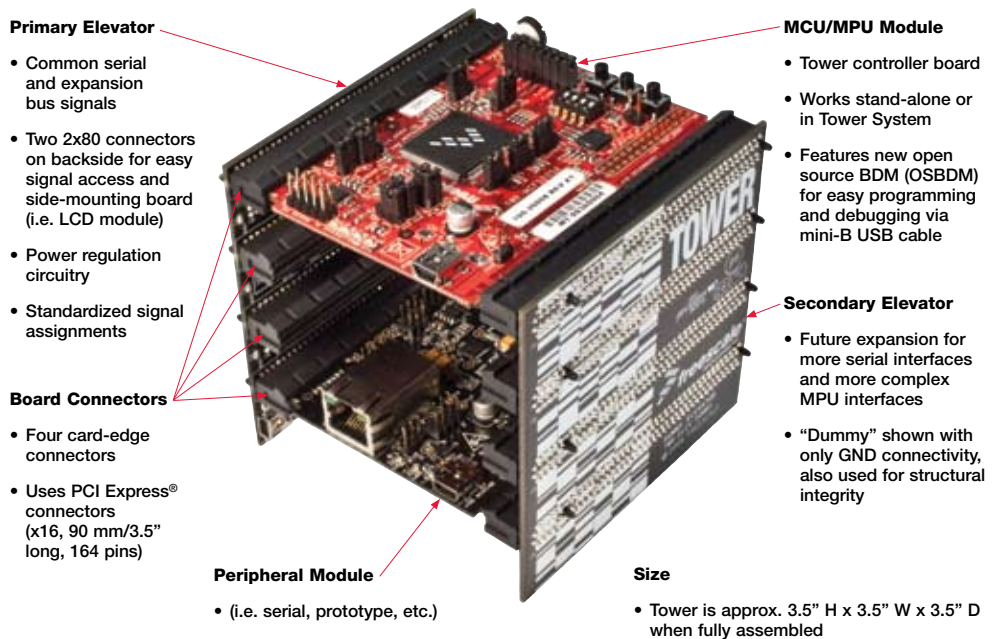
- Tower controller board
- Works stand-alone or in Tower System
- Features new open source BDM (OSBDM) for easy programming and debugging via mini-B USB cable

#### Secondary Elevator

- Future expansion for more serial interfaces and more complex MPU interfaces
- "Dummy" shown with only GND connectivity, also used for structural integrity

#### Size

- Tower is approx. 3.5" H x 3.5" W x 3.5" D when fully assembled



Tower System Modules	
Features	Benefits
<b>Controller Modules (8-, 16-, 32-bit)</b>	
<ul style="list-style-type: none"> <li>Works stand-alone or as part of Tower System</li> </ul>	<ul style="list-style-type: none"> <li>Allows rapid prototyping</li> </ul>
<ul style="list-style-type: none"> <li>Features new open source BDM (OSBDM)</li> </ul>	<ul style="list-style-type: none"> <li>Provides easy programming and debugging via mini-B USB cable</li> </ul>
<b>Peripheral Modules</b>	
<ul style="list-style-type: none"> <li>Can be re-used with all Tower System MCU/MPU modules</li> </ul>	<ul style="list-style-type: none"> <li>Eliminates the need to buy/develop redundant hardware</li> </ul>
<ul style="list-style-type: none"> <li>Interchangeable peripheral modules—serial, memory, graphical LCD, prototyping</li> </ul>	<ul style="list-style-type: none"> <li>Enables advanced development and broad functionality</li> </ul>
<b>Elevator Boards</b>	
<ul style="list-style-type: none"> <li>Two 2x80 connectors</li> </ul>	<ul style="list-style-type: none"> <li>Provides easy signal access and side-mounting board (i.e. LCD module)</li> </ul>
<ul style="list-style-type: none"> <li>Power regulation circuitry</li> </ul>	<ul style="list-style-type: none"> <li>Provides power to all boards</li> </ul>
<ul style="list-style-type: none"> <li>Standardized signal assignments</li> </ul>	<ul style="list-style-type: none"> <li>Allows for customized peripheral module development</li> </ul>
<ul style="list-style-type: none"> <li>Four card-edge connectors available</li> </ul>	<ul style="list-style-type: none"> <li>Allows easy expansion using PCI Express connectors (x16, 90 mm/3.5" long, 164 pins)</li> </ul>

Available Tower System Modules		
Controller Modules	Price	Features
• TWR-MCF51CN	\$39	MCF51CN V1 ColdFire Ethernet module
• TWR-MCF5225X	\$49	MCF5225X V2 ColdFire Connectivity module
• TWR-S08LL64	\$69	MC9S08LL64 8-bit segment LCD module
Peripheral Modules	Resale	Features
• TWR-SER	\$49	Serial module with RS232/RS485, Ethernet, CAN, USB
• TWR-ELEV	\$29	Elevator modules: Functional and Dummy
• TWR-PROTO	\$14.99	Prototyping module
• TWR-LCD	\$99	Graphical LCD module with 3.2" QVGA display
• TWR-MEM	\$89	Memory module with Serial Flash, MRAM, SD Card and Compact Flash interfaces
• TWR-SENSOR-PAK	\$149	Swappable Sensor module with accelerometer, barometer, touch sense controller
Complete Kits	Resale	Includes
• TWR-MCF51CN-KIT	\$99	TWR-MCF51CN, TWR-SER and TWR-ELEV modules
• TWR-MCF5225X-KIT	\$119	TWR-MCF5225X, TWR-SER and TWR-ELEV modules
• TWR-S08LL64-KIT	\$99	TWR-S08LL64, TWR-PROTO and TWR-ELEV modules

### Low Cost

- Peripheral modules can be re-used with all Tower System controller modules, eliminating the need to purchase redundant hardware for future designs
- Enabling technologies like LCD, serial and memory interfacing are offered off-the-shelf at a low cost to provide a customized enablement solution

### Software Enablement and Support

The increasing complexity of industrial applications and expanding functionality of semiconductors are driving embedded developers toward solutions that require the integration of proven hardware and software platforms. Freescale, along with a strong alliance network, offers comprehensive solutions including development tools, debuggers, programmers and software.

### Complimentary Software and Tools

- Freescale MQX RTOS, Ethernet, FileSystem, USB stacks and more
- Freescale Linux® BSP
- CodeWarrior Development Studio
- Processor Expert software: a rapid application development tool in the CodeWarrior tool suite
- Digital Signal Processing Library: provides algorithms optimized for the ColdFire architecture

### Take your design to the next level

For a complete list of development kits and modules offered as part of the Freescale Tower System, please visit [www.freescale.com/tower](http://www.freescale.com/tower).

**Learn More:** For more information about the Freescale Tower System, please visit [www.freescale.com/tower](http://www.freescale.com/tower).