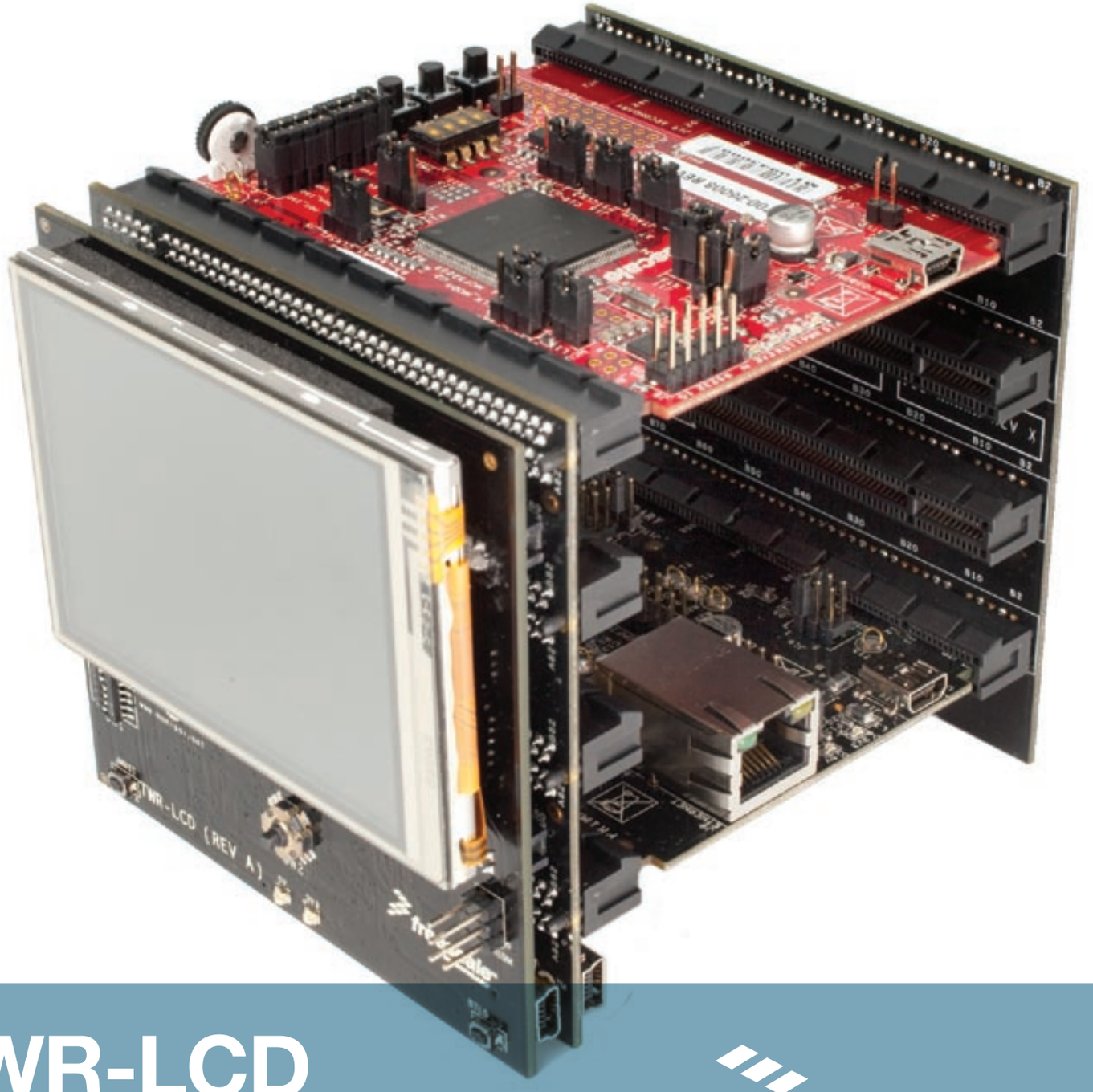
ide for TWR-LCD

TOWER SYSTEM

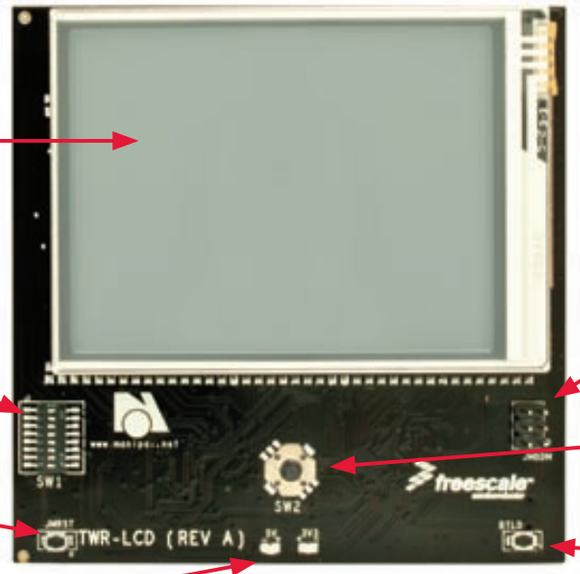


TWR-LCD

Graphical LCD module

freescale™
semiconductor

Get to know the TWR-LCD



3.2” QVGA TFT LCD Display

Configuration Settings (SW1)

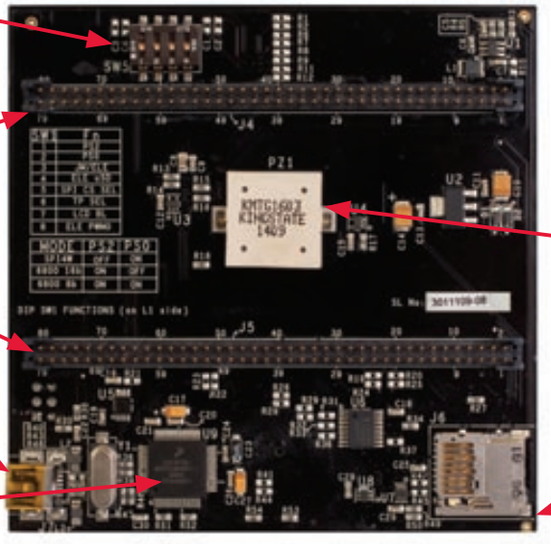
Reset Push Button

Power LEDs

JM128 BDM Header

5-way Navigation Switch

Bootloader Push Button



Touch Panel Isolations Switches (SW5)

A Side Expansion Port

B Side Expansion Port

Mini-B USB Connector

MCF51JM128

Piezo Buzzer

microSD Card Slot

How to attach the TWR-LCD module

STEP 1 **Locate the “functional” Elevator in the assembled Tower Kit.**

Note: Once the TWR-LCD module is affixed to the “functional” Elevator, it will be difficult to remove. Removal of the TWR-LCD module is not recommended.

STEP 2 **Press the expansion connectors on the back of the TWR-LCD module onto the the matching Side Expansion Port connectors found on the outer side of the “functional” Elevator.**

STEP 3 **Proceed to the “How to build your Tower” section to complete the assembly of your Freescale Tower System.**

How to build your Tower

STEP 1 Locate the Elevator modules, identifiable by the four card edge connectors on each.

STEP 2 Identify each Elevator module as either “functional” or “dummy” (written on the outward facing side of the board).

STEP 3 Locate the other modules you will use in your Tower System.

STEP 4 Identify the “primary” and “secondary” card edges for each module (written along the edge).

STEP 5 Plug the “primary” card edge of each module into the “functional” Elevator.

STEP 6 Place the remaining “dummy” or “functional” Elevator module onto the “secondary” card edges.

TWR-LCD
Freescale Tower System

The TWR-LCD module is part of the Freescale Tower System, a modular development platform that enables rapid prototyping and tool 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-LCD module and run the default GUI demonstration.

Install software and tools

- Install CodeWarrior™ Development Studio for Microcontrollers v6.3 from the included DVD.

Connect the USB cable

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

Follow the on-screen menu

Explore the features of the GUI demo, by selecting the menu items with the touch enabled screen.

Explore additional resources

Explore the additional documentation and software resources on the included DVD and at **www.freescale.com/towerlcd**.

TWR-LCD Jumper Options

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

Configuration Settings		Option	Setting		Description
SW1	DIP 1/ DIP 2	PS2/PS0	**DIP 1** (PS2)	**DIP 2** (PS0)	
			OFF	OFF	Not a valid setting
			OFF	***ON***	Enables SPI communication mode to the LCD Display. Can be driven by SPI0 on the Primary Elevator or by the on-board MCF51JM, selectable by JM/ELE (SW1-DIP3)
			ON	OFF	Enables EBI (16-bit mode) communication to the LCD Display This interface is only accessible from the Tower Elevator MCU
			ON	ON	Enables EBI (8-bit mode) communication to the LCD Display This interface is only accessible from the Tower Elevator MCU
	DIP 3	JM/ELE	ON		Enables SPI connection from SPI0 of Primary Elevator Connector
			OFF		Enables SPI connection from on-board MCF51JM MCU
	DIP 4	ELE uSD	ON		microSD is connected to the SPI1 of Primary Elevator Connector
			OFF		microSD is connected to the on-board MCF51JM MCU
	DIP 5	SPI CS SEL	ON		Select SPI0 CS1 as the chip-select for LCD SPI interface
			OFF		Select SPI0 CS0 as the chip-select for LCD SPI interface
	DIP 6	TP SEL	ON		Disables MCF51JM connection to the LCD Touch Panel Use SW5 to enable ADC connection from Primary Elevator Connector
			OFF		Enables MCF51JM connection to the LCD Touch Panel Ensure that SW5 DIP[4:1] are OFF
	DIP 7	LCD BL	***ON***		Enables LCD Backlight
			OFF		Disables LCD Backlight
	DIP 8	ELE PWM0	ON		Piezo buzzer is controlled by PWM0 of Primary Elevator Connector and on-board MCF51JM
			OFF		Piezo buzzer is controlled by on-board MCF51JM only

SW2	5-way Nav	5-way Navigation Switch	North (Up)	Indicates North signal to onboard MCU
			East (Right)	Indicates East signal to onboard MCU
			South (Down)	Indicates South signal to onboard MCU
			West (Left)	Indicates West signal to onboard MCU
			Center (Enter)	Indicates Center signal to onboard MCU
SW5	DIP 1	Touch Panel Isolation (XPLS)	ON	Connects AN4 of Primary Elevator Connector to XPLS Touch Panel Signal
			OFF	Disconnects AN4 from Touch Panel
	DIP 2	Touch Panel Isolation (XMNS)	ON	Connects AN5 of Primary Elevator Connector to XMNS Touch Panel Signal
			OFF	Disconnects AN5 from Touch Panel
	DIP 3	Touch Panel Isolation (YMNS)	ON	Connects AN6 of Primary Elevator Connector to YMNS Touch Panel Signal
			OFF	Disconnects AN6 from Touch Panel
	DIP 4	Touch Panel Isolation (YPLS)	ON	Connects AN7 of Primary Elevator Connector to YPLS Touch Panel Signal
			OFF	Disconnects AN7 from Touch Panel

TWR-LCD features

- 3.2” QVGA TFT LCD Display with Touch Sensitive Overlay
- Dedicated MCF51JM microcontroller
- Exandable to additional Tower MCUs over EBI or SPI
- microSD card for memory expansion
- Piezo buzzer for audible feedback

To learn more about the TWR-LCD and other modules within the Tower System, go to **www.freescale.com/tower**. To become a member of the online Tower Geeks community, go to **www.towergeeks.org**.

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