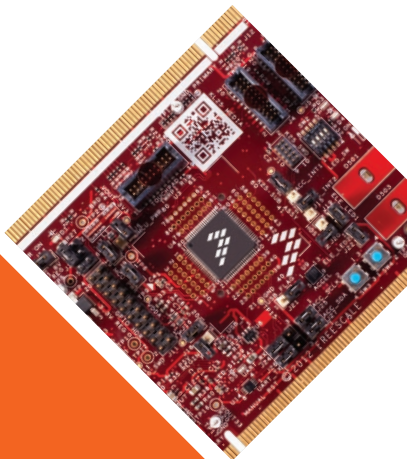




# TWR-KL25Z48M Quick Start Guide

Development Kit for Kinetis  
KL2/1 MCU Families

Tower System  
Development Board  
Platform



## Get to know the TWR-KL25Z48M

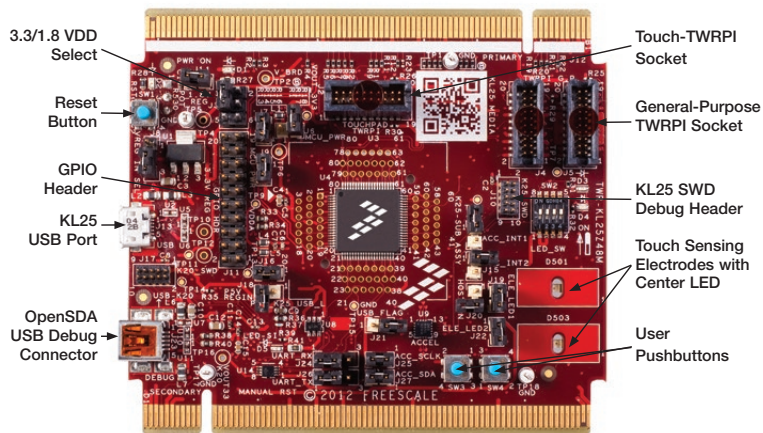


Figure 1: Front side of TWR-KL25Z48M board

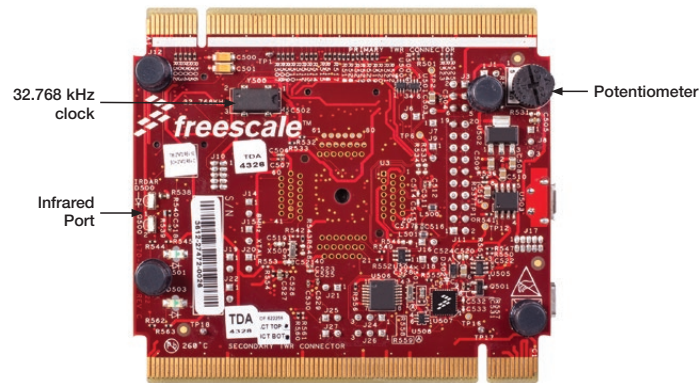


Figure 2: Back side of TWR-KL25Z48M board



### TWR-KL25Z48M

#### Freescale Tower System Development Board Platform

The TWR-KL25Z48M board is designed to work either in standalone mode or as part of the Freescale Tower System, a modular development board 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 evaluation board platform today by visiting [freescale.com/Tower](http://freescale.com/Tower) for additional Tower System boards and compatible peripherals.

## Features

- Tower System-compatible board
- MKL25Z128VLK4 MCU (48 MHz, 128 KB flash, 16 KB RAM, low power, 80 LQFP package)
- Tower System-compatible board
- Dual role USB interface with Micro-AB USB connector
- Touch Tower plug-in socket
- General-purpose Tower plug-in (TWRPI) socket
- Onboard debug circuit MK20D50 OpenSDA with virtual serial port
- Three axis accelerometer (MMA8451Q)
- Four (4) user-controllable LEDs
- Two (2) capacitive touchpads

- Two (2) user pushbuttons switch
- Infrared transmit and receive
- Potentiometer
- General-purpose pin header to directly access MCU signals

## Tools

- Freescale CodeWarrior Development Studio for Microcontrollers V10.3 (CW-MCU10)
- IAR EWARM V6.40
- Processor Expert software configuration tool with MQX™ Lite RTOS integration available for CodeWarrior IDE or a standalone for integrating generated code into other IDEs

## Step-by-Step Installation Instructions

1

### Download Software and Tools

Download installation software and documentation under “**Jump Start Your Design**” at [freescale.com/TWR-KL25Z48M](http://freescale.com/TWR-KL25Z48M).



2

### Install Software and Tools

Install the OpenSDA Tower Toolkit to install the OpenSDA and USB-to-Serial drivers.

3

### Configure the Hardware

Connect one end of the USB cable to the PC and the other end to the Power/OpenSDA mini-B connector on the TWR-KL25Z48 board. Allow the PC to automatically configure the USB drivers if needed.

4

### Touch Electrodes

Touch the pads and the LEDs will turn on.

5

### Tilt the Board

When board is picked up, the four LEDs will toggle in the direction of the inclination. Toggling frequency will increase as the tilt angle increases.

6

### Move the Potentiometer

The TWR-KL25Z48M LED will blink at a frequency proportional to the resistance of the potentiometer.

7

### Explore Further

Explore Kinetis KL2/1 MCU ultra-low-power modes and USB communication by conducting the additional labs located at [freescale.com/TWR-KL25Z48M](http://freescale.com/TWR-KL25Z48M).

## I VWR-KL25Z48M Jumper Options

The following is a list of all the jumper options. The default installed jumper settings are listed in the last column.

Jumper	Jumper Designator	Signal	Default Option
V_BRD	J7	X-V_BRD X	<b>DEF: 1-2 VBRD to MCU_PWR</b>
	J9	VDDA_HDR	<b>DEF: 1-2 VDDA to MCU_PWR</b>
VREG IN Selector	J8	VREG IN SELECTOR	<b>DEF: 1-2 Regulator powered by OpenSDA USB</b>
Board Power Selection	J3	Board Power Selection	<b>DEF: 1-3 P3.3V_REG powers V_BRD (MCU_PWR)</b>
USB	J18	KL25 USB VREGIN	<b>DEF: OPEN</b>
	J20	K25 USB ENA	<b>DEF: OPEN</b>
	J21	K25 USB FLGA	<b>DEF: OPEN</b>
Infra-Red	SW2 6-3	IRDAJ-X	<b>OPEN</b>
	SW2 5-4	CMPO_IN0	<b>OPEN</b>
Potentiometer	J1	POT 5K	<b>DEF: 1-2</b>

Jumper	Jumper Designator	Signal	Default Option
Accelerometer	J27	SDA Accelerometer Enable	<b>DEF: 1-2</b>
	J25	SCL Accelerometer Enable	<b>DEF: 1-2</b>
	J14	ACCELEROMETER INT1	<b>DEF: OPEN</b>
	J15	ACCELEROMETER INT2	<b>DEF: OPEN</b>
LEDs	J19	LED Orange Enable	<b>DEF: 1-2</b>
	J22	LED Yellow Enable	<b>DEF: 1-2</b>
	SW2 8-1	LED Green Enable	<b>OPEN</b>
	SW2 7-1	LED Red Enable	<b>OPEN</b>
UART	J24	KL25 UART RX (OpenSDA or Elevator)	<b>OPEN</b>
	J26	KL25 UART TX (OpenSDA or Elevator)	<b>DEF: 2-3</b>
Potentiometer	J1	POT 5K	<b>DEF: 2-3</b>



## et Started



Download installation software and documentation under  
“**Jump Start Your Design**” at [freescale.com/TWR-KL25Z48M](http://freescale.com/TWR-KL25Z48M).

## Support

Visit [freescale.com/support](http://freescale.com/support) for a list of phone numbers within your region.

## Warranty

Visit [freescale.com/warranty](http://freescale.com/warranty) for complete warranty information.

For more information, visit [freescale.com/Tower](http://freescale.com/Tower)  
Join the online Tower community at [towergeeks.org](http://towergeeks.org)

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