



TWR-K40X256

Low-power MCU with
USB and segment LCD



Get to Know the TWR-K40X256



Figure 1: Front Side of TWR-K40X256 Module Not Including TWRPI.



TWR-K40X256

The TWR-K40X256 microcontroller 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 by visiting freescale.com/tower for additional Tower System microcontroller modules and compatible peripherals.



Figure 2: Front Side of TWR-K40X256 Module with TWRPI-SLCD Attached.



Figure 3: Back Side of TWR-K40X256 Module.

Step-by-Step Installation Instructions

In this Quick Start Guide, you will learn how to set up the TWR-K40X256 module and run the default demonstration.

STEP
1

Install the Software and Tools

Install the P&E Micro Kinetis Tower Toolkit to install the OSJTAG and USB-to-Serial drivers. These can be found on the DVD under Software.

STEP
2

Configure the Hardware

Install the included battery into the VBAT (RTC) battery holder. Then plug in the included Segment LCD Tower Plug-In (TWRPI-SLCD) into the Touch/SLCD TWRPI socket. Finally, connect one end of the USB cable to the PC and the other end to the Power/OSJTAG mini-B connector on the TWR-K40X256 module. Allow the PC to automatically configure the USB drivers if needed.

STEP
3

Tilt the Board

Tilt the board side to side to see the LEDs on E1-E4 light up as it is tilted.

STEP
4

Navigate the Segment LCD

The Segment LCD will come up displaying the seconds elapsed since boot-up. Press **SW4** to toggle between viewing the seconds, hours and minutes, potentiometer percent, and temperature.

**STEP
5**

Explore Further by Conducting Lab 1: TWR-K40X256 Quick Start Demo

Explore all the features and capabilities of the pre-programmed demo by reviewing the lab document located at freescale.com/TWR-K40X256.

**STEP
6**

Learn More About the Kinetis K40 Microcontrollers

Find more MQX and bare-metal labs and software for the Kinetis K40 microcontrollers at freescale.com/TWR-K40X256.

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
J11	MCU Power Connection	ON	Connect on-board 3.3V supply to MCU
		OFF	Isolate MCU from power (connect an ammeter to measure current)
J12	VBAT Power Selection	1-2	Connect VBAT to on-board 3.3V supply
		2-3	Connect VBAT to the higher voltage between on-board 3.3V supply or coin-cell supply
J13	OSJTAG Bootloader Selection	ON	OSJTAG bootloader mode (OSJTAG firmware reprogramming)
		OFF	Debugger mode
J15	JTAG Board Power Connection	ON	Connect on-board 5V supply to JTAG port (supports powering board from JTAG pod supporting 5V supply output)
		OFF	Disconnect on-board 5V supply to JTAG port

Jumper	Option	Setting	Description
J6	IR Transmitter Connection	ON	Connect PTD7/CMT_IRO to IR Transmitter (D507)
		OFF	Disconnect PTD7/CMT_IRO from IR Transmitter (D507)
J3	VREGIN Power Connection	ON	Connect USB0_VBUS from Elevator to VREGIN
		OFF	Disconnect USB0_VBUS from Elevator to VREGIN
J5	FlexBus Address Latch Selection	1-2	FlexBus address latch disabled
		2-3	FlexBus address latch enabled

To learn more about the **TWR-K40X256** and other Freescale Kinetis microcontroller products, please visit freescale.com/TWR-K40X256, freescale.com/Kinetis and freescale.com/Tower.

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POLYPOD-BGA324 POLYPOD-TQ144

POLYPOD-TQ176

KEA128LEDLIGHTRD

KIT_XMC42_EE1_001 SAFETI-HSK-

RM48 LS1024A-RDB ADM00573

FRDM-KL28Z PICOHOBBITFL

MCIMX53-START-R TWR-K65F180M

KEA128BLDCRD YR0K77210S009BE

CC-ACC-MMK-2443 STM8L1528-EVAL

YSPKS5D9E10 YGRPEACHFULL TWR-

MC-FRDMKE02Z TWR-K80F150M

CY14NVS RAMKIT-001

EVALSPEAR320CPU EVB-DBSUB1586

EVB-SCMIMX6SX MAXWSNENV#

FM0-64L-S6E1C3 MAX32600-KIT#

TMDX570LS04HDK Z32F3840100KITG

LS1021A-IOT-B LSG T676 SK-FM3-

100PMC-MB9BF516N TXSD-SV70

YSTBS3A3E10 YR8A77430HA02BG

STM3240G-USB/NMF OM13080UL

EVAL-ADUC7120QSPZ CYDP-KIT-
13638 OM13082UL OM13063UL
ATAVRPARROT OM13090UL
YSPEHMI1S20 TXSD-SV71
YGRPEACHNORMAL