Quick Start Guide

TWR-KE18F

32-bit Kinetis® MCU based on ARM® Cortex®-M4 provides up to 168 MHz CPU performance, up to 512 KB flash with 64 KB SRAM

TOWER DEVELOPMENT PLATFORM

NXP

GET TO KNOW THE TWR-KE18F BOARD

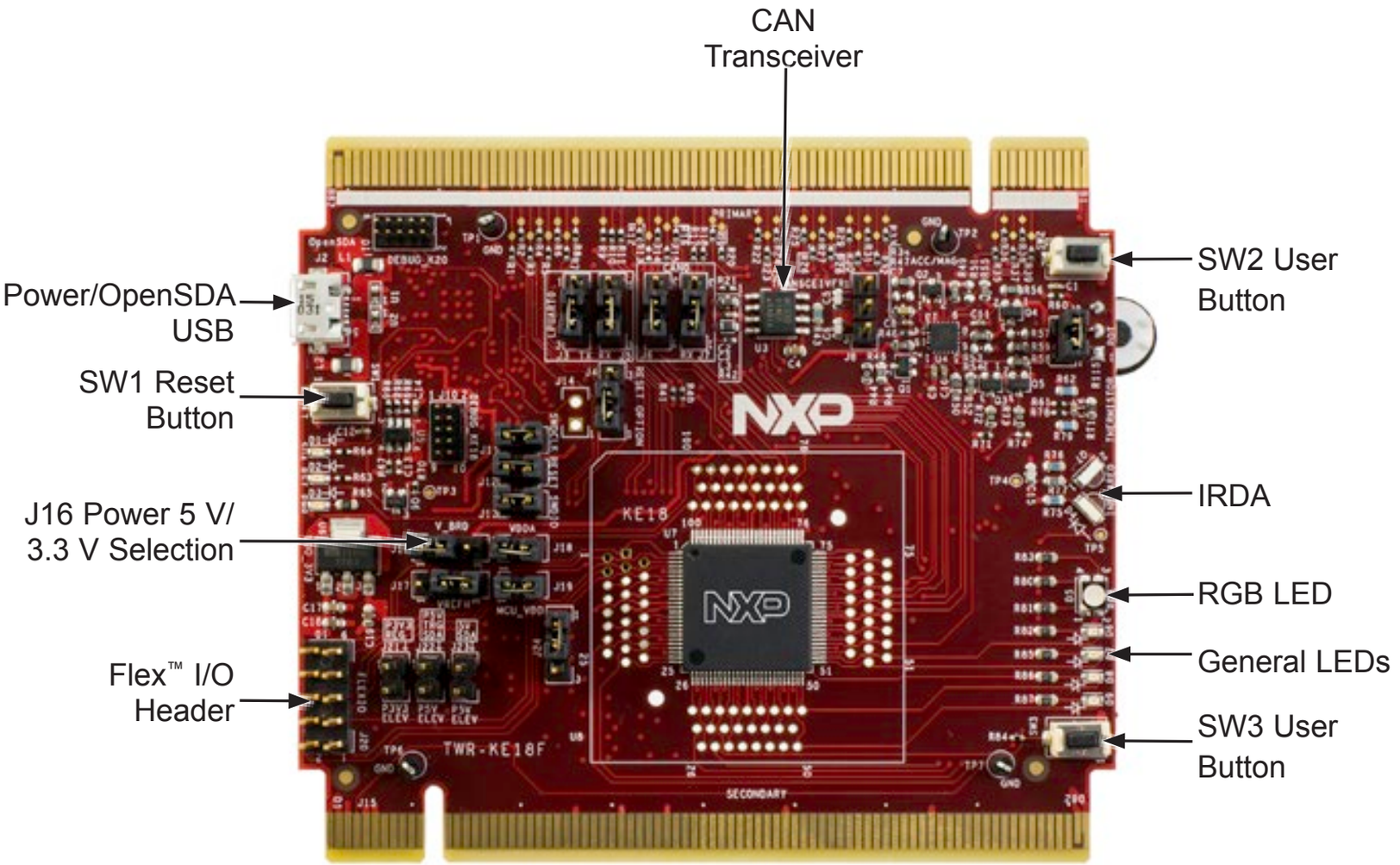


Figure 1: Front Side of TWR-KE18F

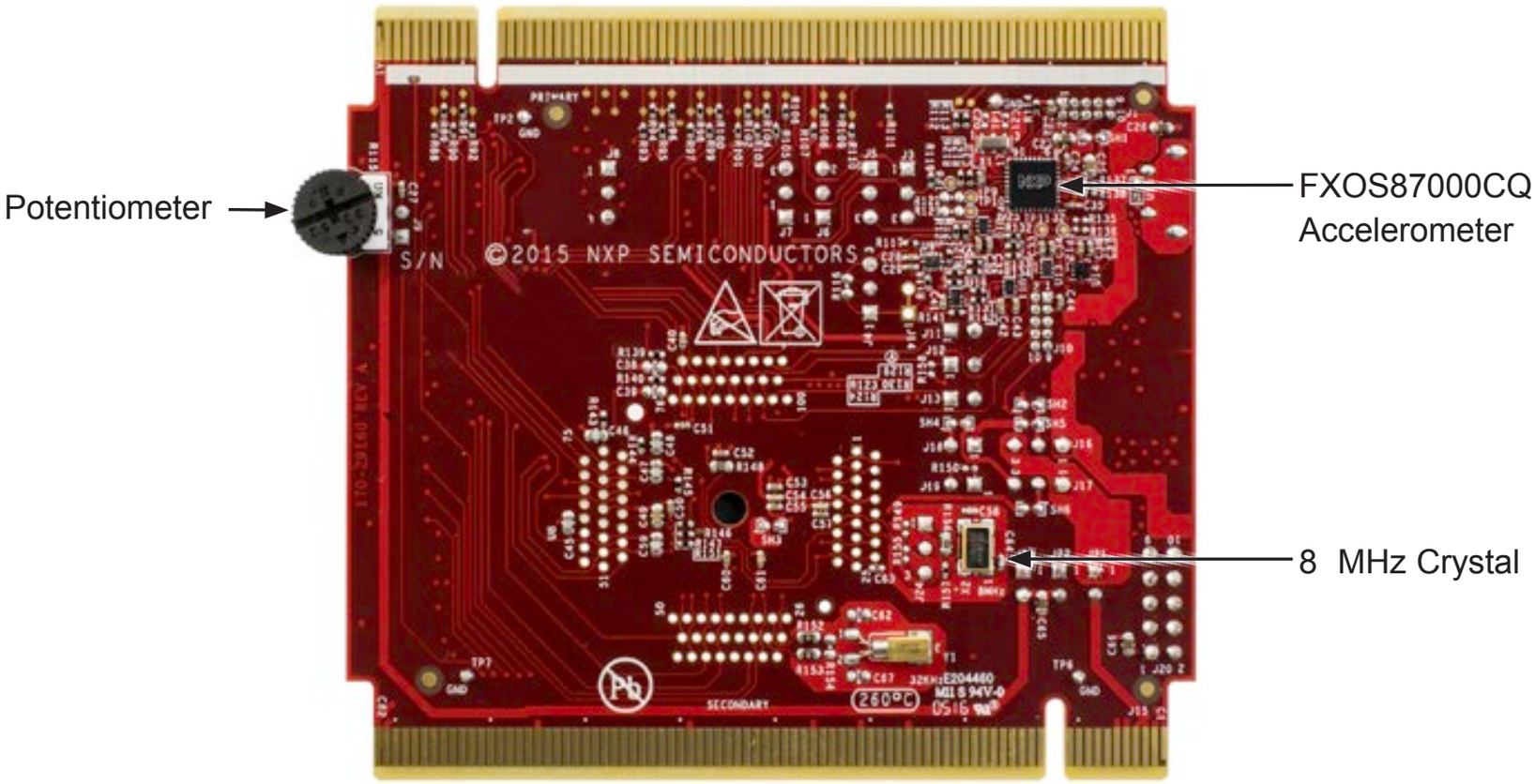


Figure 2: Back Side of TWR-KE18F

TWR-KE18F NXP® TOWER® SYSTEM

The TWR-KE18F MCU module is designed to work either in standalone mode or as part of the NXP Tower System, a modular development platform that enables rapid prototyping and tool re-use through reconfigurable hardware. Begin constructing your Tower System today by visiting **www.nxp.com/Tower** for additional Tower System MCU modules and compatible peripherals.

TWR-KE18F FEATURES

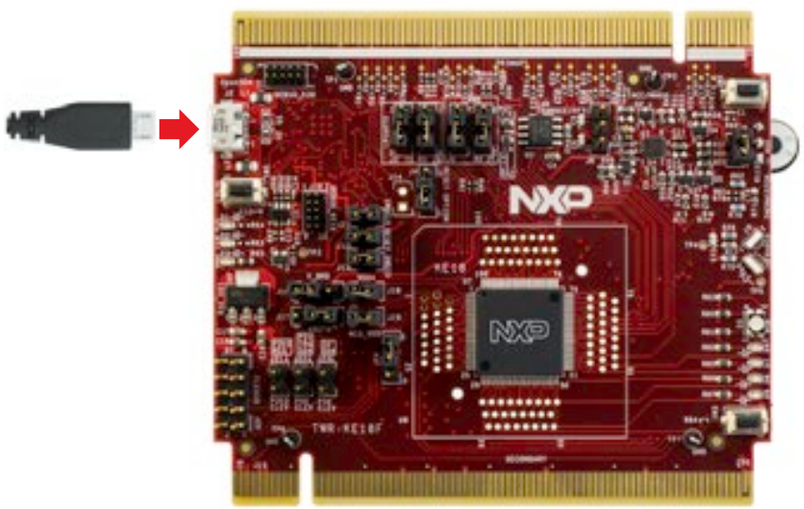
- MKE18F512VLL16 MCU (168 MHz core clock, 512 KB flash, 64 KB RAM, 100 LQFP package)
- Tower-compatible processor board
- Onboard debug circuit: K20DX128VFM5 (OpenSDA) with virtual serial port
- Four user-controlled status LEDs and one RGB LED
- Two mechanical push buttons and one reset button
- I/O headers for easy access to MCU I/O pins
- Thermistors and potentiometer
- FXOS8700CQ 3D accelerometer + 3D magnetometer
- Board power select with 3.3 V or 5 V MCU operation
- Infrared port communication
- CAN transceiver
- Flex™ I/O header

STEP-BY-STEP INSTRUCTIONS

In this Quick Start Guide, you will learn how to set up the TWR-KE18F board and run the included demonstrated software. For more detailed information, review the user manual at **www.nxp.com/TWR-KE18F**.

1 Configure the hardware

Connect one end of the USB cable to the PC and the other end to the Power/ OpenSDA micro-B connector on the TWR-KE18F board. Allow the PC to automatically configure the USB drivers if needed.



2 Run the Quick Start demo

The RGB LED on the board, D5 will gradually illuminate as the board is tilted. When rotated around the accelerometer's x-axis the red LED will illuminate. Similarly, the green LED will gradually illuminate as rotated around the y-axis.

3 Download Software

Download installation software and documentation under **"Jump Start Your Design"** at **www.nxp.com/TWR-KE18F**.

TWR-KE18F JUMPER OPTIONS

JUMPER	OPTION	SETTING	DESCRIPTION
J3	UART TX selection	1–2	Connect to Elevator UART TX
		2–3	Connect to OpenSDA UART TX
J4	Reset selection	1–2	Connect OpenSDA reset to MCU
		2–3	Connect pin reset to MCU directly, when OpenSDA is not powered
J5	UART RX selection	1–2	Connect to Elevator UART RX
		2–3	Connect to OpenSDA UART RX
J6	CAN TX Selection	1–2	Connect CAN transceiver to MCU CAN0 TX pin directly
		2–3	Connect CAN transceiver to Elevator CAN TX
J7	CAN RX Selection	1–2	Connect CAN transceiver to MCU CAN0 RX pin directly
		2–3	Connect CAN transceiver to Elevator CAN RX
J8	CAN transceiver connection	OFF	No connection with external board
J9	POTENTIOMETER enable	ON	Enable potentiometer
		OFF	Disable potentiometer

TWR-KE18F JUMPER OPTIONS (CONT.)

JUMPER	OPTION	SETTING	DESCRIPTION
J11	OpenSDA SWD CLK connection	ON	Connect SWD_CLK to OpenSDA circuit
		OFF	Disconnect SWD_CLK to OpenSDA circuit
J12	OpenSDA SWD DIO connection	ON	Connect SWD_DIO to OpenSDA circuit
		OFF	Disconnect SWD_DIO to OpenSDA circuit
J13	Reset connection	ON	Connect reset signal to MCU pin
		OFF	Disconnect reset signal to MCU pin
J16	Board power supply selection	1–2	Board voltage V_BRD power from OpenSDA USB, 5 V
		2–3	Board voltage V_BRD power from regulator, 3.3 V
J17	Upper reference voltage V_{REFH} selection	1–2	V_{REFH} from 3.3 V regulator
		2–3	V_{REFH} from V_{DDA}
J18	Analog circuits power V_{DDA} connection	ON	Connect V_{DDA} to board power V_BRD
		OFF	Disconnect V_{DDA} to board power V_BRD
J19	MCU digital power connection	ON	Connect MCU_VDD to board power V_BRD
		OFF	Disconnect MCU_VDD to board power V_BRD

TWR-KE18F JUMPER OPTIONS (CONT.)

JUMPER	OPTION	SETTING	DESCRIPTION
J21	Elevator 3.3 V connection	ON	Connect 3.3 V regulator output to TWR elevator
		OFF	Disconnect 3.3 V regulator output to TWR elevator
J22	Elevator 5 V connection	ON	Connect 5 V USB power switch output to TWR elevator
		OFF	Disconnect 5 V USB power switch output to TWR elevator
J23	Elevator 5 V connection	ON	Connect 5 V OpenSDA input to TWR elevator
		OFF	Disconnect 5 V OpenSDA input to TWR elevator
J24	External clock selection	1–2	External 8 MHz crystal input
		2–3	External oscillator input to EXTAL pin directly

SUPPORT

Visit **www.nxp.com/support** for a list of phone numbers within your region.

WARRANTY

Visit **www.nxp.com/warranty** for complete warranty information.

Get Started

Download installation software and documentation under **"Jump Start Your Design"** at **www.nxp.com/TWR-KE18F**.

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