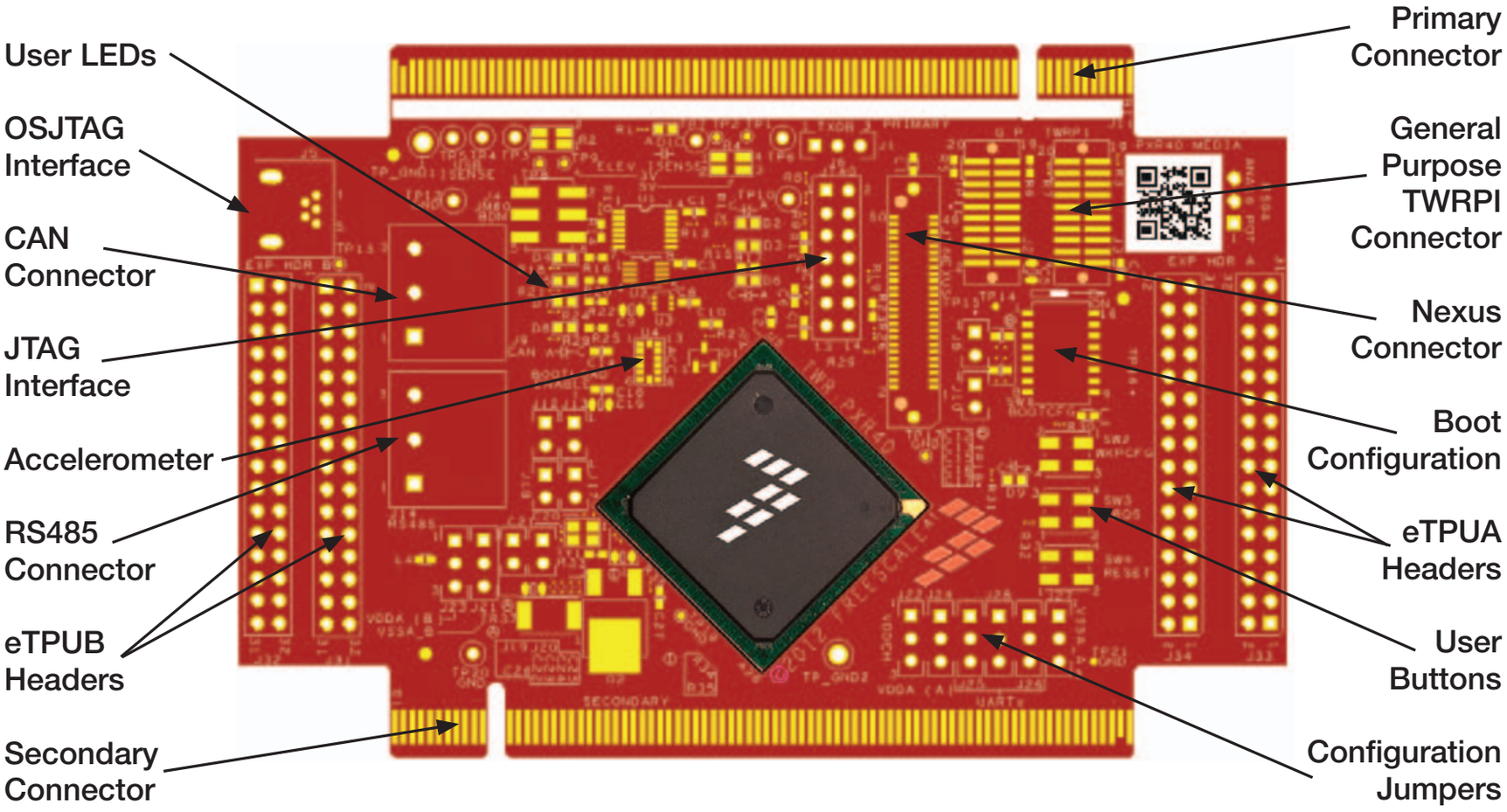
Quick Start Guide

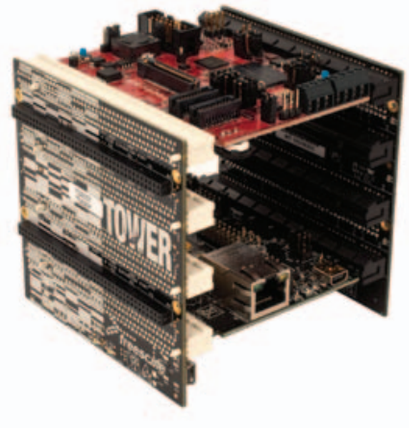
TWR-PXR40

32-bit Power Architecture® MCU for
High-Performance Real-Time Applications

freescale™

Get to Know the TWR-PXR40





TWR-PXR40

Freescale Tower System

The TWR-PXR40 module is part of the Freescale Tower System portfolio, a modular development platform that enables rapid prototyping and tool re-use through reconfigurable hardware.

TWR-PXR40 Features

- MPXR4040VVU264 MCU (Up to 264 MHz 32-bit e200z7 core, up to 4 MB on-chip flash with flash controller, dual eTPU module, 256K SRAM)
- Easy access to eTPU modules using the trough-hole expansion connector
- MC9S08JM60 open source JTAG (OSJTAG) circuit
- General-purpose TWRPI socket (Tower plug-in module)
- On-board CAN transceiver
- On-board RS485 half duplex transceiver
- Four LEDs for user interface
- Two mechanical push buttons for user interface
- One potentiometer for ADC testing

Step-by-Step Installation Instructions

In this quick start guide, you will learn how to set up the TWR-PXR40 module and run the included demonstration software. For more detailed information, please see the user manual found on the included DVD or at **freescale.com/TWR-PXR40**.

1 Connecting the TWR-SER

Insert the TWR-PXR40 and TWR-SER boards into the primary and secondary elevator board. The “primary” and “secondary” cards for each module are indicated along the card edges.

2 Powering Up the TWR-PXR40

Connect the TWR-PXR40 board to a computer or a wall charger using the provided USB cable. Additionally, the USB connector on the primary elevator or OSJTAG connector can be used to power up the board.

3 Using the Serial to USB Bridge

The MC9S08JM60 serial to USB bridge solution provides an RS-232 equivalent connection to the host computer through the USB communications device class. When plugged in and powered, the USB connection will enumerate as a COM port on the PC. To determine the COM port number for the connection, right click on the My Computer icon and select “Manage,” click Device Manager, find and expand ports (COM and LPT).

4 Installing the Software Driver

When the cable is plugged in for the first time, then Found New Hardware Wizard will start. Select the option Install from a

Note: For Windows XP 64 bit users please connect DB9 connector to the TWR-SER card.

list or specific location (Advanced), then select “Next.” Select the CDC Virtual Serial Port Folder which is available on the DVD or at **freescale.com/TWR-PXR40**. The Wizard will find the updated driver within the folder and install it.

5 Installing and Using FreeMASTER

Install FreeMASTER (FMASTERSW.exe) which is available on the DVD or at **freescale.com/freemaster**. Open the FreeMASTER file “Demo-TWR-PXR40.pmp.” Go to the menu “project” and select “options,” set the communication to use the COM port from step 4 and the speed to 115200.

6 Running Demonstration Code

Press the RESET button on the board, on FreeMASTER deselect the “stop” button, and select “demo scope,” the chart will appear showing the accelerometer values, move the board to see the values changing. Rotate the potentiometer to see the value on the watch-grid. Press the buttons to see the status on the watch-grid. Change the value of the Ledx to “1” to turn it on.

Additional Software and Tools

- MQX™ Real-Time OS
- ASHWARE eTPU Simulator
- BYTECRAFT Code Development System for eTPU
- Green Hills Software MULTI IDE
- Serial Bootloader Utility
- CodeWarrior V10.x Eclipse Development Studio
- OSJTAG Virtual Serial Port Using USB
- Rapid application Initialization and Documentation Tool (RAppID)
- FreeMASTER Runtime Debugging Tool

TWR-PXR40 Jumper Options

The following is a list of all jumper options. The default installed jumper settings are shown in white text within the blue boxes and the default function in **bold**.

General Jumper Configuration

Jumper	Function
J8	Enable/Disable potentiometer
J10	Enable/Disable SW2
J19	Enable/Disable SW3
J12	Enable/Disable on-board CAN transceiver terminator resistor
J20	Enable/Disable on-board RS485 half duplex transceiver terminator resistor
J17	Enable/Disable RS485 half duplex control lines
J18	Enable/Disable RS485 half duplex control lines
J13	Enable/Disable OSJTAG interface bootloader mode

UART Configuration

Jumper	Position	Function
J25	1-2	UART_A RX is connected to RS485 transceiver
	2-3	UART_A RX is connected to UART0_RX on primary elevator
J28	1-2	UART_A TX is connected to RS485 transceiver
	2-3	UART_A TX is connected to UART0_TX on primary elevator
J26	1-2	UART_B RX is connected to OSJTAG
	2-3	UART_B RX is connected to UART1_RX on primary elevator
J1	1-2	UART_B TX is connected to OSJTAG
	2-3	UART_B TX is connected to UART1_TX on primary elevator

ADC-VREF Configuration

Jumper	Position	Function
J24	1-2	ADC_A VREF_H is connected to VDDA on board
	2-3	ADC_A VREF_H is connected to VDDA on Header_A
J27	1-2	ADC_A VREF_L is connected to VSSA on board
	2-3	ADC_A VREF_L is connected to VSSA on Header_A
J23	1-2	ADC_B VREF_H is connected to VDDA on board
	2-3	ADC_B VREF_H is connected to VDDA on Header_B
J21	1-2	ADC_B VREF_L is connected to VSSA on board
	2-3	ADC_B VREF_L is connected to VSSA on Header_B

I/O Pins Voltage Supply

Jumper	Position	Function
J22	1-2	I/O pins (VDDEHx) connected to 5V
	2-3	I/O pins (VDDEHx) connected to 3.3V

Visit **freescale.com/TWR-PXR40** for the latest information on the TWR-PXR40 module, including:

- Board database: Schematics, layout and BOM
- User manual
- Quick start guide
- Software BSPs and CodeWarrior Development Studio
- Demos and tutorial
- Fact sheet

Support

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

Warranty

Visit **freescale.com/warranty** for complete warranty information.

For more information, visit freescale.com/Tower

Join the online Tower community at towergeeks.org

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