Quick Start Guide

TWR-S12G64
Scalable Platform for
Automotive Applications

freescale

Get to Know the TWR-S12G64

Secondary Connector

CAN Connector

I/O Ring to Allow Access to All MCU Pin Signals

LIN Connectors

Primary Connector

On-Board OSBDM

12 V Barrel Connector for External Power

Serial Port (DB9 converter cable included)

LEDs

Two Potentiometers

Pushbuttons
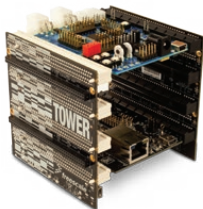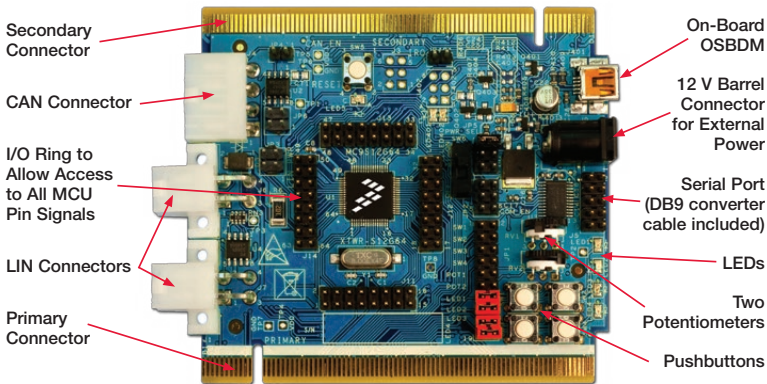
TWR-S12G64
Freescale Tower System

The TWR-S12G64 module is a single-board computer as well as part of the Freescale Tower System, a modular development platform that enables rapid prototyping and tool re-use through reconfigurable hardware. Elevate your design to the next level and begin constructing your Tower System today.

TWR-S12G64 Features

- S12G64 microcontroller (48-pin LQFP)

- On-board JTAG connection via open source OSBDM circuit using the MPC9S08JM microcontroller

  ○ Visit **pemicro.com/osbdm** for source code

- High-speed CAN interface

- LIN interface

- Potentiometer with LP filter

- LED indicators

- RS-232 serial communication interface

Step-by-Step Installation Instructions

In this quick start guide, you will learn how to set up the
TWR-S12G64 board and run the default exercise.

1 Install Software and Tools

• Install CodeWarrior Development
  Studio for S12 V5.1 or later

• Install CodeWarrior service pack
  for S12G64

• Install CodeWarrior service pack for
  S12G Processor Expert support

A 30-day evaluation license of CodeWarrior is
included on the DVD for your convenience. For
updates, please visit **freescale.com/TWR-S12G64.**

2 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-S12G64
board. Allow the PC to automatically
configure the USB drivers if needed.
Verify JP4 has a jumper installed to
connect three and four pins.

3 Connect the UART Cable

Connect DB9 cable adapter to J11 and attach to PC's serial port (requires HyperTerminal to monitor TWR-S12G64 demo communications: 9600 BR, 8-bit, no parity, one stop bit, no HW control), verify two jumpers are installed at JP6 connecting 3-5 and 4-6. Verify 10 jumpers are installed at JP7 connecting 1-2, 3-4, 5-6, 7-8, 9-10, 11-12, 13-14, 15-16, 17-18 and 19-20.

4 Using the Example Project

The preloaded example project utilizes the TWR-S12G64's potentiometer 1, push button switches and LEDs. Once the board is plugged in, you can adjust potentiometer 1 and the bank of four LEDs should increase/decrease the toggling speed in response. Each LED will be turned off while the corresponding push button is pressed. The value of the RV1 value can be monitored in the HyperTerminal window.

5 Learn More About the S12G64

Read the release notes and documentation on the DVD or at **freescale.com/S12G**.

• The Processor Expert graphical initialization software included in your CodeWarrior installation will help reduce your time to market

• CodeWarrior for S12 with examples

TWR-S12G64 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.

Jumper	Option	Setting	Description
JP7	USER SWs, RVs and LED Selection	1-2	Connect PAD4 pin to SW3
		3-4	Connect PAD5 pin to SW4
		5-6	Connect PAD6 pin to SW5
		7-8	Connect PAD7 pin to SW6
		9-10	Connect PAD10 to RV1 POT1
		11-12	Connect PAD11 to RV2 POT2
		13-14	Connect PP0 pin to LED4
		15-16	Connect PP1 pin to LED5
		17-18	Connect PP2 pin to LED6
		19-20	Connect PP3 pin to LED7
JP6	LIN TX Enable	1-3	Routes SCI (TXD0) signal to be output by LIN transceiver, chip (U4) at J8 and J12
	LIN RX Enable	2-4	Routes SCI (RXD0) signal to be output by LIN transceiver, chip (U4) at J8 and J12
	UART TX Enable	3-5	Routes SCI (TXD0) signal to be output by RS232 chip (U3) at J11
	UART RX Enable	4-6	Routes SCI (RXD0) signal to be output by RS232 chip (U3) at J11

TWR-S12G64 Jumper Options *(continued)*

Jumper	Option	Setting	Description
JP5	LIN POWER	1-2	12 volts for LIN bus
		3-4	12 volts for LIN transceiver
JP1	CAN PWR	1-2	CAN tranceiver power enable
JP4	PWR Selector	1-2	Selects the board to be powered from the 3.3 V elevator card rail
		3-4	Selects the board to be powered from the 5 V USB connector
		5-6	External source selected as power source
JP3	CAN (H/L)	1-2	SPLIT Termination to CAN - H line
		3-4	SPLIT Termination to CAN - L line