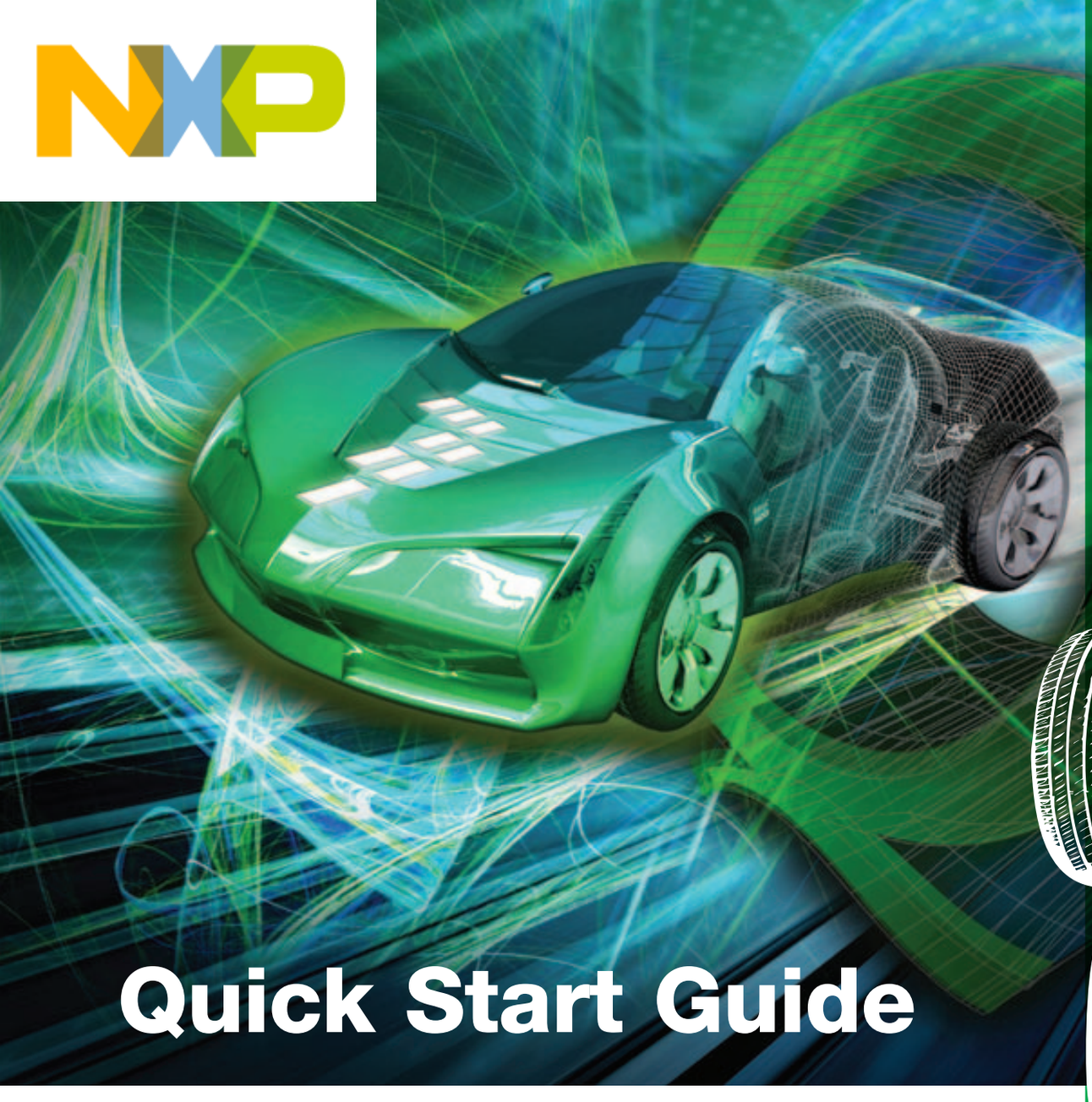


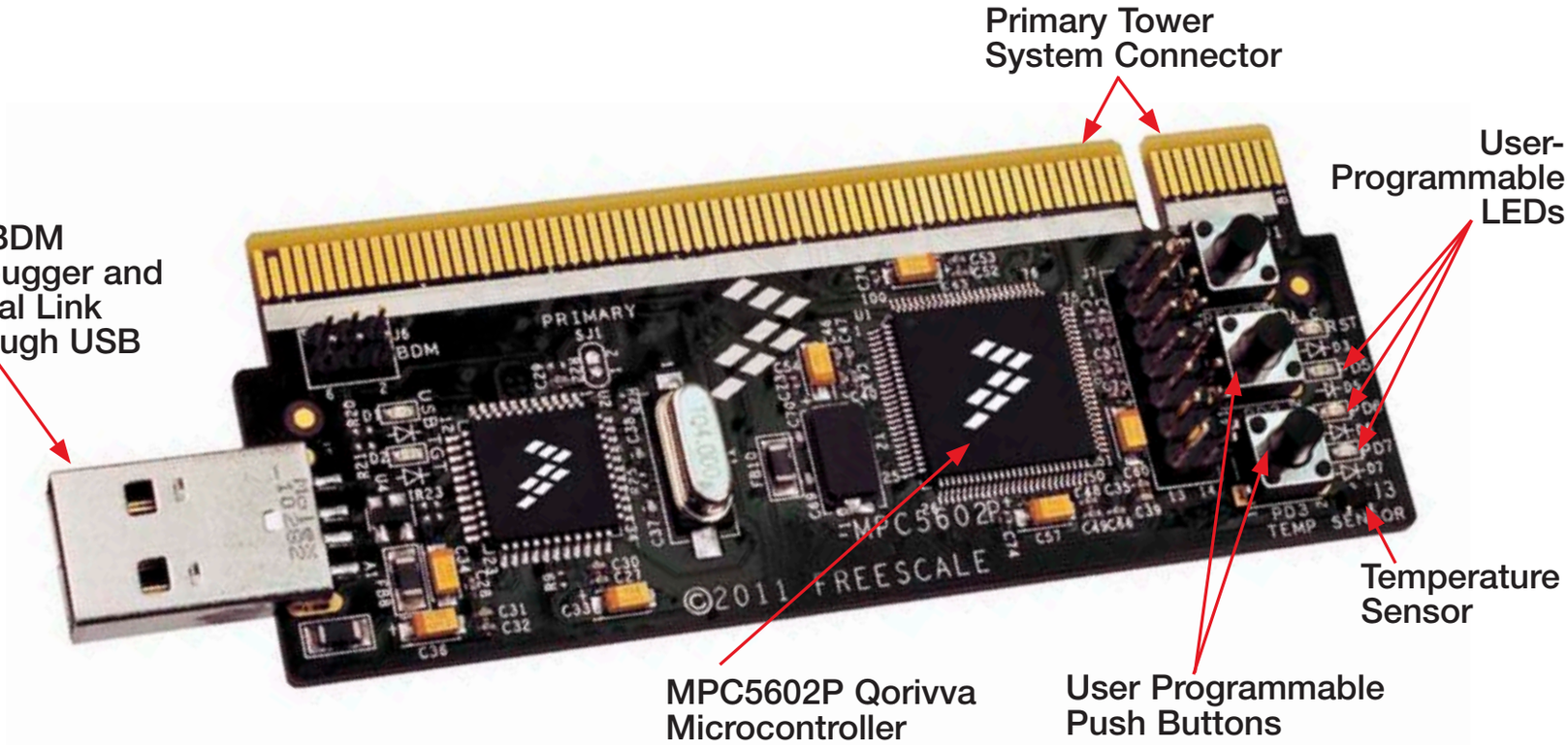
Quick Start Guide

TRK-USB-MPC5602P

StarterTRAK Mini USB
for Automotive Applications

freescale™

Get to know the TRK-USB-MPC5602P



TRK-USB-MPC5602P
Freescale StarterTRAK Mini USB

The TRK-USB-MPC5602P kit is part of Freescale's StarterTRAK mini USB development platform. It is designed for you to easily and inexpensively give Freescale's 32-bit Qorivva microcontrollers a test drive. This board can also be used in conjunction with the Freescale Tower System, allowing you to rapidly prototype designs with a growing portfolio of reconfigurable, modular tools.

TRK-USB-MPC5602P Features

- MPC5602P Qorivva microcontroller
- Temperature sensor
- Primary Tower System connector
- Three user-programmable multi-colored LEDs
- Two user-programmable push buttons
- OSBDM debugger through USB

Step-by-Step Installation Instructions

This quick start guide details how to set up the TRK-USB-MPC5602P board and run some demo projects on the device.

1 Install Software and Tools

- Download and install the CodeWarrior Development Studio for MPC55xx/MPC5xx v2.9 (Classic). Available at **freescale.com/StarterTRAKmini**

2 Connect Device to Computer

- Connect the USB board into an available port and allow the computer to automatically install the device drivers for the OSBDM module. CDC device drivers are required and may be obtained via the P&E Micro website (see Note 1 on next page). Once installed, you are ready to start coding and using the device.

3 Download Supporting Documentation

- Download the MPC5500/5600 Simple Cookbook and the MPC5602P reference manual from the downloads tab at **freescale.com/StarterTRAKmini**

4 Explore Further

- Download the example projects and applications located under the downloads tab. These include the MPC5500/5600 Simple Cookbook examples, a TRK-USB-MPC5602P-specific project and supporting Windows application. This application code utilizes the on-board temperature sensor switches and LEDs, as well as many on-chip peripherals. P&E CDC drivers will be required for this application.

Note 1: Updated drivers are required for full device functionality and are available on the P&E OSBDM website at **pemicro.com/osbdm/index.cfm**.

On-Board Connections

The following tables show the available signals and connections of the TRK-USB-MPC5602P board.

Jumpers

Jumper	Option	Setting	Description
J6	LIN Tx	1-2	LIN Tx to USB
		2-3	LIN Tx to Tower
J7	LIN Rx	1-2	LIN Rx to USB
		2-3	LIN Rx to Tower
J3	OSBDM Flash	1-2	Allows Flashing of new OSBDM Firmware

Other Connections

MCU Pin	Signal
Pin 97 (PD2)	Switch SW2
Pin 89 (PD3)	Switch SW3
Pin 32 (AN0_AN5)	Temp Sensor
Pin 22 (PD5)	Yellow LED
Pin 23 (PD6)	Green LED
Pin 26 (PD7)	Blue LED

Tower System Interface Connections

PCI Connector	MCU Pin	Signal		PCI Connector	MCU Pin	Signal
A1	N/A	5V		B1	N/A	5V
A2	N/A	GND		B2	N/A	GND
A3	N/A	3.3V		B3	N/A	3.3V
A4	N/A	3.3V		B4	N.C	
A5	N/A	GND		B5	N/A	GND
A6	N/A	GND		B6	N/A	GND
A7	N.C			B7	Pin 2	DSPI1_SCK
A8	N.C			B8	Pin 91	DSPI1_CS1
A9	Pin 30	GPIO_PTC2		B9	Pin 8	DSPI1_CS0
A10	Pin 28	GPIO_PTC1		B10	Pin 4	DSPI1_SOUT
A11	Pin 45	GPIO_PTC0		B11	Pin 6	DSPI1_SIN
A12	N.C			B12	N.C	
A13	N.C			B13	N.C	
A14	N.C			B14	N.C	

PCI Connector	MCU Pin	Signal		PCI Connector	MCU Pin	Signal
A15	N.C			B15	N.C	
A16	N.C			B16	N.C	
A17	N.C			B17	N.C	
A18	N.C			B18	N.C	
A19	N.C			B19	N.C	
A20	N.C			B20	N.C	
A21	N.C			B21	Pin 75	GPIO_PTA4
A22	N.C			B22	Pin 94	GPIO_PTA9
A23	N.C			B23	Pin 35	GPIO_PTB9
A24	N.C			B24	N.C	
A25	N.C			B25	N.C	
A26	N/A	GND		B26	N/A	GND
A27	Pin 32	ADC0_AN5		B27	N.C	
A28	Pin 27	ADC0_AN4		B28	Pin 41	ADC1_AN4
A29	Pin 31	ADC0_AN1		B29	Pin 44	ADC1_AN1
A30	Pin 29	ADC0_AN0		B30	Pin 42	ADC1_AN0
A31	N/A	GND		B31	N/A	GND
A32	N.C			B32	N.C	
A33	Pin 52	ETIMER0_ETC1		B33	Pin 64	ETIMER0_ETC3

PCI Connector	MCU Pin	Signal		PCI Connector	MCU Pin	Signal
A34	Pin 51	ETIMER0_ETC0		B34	Pin 57	ETIMER0_ETC2
A35	Pin 38	GPIO_PTB12		B35	Pin 36	GPIO_PTB10
A36	N/A	3.3V		B36	N/A	3.3V
A37	Pin 73	FLEXPWM0_B1		B37	Pin 84	FLEXPWM0_X3
A38	Pin 67	FLEXPWM0_A1		B38	Pin 90	FLEXPWM0_B3
A39	Pin 54	FLEXPWM0_B0		B39	Pin 78	FLEXPWM0_A3
A40	Pin 53	FLEXPWM0_A0		B40	Pin 70	FLEXPWM0_X1
A41	N.C			B41	Pin 77	CAN0_RXD
A42	N.C			B42	Pin 76	CAN0_TXD
A43	Pin 80	LIN0_RX		B43	N.C	
A44	Pin 79	LIN0_TX		B44	Pin 9	DSPI0_SIN
A45	VSSA			B45	Pin 98	DSPI0_SOUT
A46	VDDA			B46	Pin 5	DSPI0_CS0
A47	VDDA			B47	Pin 10	DSPI0_CS1
A48	VDDA			B48	Pin 7	DSPI0_SCK
A49	N/A	GND		B49	N/A	GND
A50	Pin 86	GPIO_PTD0		B50	N.C	
A51	Pin 3	GPIO_PTD1		B51	N.C	
A52	Pin 21	GPIO_PTD8		B52	Pin 37	GPIO_PTB11

PCI Connector	MCU Pin	Signal		PCI Connector	MCU Pin	Signal
A53	Pin 15	GPIO_PTD9		B53	N.C	
A54	N.C			B54	N.C	
A55	N.C			B55	Pin 43	IRQ20_PTB15
A56	N.C			B56	Pin 96	IRQ18_PTB6
A57	N.C			B57	Pin 100	IRQ14_PTA15
A58	Pin 71	ETIMER1_ETC1		B58	Pin 99	IRQ13_PTA14
A59	Pin 85	ETIMER1_ETC0		B59	Pin 95	IRQ12_PTA13
A60	Pin 56	ETIMER0_ETC5		B60	Pin 83	IRQ11_PTA12
A61	Pin 55	ETIMER0_ETC4		B61	Pin 82	IRQ10_PTA11
A62	Pin 20	MCU_RESET		B62	Pin 81	IRQ9_PTA10
A63	Pin 20	MCU_RESET		B63	N.C	
A64	N.C			B64	N.C	
A65	N/A	GND		B65	N/A	GND
A66	N.C			B66	N.C	
A67	N.C			B67	N.C	
A68	N.C			B68	N.C	
A69	N.C			B69	N.C	
A70	N.C			B70	N.C	
A71	N.C			B71	N.C	

PCI Connector	MCU Pin	Signal		PCI Connector	MCU Pin	Signal
A72	N.C			B72	N.C	
A73	N.C			B73	N.C	
A74	N.C			B74	N.C	
A75	N.C			B75	N.C	
A76	N.C			B76	N.C	
A77	N.C			B77	N.C	
A78	N.C			B78	N.C	
A79	N.C			B79	N.C	
A80	N.C			B80	N.C	
A81	N/A	GND		B81	N/A	GND
A82	N.C			B82	N.C	

Quick Start Guide

For more information, visit
freescale.com/ StarterTRAKmini

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