

TWR-P1025

Hardware Getting Started Guide

Rev. 1

1 About this Document

This document describes how to connect the TWR-P1025 card and verify its basic operation. It also provides settings for the switch and instructions for connecting peripheral devices. It also includes instructions for connecting the TWR-P1025 to an integrated development environment (IDE), such as Freescale's CodeWarrior. However, instructions for working with the IDE are beyond the scope of this document.

1.1 Definitions, Acronyms, and Abbreviations

CPLD	Complex Programmable Logic Device
DIP	Dual In-line Package
EEPROM	Electrically Erasable, Programmable Read Only Memory
GETH	Gigabit Ethernet
HW	Hardware
I ² C (bus)	Inter-IC Bus
UART	Universal Asynchronous Receiver/Transmitter

2 Getting Started

2.1 Checking the Switches

The TWR-P1025 board has one 10-way dual in-line package (DIP) switch. The default DIP switch positions (as shown in [Figure 2-1](#) and described in [Table 2-1](#)) provide working set up values for the board. Ensure that the default positions are set, and verify the board is operational before changing the switches.

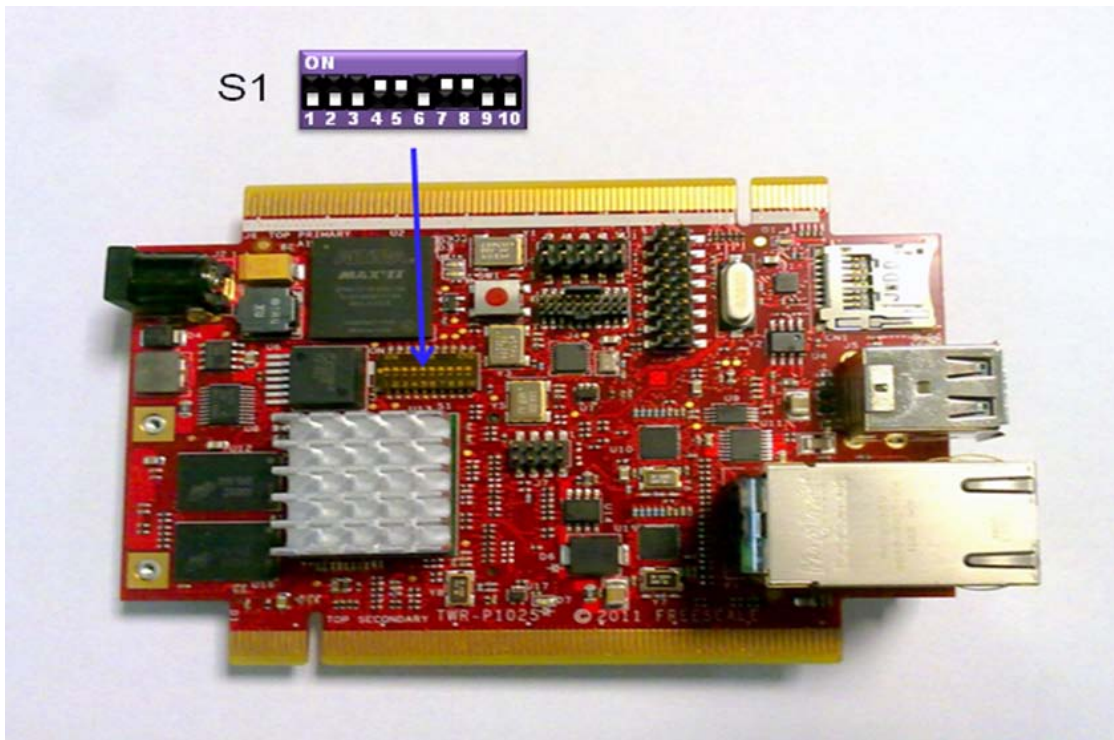


Figure 2-1: Default Switch Settings

The following [Table 2-1](#) lists default switch settings.

Table 2-1: Default Switch Settings (In RED)

Feature	Settings [OFF=1 ON=0]	Comments										
S1.1	OFF ON	Reserved										
S1.2	OFF ON	PCIE_HOST_AGENT Selection P1025 is Host P1025 is Agent										
S1.3	OFF ON	Reserved										
S1.4	OFF ON	CFG_CPU0_1_BOOT Both Cores run after reset Core0 boots, Core 1 in holdoff after reset										
S1.5	OFF ON	BOOT_SEQ Boot Sequencer ON Boot Sequencer OFF										
S1.6	OFF ON	LOCALBUS_QE_MUXSEL Local bus pins muxed with QE function as local bus in CPLD Local bus pins muxed with QE function as QE pins in CPLD										
S1.7 S1.8	<table border="1"> <thead> <tr> <th>CPU_SPEED_SELECT0 SW1.7</th> <th>CPU_SPEED_SELECT1 SW1.8</th> <th>CORE(0 &1) Speed (MHz)</th> <th>QE Speed (MHz)</th> <th>SYSCLK (MHz)</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>ON</td> <td>533</td> <td>266</td> <td>66.667</td> </tr> </tbody> </table>	CPU_SPEED_SELECT0 SW1.7	CPU_SPEED_SELECT1 SW1.8	CORE(0 &1) Speed (MHz)	QE Speed (MHz)	SYSCLK (MHz)	ON	ON	533	266	66.667	<p>NOTE: All other switch settings are reserved.</p>
CPU_SPEED_SELECT0 SW1.7	CPU_SPEED_SELECT1 SW1.8	CORE(0 &1) Speed (MHz)	QE Speed (MHz)	SYSCLK (MHz)								
ON	ON	533	266	66.667								
S1.9	OFF ON	ETH_TDM_SEL Ethernet1 clock routed to P1025 through CPLD TDM Clock routed to P1025 through CPLD										
S1.10	OFF ON	Reserved										

2.2 Assembly and Connection of the Board

The TWR-P1025 is powered through a barrel connector. This barrel should be supplied by a 5V @5A supply. (Figure 2-2)

NOTE

Under normal operating conditions, the heat sink on the P1025 may become hot.

2.3 Performing Initial Board Power-Up and Checking the LEDs

1. Apply power to the board through the barrel connector.
2. Check for completion of the reset sequence indicated by the LEDs (Figure 2-2). Table 2-2 describes the LED operation.

3. When powered up:
 - a. The LED D5 will turn on to indicate 3V3 Power is present.
 - b. D7 will turn ON then OFF – This LED is connected to the P1025 ASLEEP signal.
 - c. D2 will blink ON then turn and remain OFF, while D3 will remain ON.
 - d. Any Ethernet activity will be indicated by the LEDs on the RJ45 connector
 - e. D1 indicates RX or TX activity on the USB UART.

NOTE

SW1 performs a full reset of the board (P1025 Hard reset + PHY resets)

Table 2-2: LED Operation

Description	Ref	Color	LED On	LED Off
UART Activity	D1	Orange	Flash for Activity	Off for no Activity
CPLD	D2	Green	User Configured via P1025 QE_PB27	
CPLD	D3	Green	User Configured via P1025 QE_PB31	
3V3 Power	D5	Green	3V3 Power ON	3V3 Power OFF
P1025 ASLEEP	D7	Green	P1025 in Reset	P1025 exited Reset
Ethernet eTSEC1	Lup	Green	ON - Link Blink - Activity	No Link
Ethernet eTSEC1	Rup	Green/Orange	Orange - 1000Mbps Green – 100Mbps	10Mbps
Ethernet eTSEC3	Ldown	Green	ON – Link Blink - Activity	No Link
Ethernet eTSEC3	Rdown	Green/Orange	Orange - 1000Mbps Green – 100Mbps	10Mbps

2.4 Connecting the USB UART

The TWR-P1025 comes preloaded with u-boot/linux. Serial connectivity for P1025 is provided through the mini type B USB connector (labeled mini USB UART in [Figure 2-3](#)). Note that USB Drivers should be installed onto the host PC before the serial terminal is used. You can download from:

<http://www.ftdichip.com/Drivers/VCP.htm> (FT2232).

You can set up a serial terminal using PC communication, such as hyper terminal set to 115200 Baud, 8 data bits, no parity, 1 stop bit. Select the first COM port assigned to the USB UART Virtual COM port.

2.5 Connecting the JTAG Connectivity Unit to the Board

The JTAG connectivity unit (USB tap) enables the CodeWarrior software to work with the board.

1. Connect the JTAG connectivity unit to the P1025 JTAG connector J3. Pin 1 is marked on the board.
2. Switch on power to the board.

3. Check for completion of the reset sequence.
4. Continue as per standard CodeWarrior instructions.

2.6 Setting the Board for User-Specific Development

Main headers/connectors are as follows (Figure 2-2 and Figure 2-3)

- J3 – P1025 JTAG/COP
- J1 – CPLD JTAG
- J4 – QE UART Expansion
- J7 - IEEE1588 Header
- Primary and Secondary Elevators
 - LCD Local Bus
 - QE UART for RS485 or RS232 (UCC3 and UCC7)
 - 10/100 Mbps Ethernet (UCC1 and UCC5)
 - GPIO
 - SerDes (PCIe, SGMII)
 - SPI
 - I²C

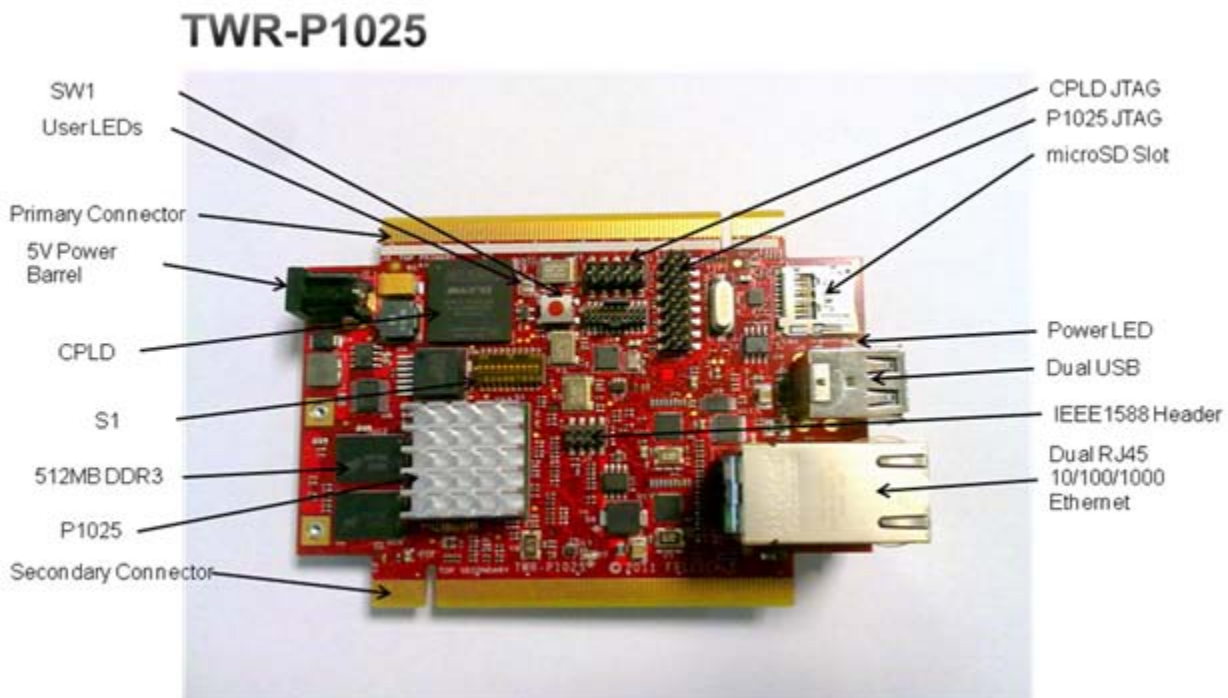


Figure 2-2: Primary Side Main Features



Figure 2-3: Secondary Side Main Features

Support

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

Warranty

One (1) year limited warranty. Visit us at freescale.com/warranty for complete warranty information.

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