ZNEO32! Family of Microcontrollers

Z32F384 Evaluation Kit

User Manual

UM027802-0616

ZNEO*32!*

3 2   B i t   M i c r o c o n t r o l l e r s

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Document Disclaimer

Revision History

Each instance in this document's revision history reflects a change from its previous edition. To learn more, refer to the corresponding page(s) or appropriate links furnished in the table below.

Date	Revision Level	Description	Page
Jun 2016	02	Corrected pin connections in Figure 3.	5
May 2016	01	Original issue.	n/a

Overview

Zilog's Z32F384 Evaluation Kit (Z32F3840100KITG) enables developers to start programming projects using the Z32F384 microcontroller, a member of the ZNEO32! Family of MCUs. The kit exposes the ports to allow them to be connected by the user for prototyping and creating proofs of concept.

This Evaluation Kit consists of 5 LEDs, 2 switches, and a USB-to-UART connection for serial communications and powering. The board also includes a standard 20-pin JTAG header.

This user manual provides a description of the Z32F384 Evaluation Board. It includes features of the Z32F384 MCU, schematic diagrams of the board, and kit contents and requirements.

Kit Contents

The Z32F384 Evaluation Kit contains the following items:

- 1 Z32F384 Evaluation Board

- 1 A (male) to Mini-B USB cable

- 1 ZNEO32! Evaluation Kit flyer

Additional requirements (to be obtained by user):

- JTAG Debugger tool

- Cortex M3 development tools, such as Keil µVision 5 or IAR Embedded workbench for ARM

- Zilog CMSIS Pack file, available at www.zilog.com

- Z32F384 MCU product specification (PS0346), available from the Zilog website.

Figure 1 shows the contents of the Z32F384 Evaluation Kit.

Figure 1. The Z32F384 Evaluation Kit

Z32F384 MCU Features

The Z32F384 MCU includes the following features:

- High performance low-power Cortex-M3 core

- 384 KB code Flash memory with cache function

- 16 KB SRAM

- 3-Phase PWM with ADC triggering function
  - 2 Channels

- 1.5 MSPS high-speed ADC with sequential conversion
  - 2 units with 16 Channel input

- System fail-safe function by clock monitoring
  - XTAL OSC fail monitoring function
  - System clock Fail monitoring function

- Internal clock sources
  - Internal ring oscillator (1 MHz ±50%)
  - Internal oscillator clock (20 MHz ±3%)
  - Internal Phase Lock Loop (PLL) up to 80 MHz

- External clock sources
  - External crystal oscillator (4~16 MHz)
  - External sub oscillator (32 kHz)

- Watchdog timer

- 10 general purpose timer channels

- Timer/capture/PWM mode

- Free run timer

- Various external communication ports:
  - 4 UARTs
  - 2 I^2Cs
  - 2 SPIs

- High current driving port for UART photo couplers

- Direct Memory Access (DMA) controller with 8 channels

- Debug and emergency stop function

- JTAG and SWD debugger

- Package: LQFP-100 (0.5mm pitch)

- Industrial grade operating temperature (- 40 ~ +85°C)

To learn more about the Z32F384 MCU, refer to the Z32F384 MCU Product Specification (PS0346).

Mini Board

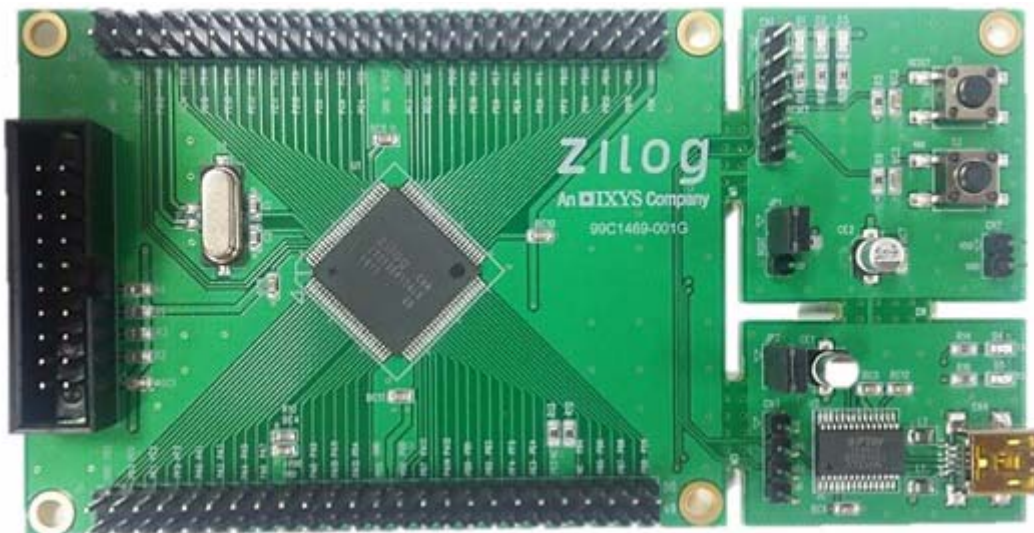Figure 2 shows the Mini Board and Table 1 lists its characteristics.

Figure 2. Mini Board

Table 1. Mini Board Characteristics

Contents	Main Characteristics	Note
MCU	Z32F38412ALS	ARM Cortex M3
Operating clock	8 MHz	Crystal
ROM	384 KB Flash ROM	
RAM	16 KB	
Communication port	USB to UART port	Mini-B USB connector
Debugging port	J-Tag	20-pin connector
Input buttons	1 reset, 1 NMI	Tactile switch

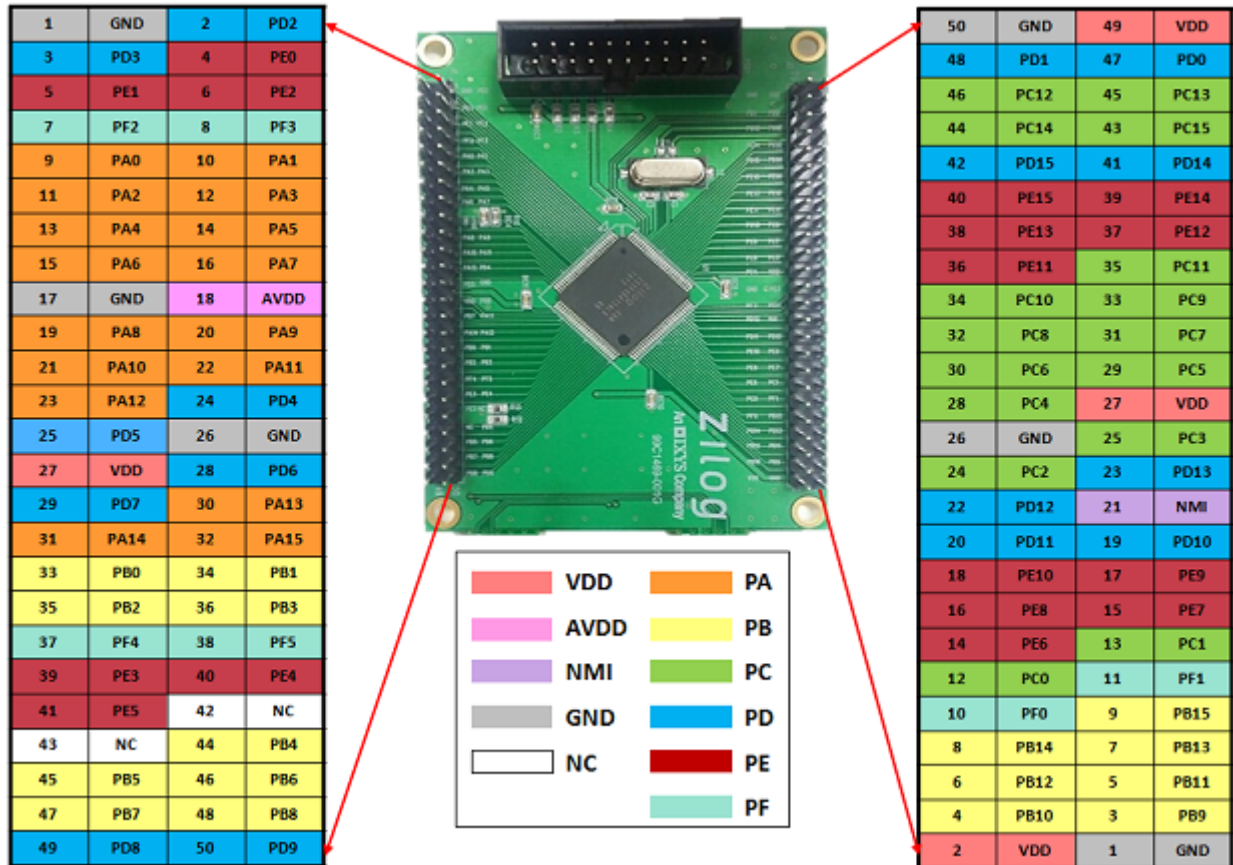Figure 3 displays the Mini Board MCU's external pin connections.

Figure 3. Mini Board MCU's External Pin Connections
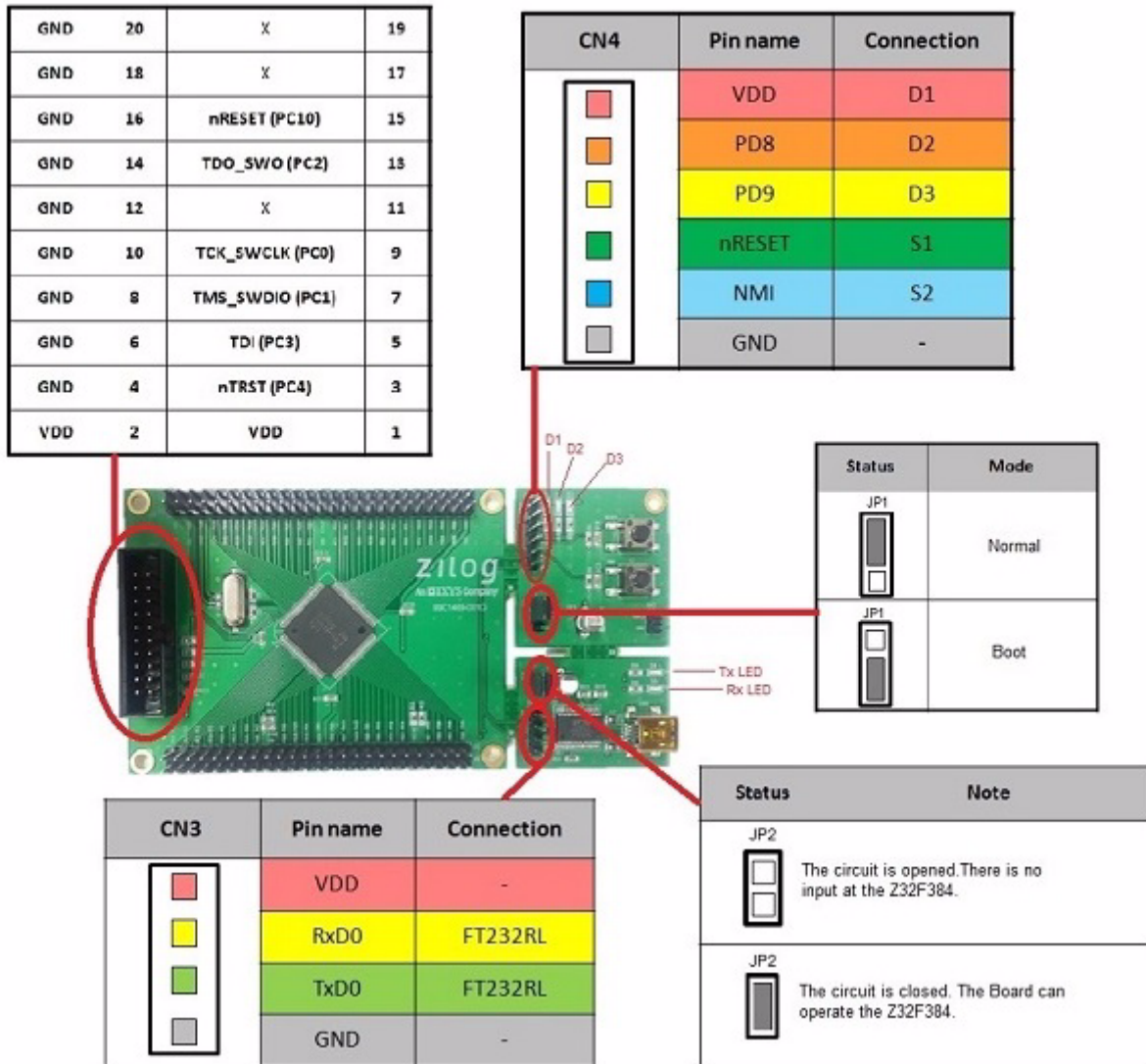
The jumper settings are shown in Figure 4.

Figure 4. Jumper Settings

Z32F384 Evaluation Kit Documentation

The documents associated with the Z32F384 Evaluation Kit are listed in Table 2. Each of these documents can be obtained from the Zilog website by clicking the link associated with its Document Number.

Table 2. Z32F384 Evaluation Kit Documentation

Document	Description
UM0278	Z32F384 Evaluation Kit User Manual
PS0346	Z32F384 Product Specification
FL0183	ZNEO32! Evaluation Kit Insert

Appendix A. Schematic Diagrams

Figure 5 presents a schematic diagram of the Z32F384 Evaluation Board with the 100-pin LQFP package MCU.
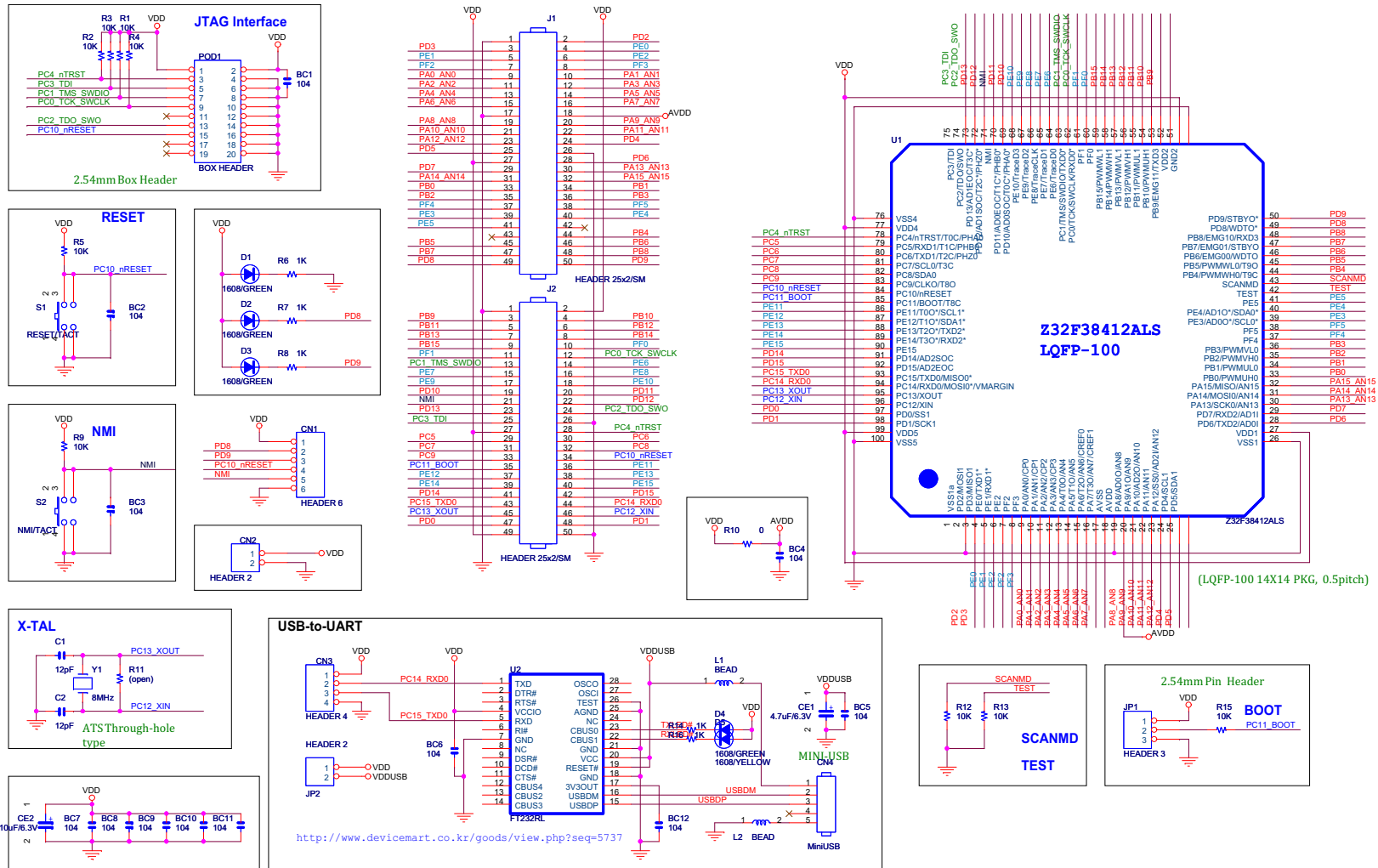

Figure 5. Z32F384 Evaluation Board Schematic Diagram

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