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ZNEO32! Family of Microcontrollers

Z32F128 Evaluation Kit

User Manual

UM027702-0718

ZNEO32!

32 Bit Microcontrollers

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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
Jul 2018	02	Updated the number of LEDs in the Overview section.	1
Dec 2015	01	Original issue.	n/a

Overview

Zilog's Z32F128 Evaluation Kit (Z32F1280100KITG) enables developers to start programming projects using the Z32F128 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 3 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 Z32F128 Evaluation Board. It includes features of the Z32F128 MCU, schematic diagrams of the board, and kit contents and requirements.

Kit Contents

The Z32F128 Evaluation Kit contains the following items:

- 1 Z32F128 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
- Z32F128 MCU product specification (PS0345), available from the Zilog website.

Figure 1 shows the contents of the Z32F128 Evaluation Kit.

Figure 1. The Z32F128 Evaluation Kit

Z32F128 MCU Features

Key features of the Z32F128 MCU include:

- High performance low-power Cortex-M3 core
- 72 MHz maximum CPU clock speed
- 128KB code Flash memory with cache function
- 12KB SRAM
- 3-Phase motor PWM with ADC triggering function
  - 2 channels
- 1.5MSPS high-speed ADC with burst conversion function
  - 3 ADC units with 16 channel input
- Built-in Programmable Gain Amplifier (PGA) for ADC inputs
  - 4 channels
    - 3 channels for 3 shunt resistor configuration
    - 1 channel for 1 shunt resistor configuration
- Built-in analog comparator
  - 4 channels
    - 3 channels for 3 shunt resistor configuration
    - 1 channel for 1 shunt resistor configuration
- System fail-safe function by clock monitoring
- XTAL OSC fail monitoring
- Precision internal oscillator clock (20MHz ±3%)
- Watchdog timer
- Six general purpose timers
- Quadrature encoder counter
- External communication ports: 4 UARTs, 2 I^2Cs, 2 SPIs
- High current driving port for UART photo couplers
- Debug and emergency stop function
- Real-time monitoring function support for more effective development
- JTAG and Serial Wire Debug (SWD) in-circuit debugger
- Package options: LQFP-80, LQFP-64
- Industrial grade operating temperature (-40 ~ +85°C)

To learn more about the Z32F128 MCU, refer to the Z32F128 MCU Product Specification (PS0345).

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	Z32F12811ATS	ARM Cortex M3
Operating clock	8MHz	Crystal
ROM	128KB Flash ROM	
RAM	12KB	
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.

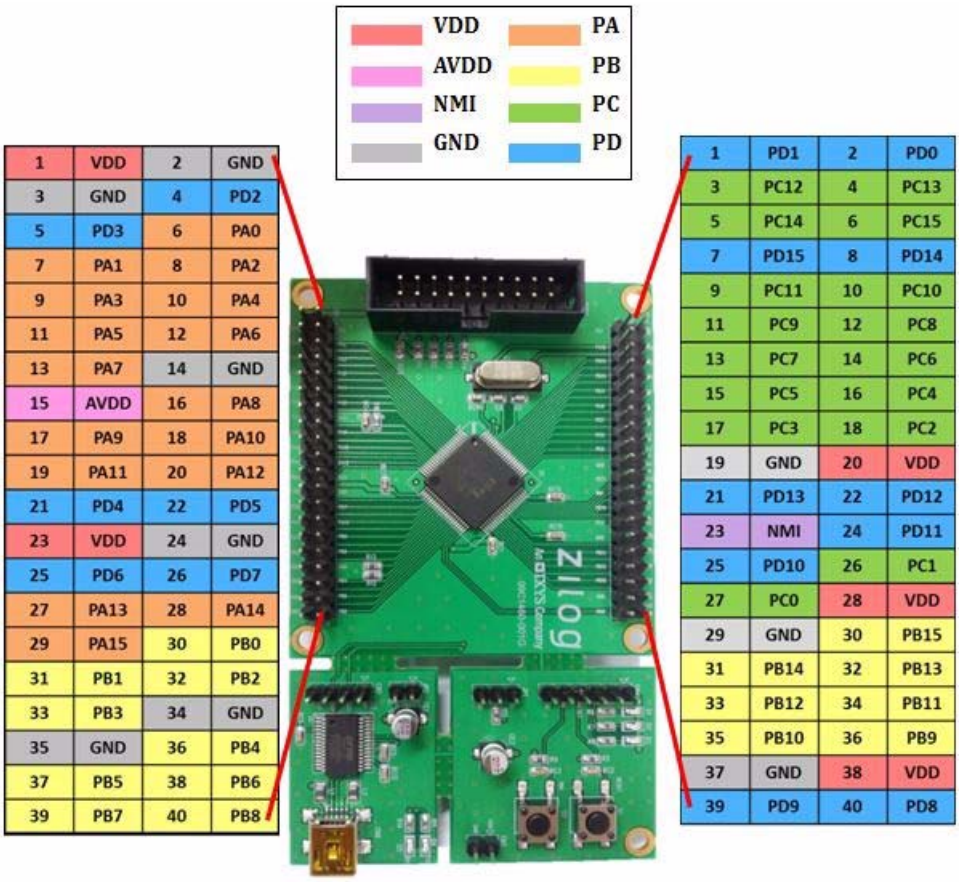

Figure 3. Mini Board MCU's External Pin Connections

The jumper settings are shown in Figure 4.

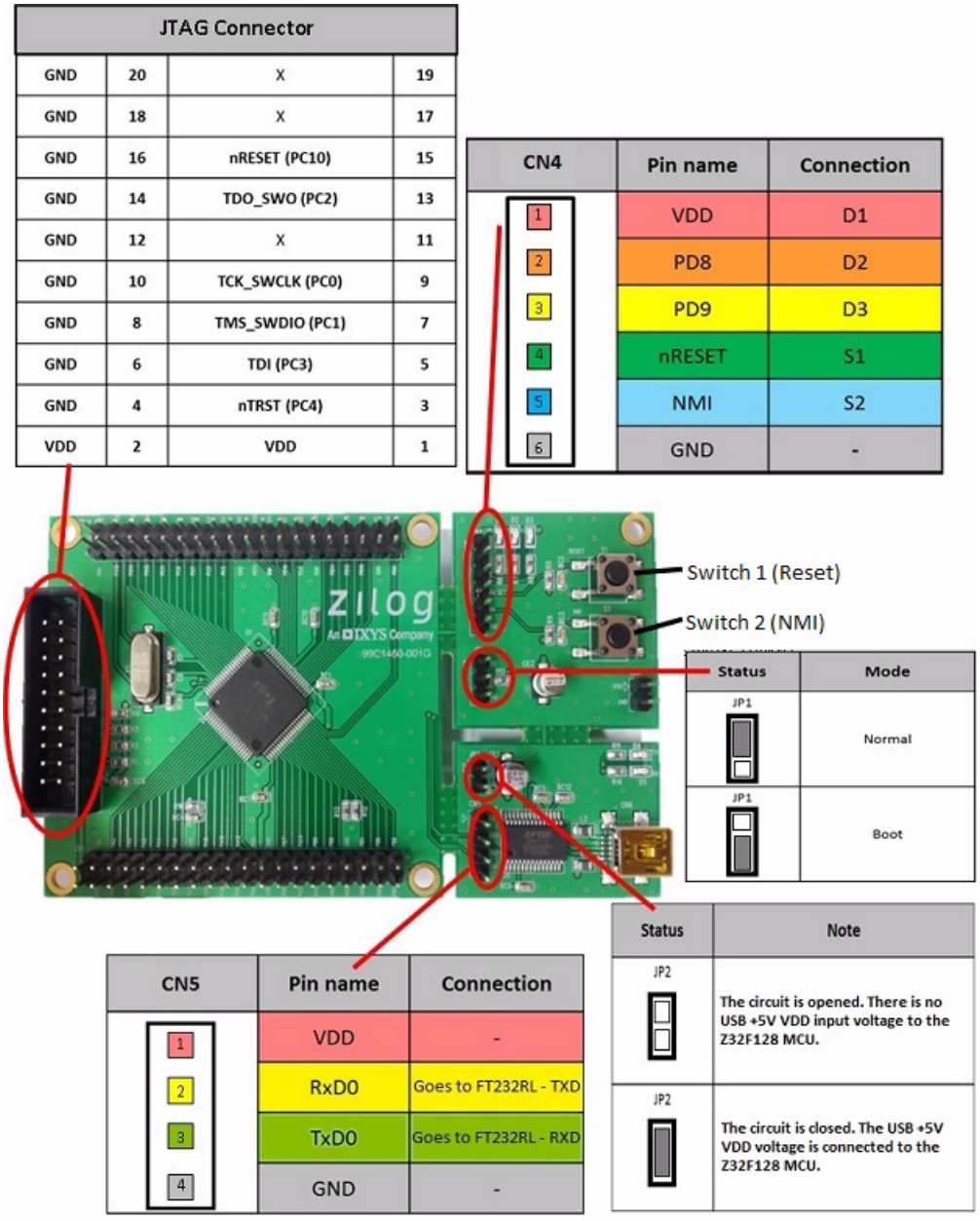

Figure 4. Jumper Settings

Z32F128 Evaluation Kit Documentation

The documents associated with the Z32F128 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. Z32F128 Evaluation Kit Documentation

Document	Description
UM0277	Z32F128 Evaluation Kit User Manual
PS0345	Z32F128 Product Specification
FL0183	ZNEO32! Evaluation Kit Insert

Appendix A. Schematic Diagrams

Figure 5 presents a schematic diagram of the Z32F128 Evaluation Board with the 80-pin LQFP package MCU.

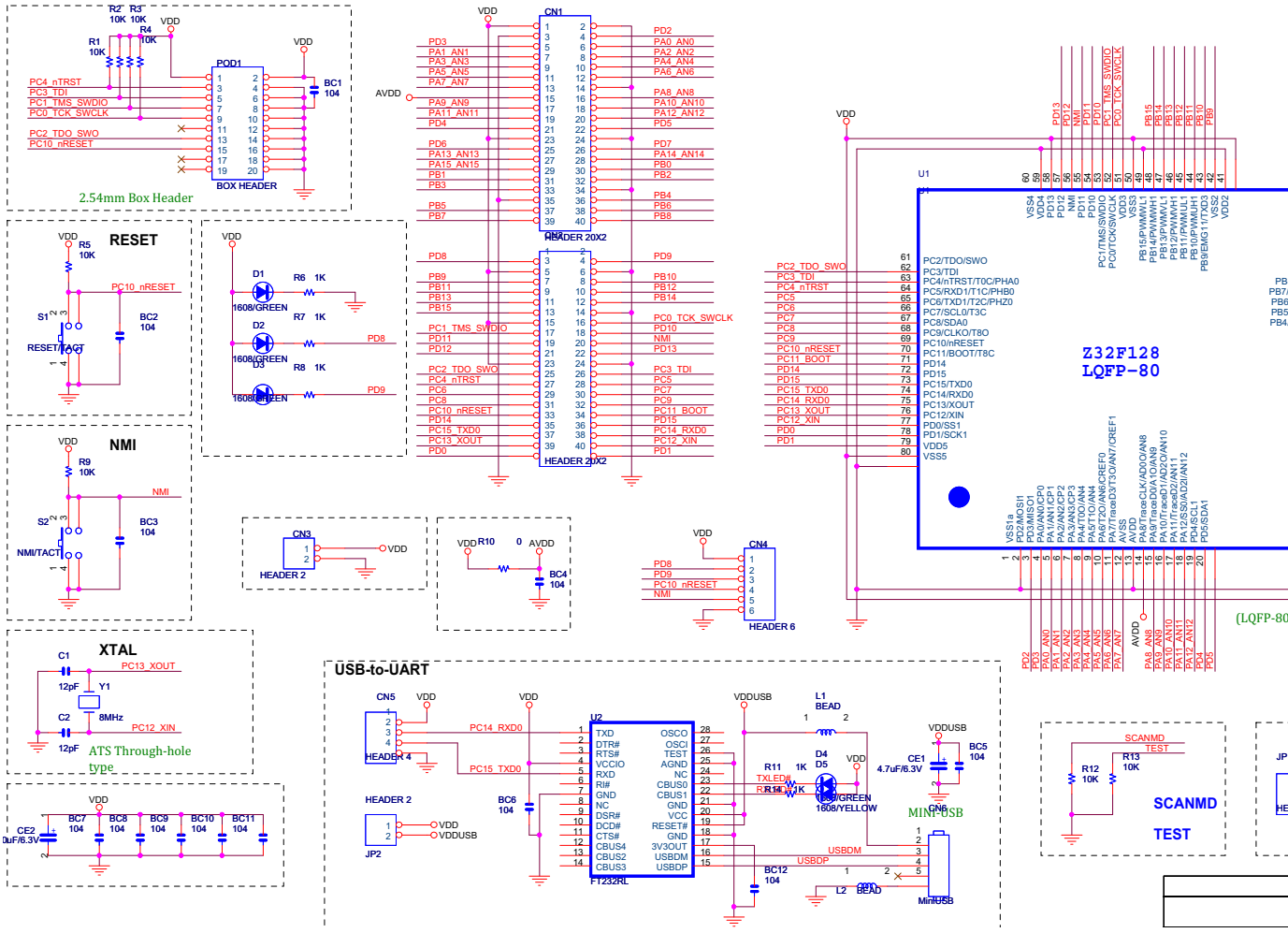

Figure 5. Z32F128 Evaluation Board Schematic Diagram

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