



Crimzon™ Infrared Microcontrollers

ZLP12840 OTP MCU with Learning Amplification

Product Brief

PB015603-0106



Product Block Diagram

Power-On Reset	32/64/96/128K OTP ROM	T8 Timer Capture & Transmit
High Battery Voltage Detection	Z8 LXM Core	T16 Timer Capture & Transmit
Low Battery Voltage Detection		8-Bit Timer w/ UART
2 Comparators	1KB RAM	Watch-Dog Timer
Dedicated IR Amplifier		
Port 0 8 I/O	Port 2 8 I/O	Port 3 8 I/O

Features

- Low power consumption
- Three standby modes
 - STOP—2µA (typical)
 - HALT—0.8mA (typical)
 - Low voltage
- Infrared dedicated timers
 - Capture and transmit, 8- and 16-bit
 - 8-bit timer with full duplex UART
- Twenty priority interrupt sources
 - Three from UART Tx, Rx, BRG
 - Two assigned to T8, T16 time-out and capture
 - One low-voltage detection interrupt

- Fourteen from SMR sources P20–P27, P30–P33, P00, and P04

- High and Low voltage detection with flag IRQ (Low voltage only)
- Programmable Watch-Dog Timer
- Power-On Reset circuits
- OTP-selectable pull-up transistors on ports 0 and 2
- Two comparators
- Infrared learning amplification comparator
- Up to 24 GPIO
 - Port 0: 0–3 (with pull-up option)
 - Port 0: 4–7 (with pull-up option)
 - Port 2: 0–7 (with pull-up option)
 - Port 3: 0–7

- Flexible Stop-Mode Recovery (SMR)
- Compatible with the ZiLOG Z86L98, ZLP32300, ZLR32300, and ZLR64400 product families.

General Features

The ZLP12840 OTP MCU is a member of the Crimzon™ MCU family of infrared microcontrollers. With 1KB of general-purpose RAM and up to 128KB of OTP, ZiLOG's CMOS microcontrollers offer fast executing, efficient use of memory, sophisticated interrupts, input/output bit manipulation capabilities, automated pulse generation/reception, and internal key-scan pull-up transistors.

Block Diagram

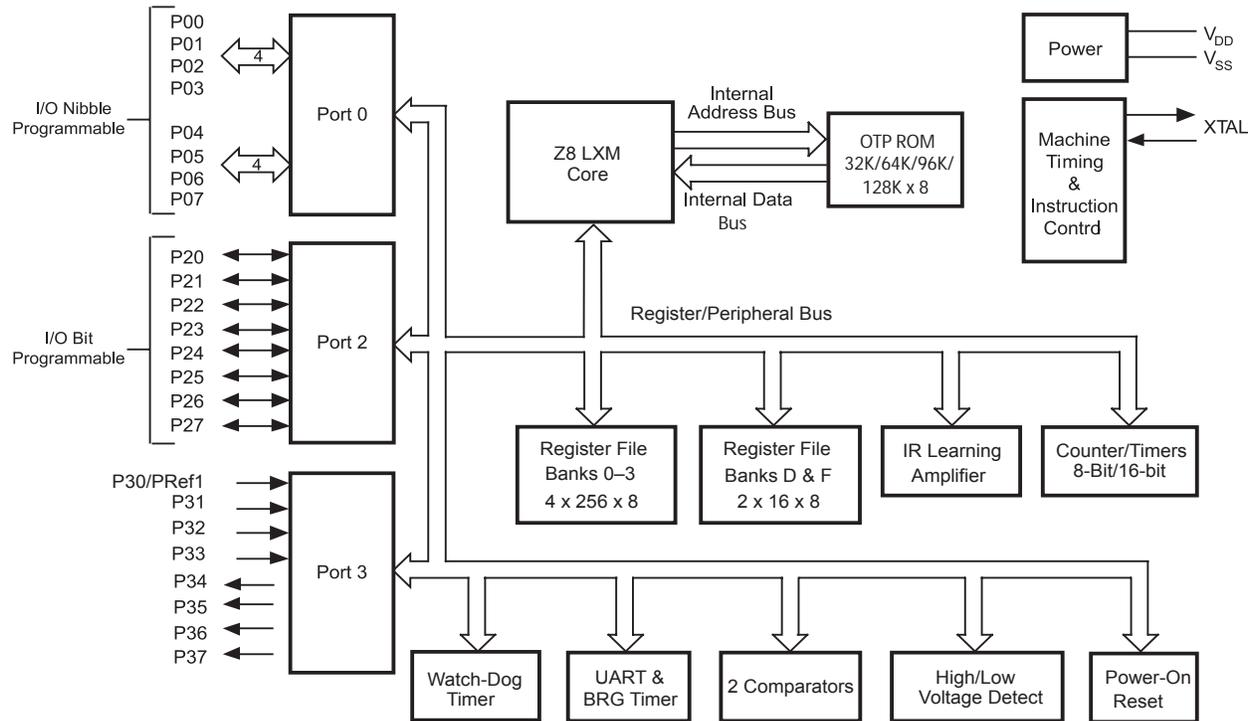


Figure 1. Functional Block Diagram

Pin-Outs and Pin Directions

Figure 2 illustrates the 20-pin PDIP, SOIC, and SSOP pin assignments.

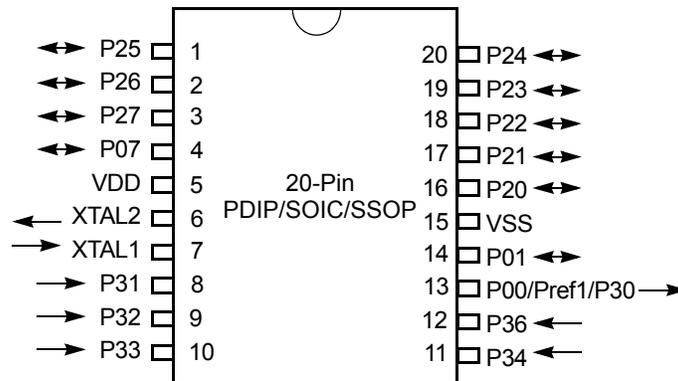


Figure 2. 20-Pin PDIP/SOIC/SSOP Pin Assignment

Figure 3 illustrates the 28-pin PDIP, SOIC, and SSOP pin assignments.

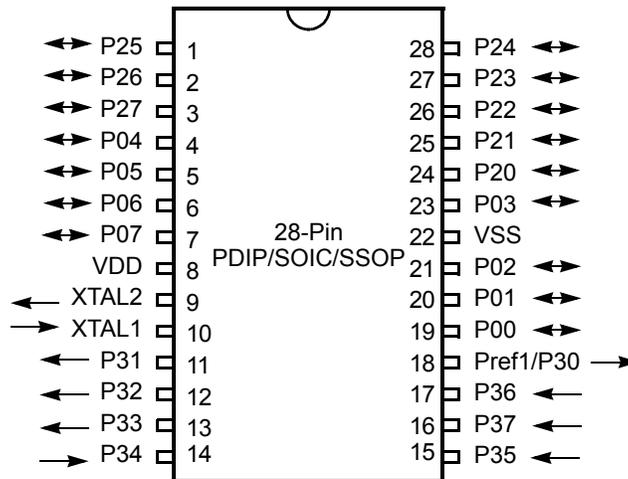


Figure 3. 28-Pin PDIP/SOIC/SSOP Pin Assignment



Applications and Support Tools

The following development tools are available for programming and debugging this device:

- ZLP128ICE01ZEM Crimzon™ In-Circuit Emulator
- ZiLOG Developer Studio II (ZDSII), available for download from www.zilog.com.

Ordering Information

Each of the parts listed in [Table 1](#) is available in a lead-free package that conforms to responsible environmental standards. To order a leaded package, please contact [ZiLOG Customer Service](#).

Table 1. Ordering Information

Part Number	Description	Part Number	Description
ZLP12840H2828G	28-pin SSOP 128K OTP	ZLP12840H2896G	28-pin SSOP 96K OTP
ZLP12840S2828G	28-pin SOIC 128K OTP	ZLP12840S2896G	28-pin SOIC 96K OTP
ZLP12840P2828G	28-pin PDIP 128K OTP	ZLP12840P2896G	28-pin PDIP 96K OTP
ZLP12840H2028G	20-pin SSOP 128K OTP	ZLP12840H2096G	20-pin SSOP 96K OTP
ZLP12840S2028G	20-pin SOIC 128K OTP	ZLP12840S2096G	20-pin SOIC 96K OTP
ZLP12840P2028G	20-pin PDIP 128K OTP	ZLP12840P2096G	20-pin PDIP 96K OTP
ZLP12840H2864G	28-pin SSOP 64K OTP	ZLP12840H2832G	28-pin SSOP 32K OTP
ZLP12840S2864G	28-pin SOIC 64K OTP	ZLP12840S2832G	28-pin SOIC 32K OTP
ZLP12840P2864G	28-pin PDIP 64K OTP	ZLP12840P2832G	28-pin PDIP 32K OTP
ZLP12840H2064G	20-pin SSOP 64K OTP	ZLP12840H2032G	20-pin SSOP 32K OTP
ZLP12840S2064G	20-pin SOIC 64K OTP	ZLP12840S2032G	20-pin SOIC 32K OTP
ZLP12840P2064G	20-pin PDIP 64K OTP	ZLP12840P2032G	20-pin PDIP 32K OTP
ZLP128ICE01ZEM	Crimzon™ In-Circuit Emulator		



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