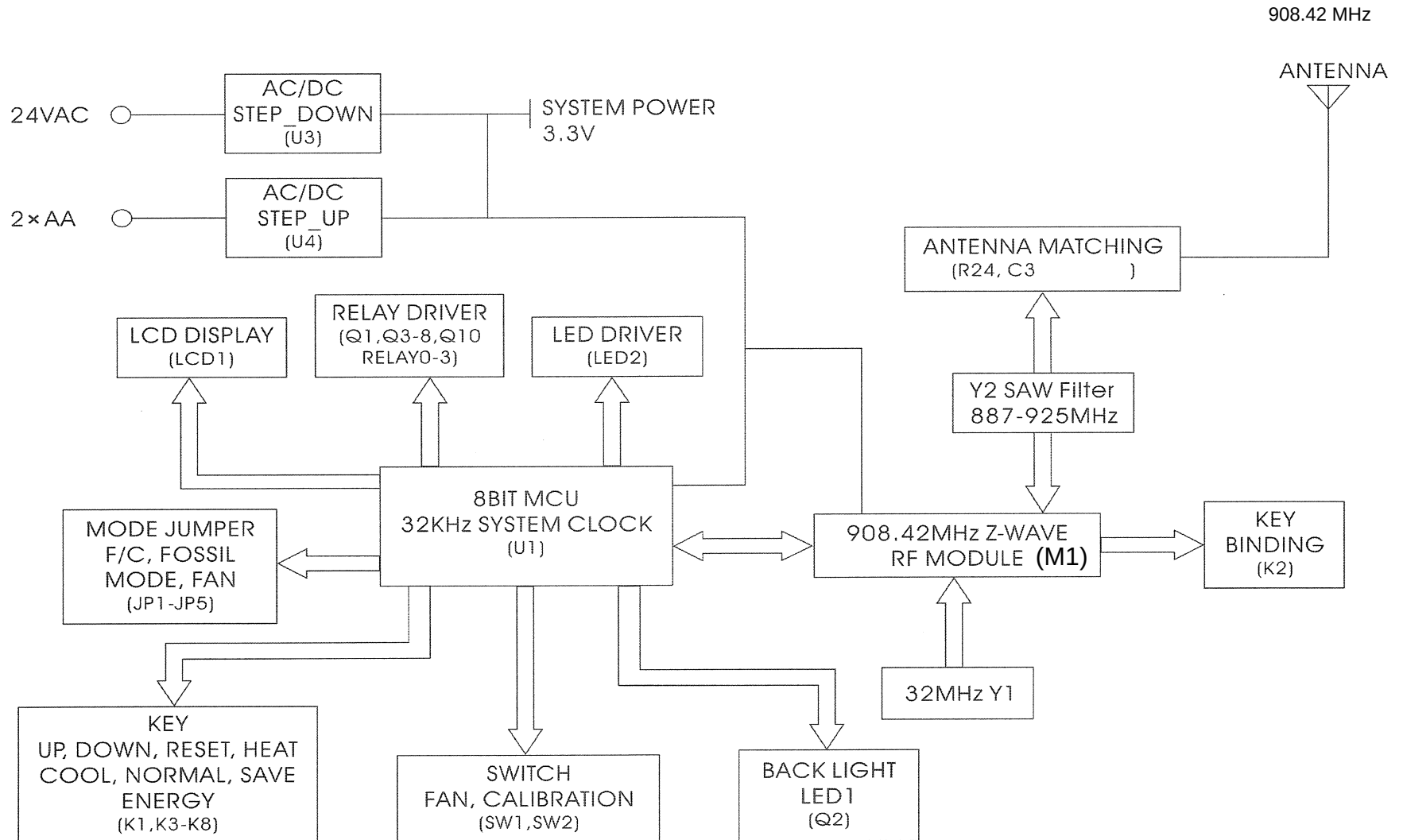


i29 BLOCK DIAGRAM



Timers

- Timers for Z-Wave™ API + Application SW
 - Two 8051 compatible timers
 - One 16 bit General Purpose Timer (programmable for PWM)
- Wake Up Timer in Sleep mode with a wide range of sleep time (7.8 ms to 256 s)

Interfaces

- 10 configurable general purpose I/O pins
- Programmable pull-up on all GPIO pins
- High strength outputs ± 6 mA
- One Schmitt Trigger input (e.g. for zero crossing detection in triac controller app.)
- Two input pins for external interrupts

Triac Controller

- HW implementation

Serial Peripheral Interface (SPI)

- Slave in programming mode of internal flash
- Master when interfacing to external EEPROM

UART

- 9.6 kbaud, 38.4 kbaud or 115.2 kbaud

External Interrupts

- Two edge or level triggered interrupts
- One interrupt can initiate wake up from sleep mode

ADC

- 12 or 8 bit resolution
- Four multiplexed inputs
- Maximum sampling rate 23.6 ksamples/s
- Reference: Internal, supply or external input
- On-chip battery monitoring (not supported in Developers Kit v5.0x API)

Power Management

- Power down / Sleep mode with wake up timer

Power-On Reset (POR) / Brown-Out Detector

- Extremely low power consumption (also active in sleep mode)

Power Consumption (typical values)

- Sleep mode: 2.5 μ A
- Normal mode (MCU, no RF): 5.2 mA
- Receiving: 23 mA
- Transmitting -5 dBm: 24 mA
- Transmitting +0 dBm: 36 mA

Development Tools

The user application SW can be compiled using the 8051 C-compiler from Keil Software GmbH. Please refer to the Keil homepage for Embedded Development Tools (www.keil.com). The ZW0301 can be programmed using an EPSILON 5 II, an FS2003 or a PPM3 programmer from Equinox Technologies Limited (www.equinox-tech.com).

ARCHITECTURAL OVERVIEW

Figure 1 shows a functional block diagram of the ZW0301.

The central parts of the ZW0301 are the RF transceiver, the 8051 MCU including SRAM, and the flash memory. In addition to the central parts there are a number of peripheral functions supporting the Z-Wave™ system. All functional blocks are briefly described below:

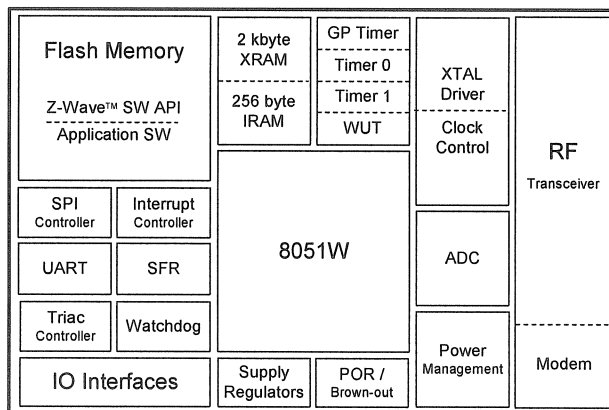


Figure 1: ZW0301 functional block diagram

