



# *Speak-eZ-Mail*



**Project Name:**

Speak-eZ-Mail

**Project Number:**

Z4217

**Resulting project:**

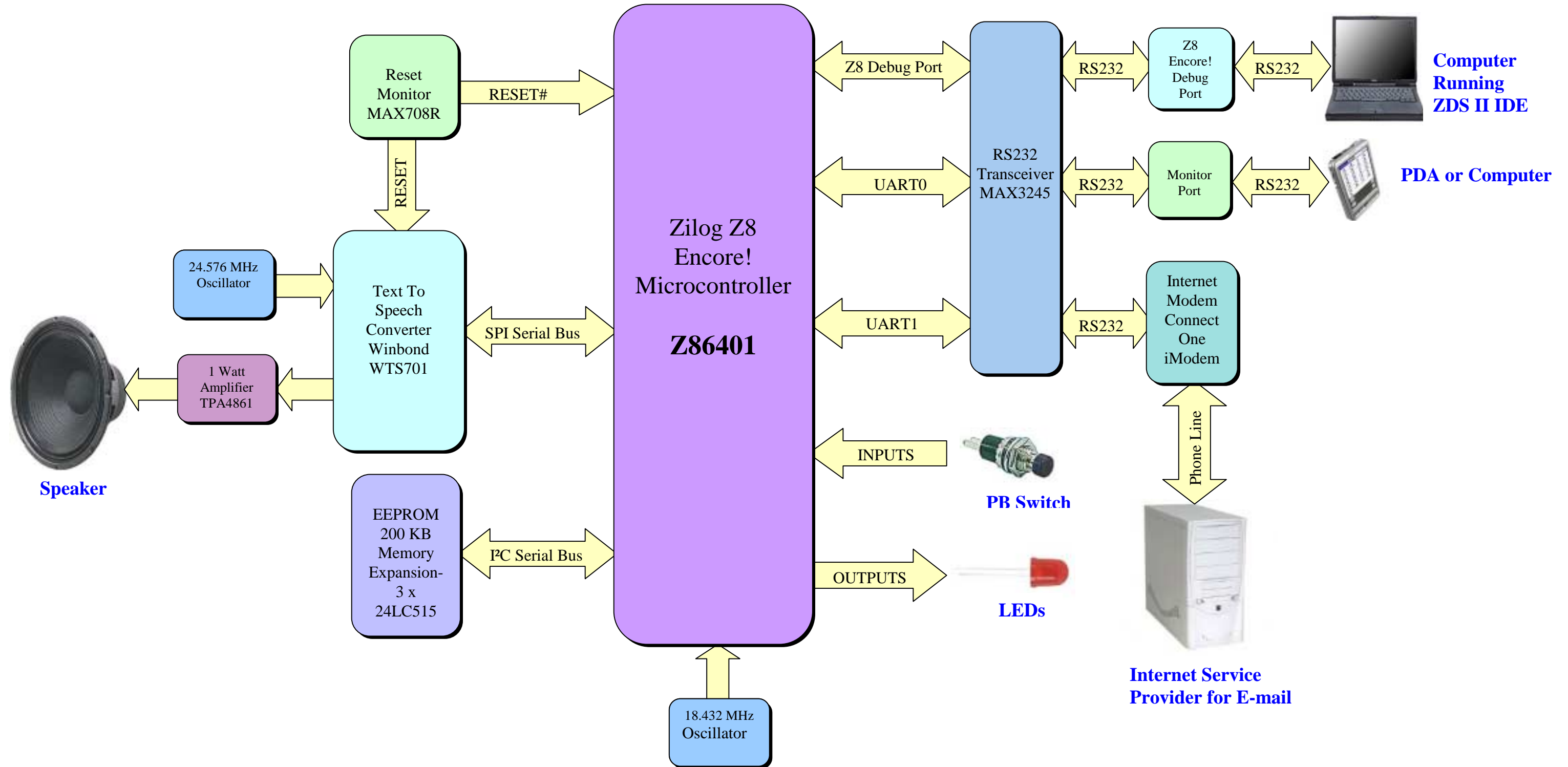
An intelligent, low cost, Zilog Z8 Encore! controlled device that retrieves and filters a user's e-mail and then converts the e-mail to speech without the use of a personal computer.

**System Abstract: (See System Block Diagram)**

The Speak-eZ-Mail system is a totally embedded, low cost e-mail to speech converting design. This unique design uses a Zilog Z8 Encore! microcontroller as the system controller to accomplish the tasks of reading, filtering, storing and converting e-mail to speech. The unique thing about this e-mail to speech converter is that it doesn't require a PC to operate. The user simply plugs a phone line directly into the Speak-eZ-Mail system and then presses a single button to look for a new e-mail message. If a new e-mail message has been received, the system converts the e-mail to speech and announces it to the user. The simplistic nature of the Speak-eZ-Mail system lends itself well to those who desire to receive e-mail, but cannot use a PC (e.g. Disabled persons, visually impaired persons, the elderly, etc.) or those who simply desire not to own a PC due to cost or complexity. There are no totally embedded e-mail to speech designs in the marketplace today similar to the Speak-eZ-Mail; this truly makes the e-mail to speech converting Speak-eZ-Mail system a very unique design.

System Block Diagram:

# Speak-eZ-Mail Block Diagram



**Hardware Description: (Reference Speak-eZ-Mail Schematic)**

**(FRONT SIDE OF BOARD)**

Power Supply  
Circuitry including  
LT1086-3.3

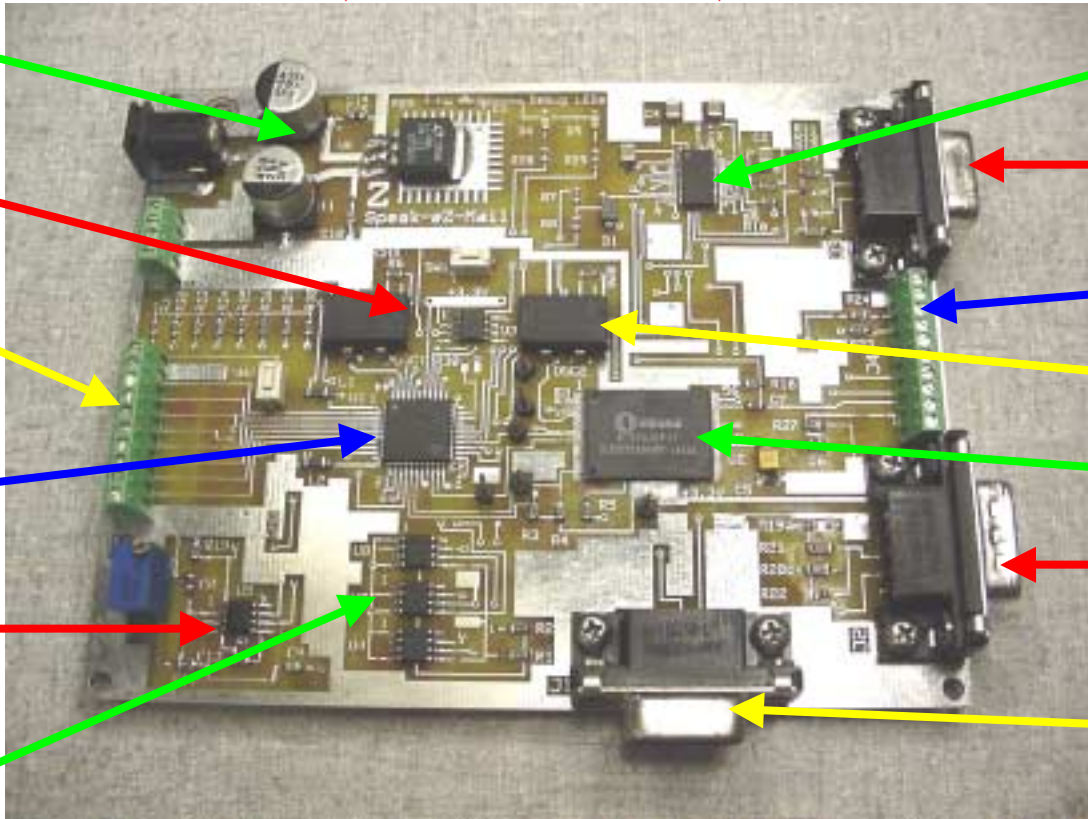
Z8 Oscillator and  
Reset Circuit  
MAX708R

Input and Output  
port to Z8 Encore!

**Zilog Z8 Encore!  
Z86401  
Microcontroller**

1-Watt Amplifier  
Circuit TPA4861

EEPROM  
Memory  
Expansion  
3 x 24LC515



Maxim  
Max3245 RS232  
Transceiver

RS232 Monitor port  
DB9 Connector

Audio and speaker  
connections

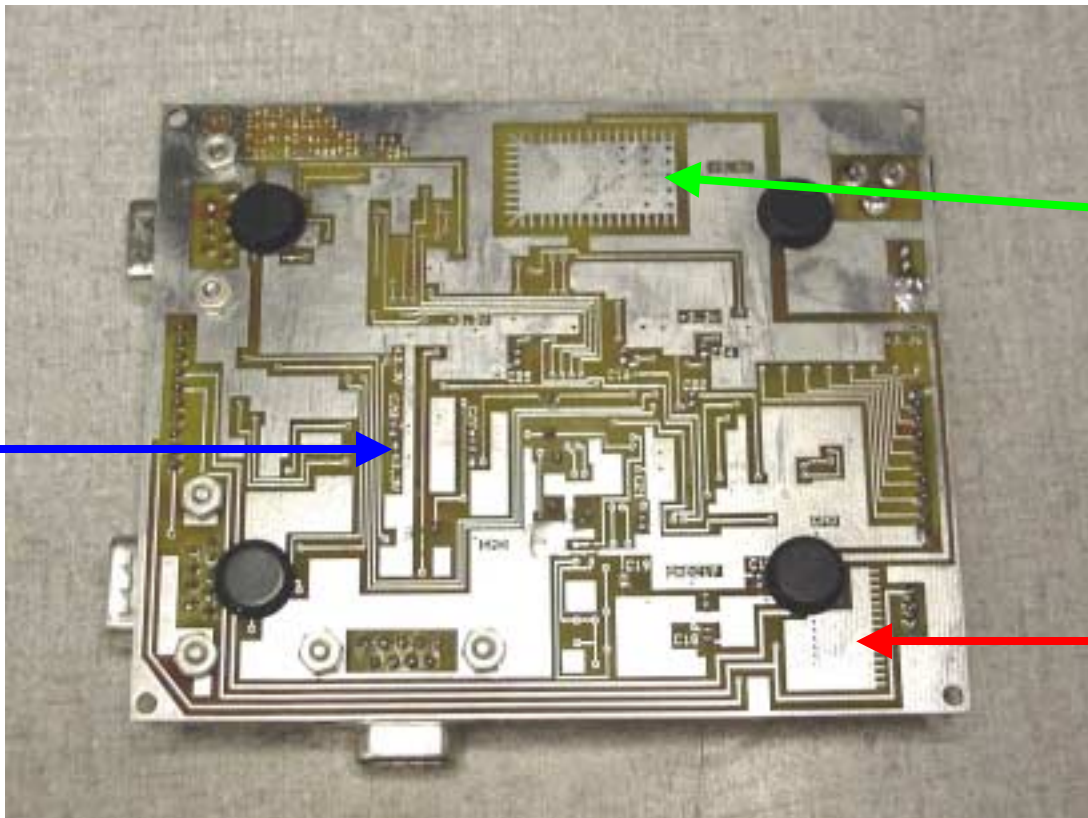
WTS701  
Oscillator

Winbond Text To  
Speech WTS701

RS232 E-mail  
modem DB9  
Connector

RS232 Zilog Z8  
Encore!  
Debug and  
Programming  
Port Connector

All Decoupling  
capacitors on back  
side of board



LT1086-3.3 Heatsink  
in PCB clad, vias  
pipe heat from top  
layer to bottom

TPA4861 Heatsink in  
PCB clad, vias pipe  
heat from top layer to  
bottom

**(BACK SIDE OF BOARD)**

