



**MICROCHIP**

**Connectivity**

**Ethernet**



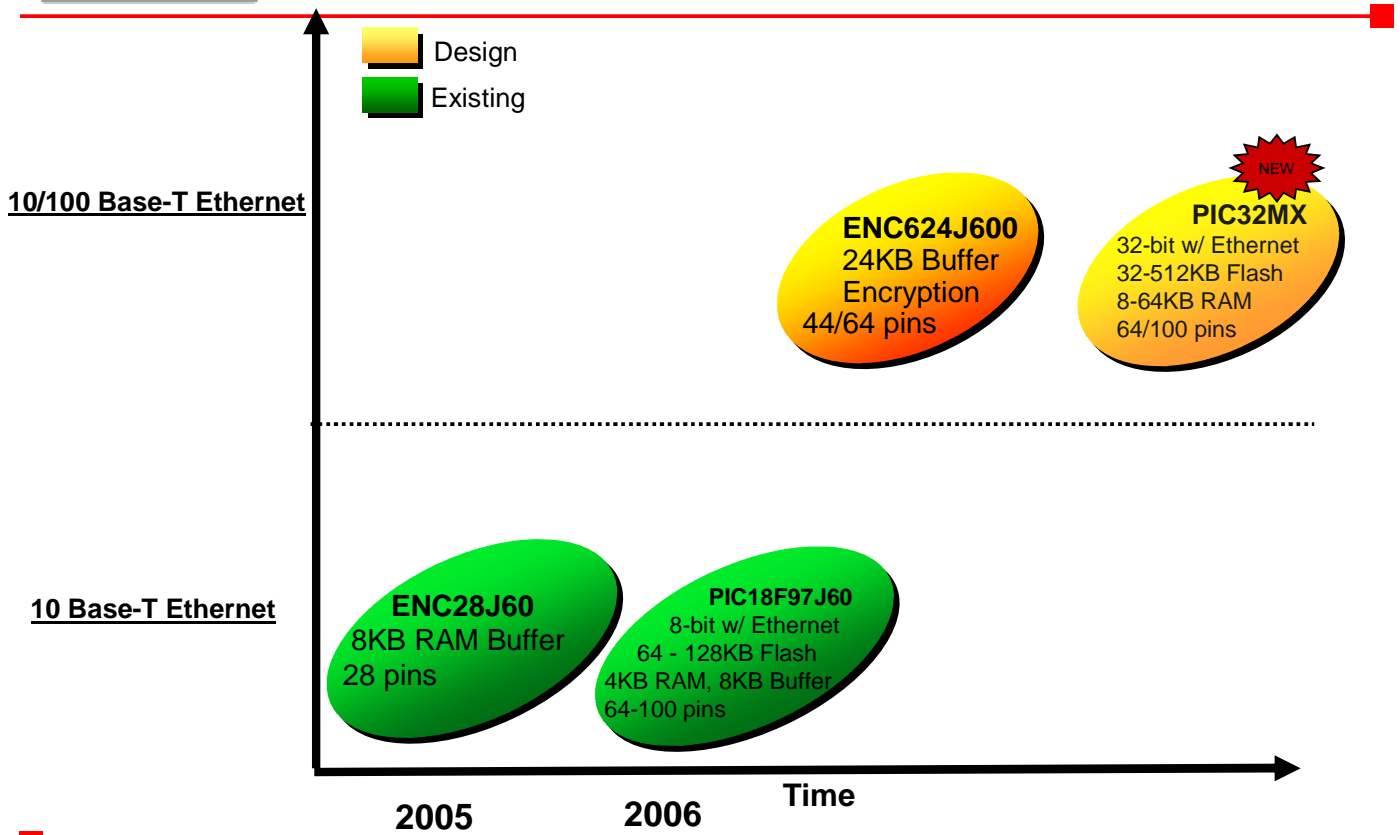
**MICROCHIP**

**ENC624J600**

**Stand-Alone 10/100 Ethernet Controller**

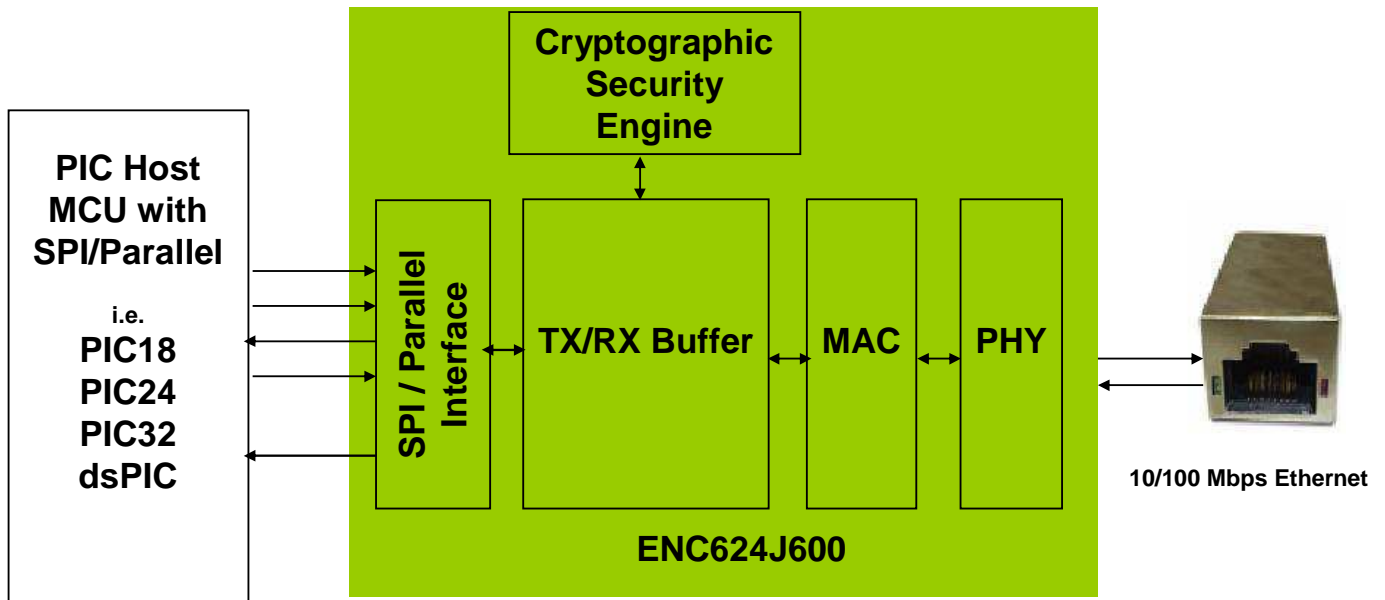


# Ethernet Family Roadmap





# ENC624J600 Block Diagram



Stand-alone Ethernet Controller with MAC and PHY



# ENC624J600 Stand-alone 10/100Mbps Ethernet controller

## Operational Features

- | Operating voltage 3.0 to 3.6V
- | 24 KB Ethernet Buffer
- | Temperature range -40° to 85°C
- | Package options
  - | **44-pin TQFP and QFN**
  - | **64-pin TQFP**
- | 25 MHz Input Clock
- | Clock out pin with programmable frequencies from 50KHz to 33MHz

## Hardware Cryptographic Security Engines

- | RSA® and Diffie-Hellman Key Exchange Algorithms
- | AES Encrypt/Decrypt with up to 256 bit key
- | Hardware AES ECB, CBC,CFB and OFB mode capability
- | Fast MD5 hash computations
- | Fast SHA-1 hash computations
- | Hardware features help accelerate SSL protocol enabled applications

## Ethernet Controller Features

- | IEEE 802.3 complaint
- | Integrated MAC and single port 10/100 Base-T PHY
- | Hardware Security Engines
- | SPI interface with speeds up to 20Mbps
- | Supports JTAG Boundary scan
- | 8 or 16-bit parallel interface for 44- and 64- pin packages
- | MAC
  - | **Supports unicast, multicast and broadcast packets**
  - | **Programmable receive packet filtering**
- | PHY
  - | **Loopback mode**
  - | **Energy Detect power down mode**



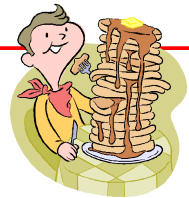
# Application Examples

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- | Telecommunication
- | Inventory Management
- | Remote Diagnostics/alerts
- | Security
- | Sensing/actuators
- | Industrial Control/Automation
- | Data Acquisition
- | VoIP Intercoms
- | Traffic Control/Monitoring
- | Medical Monitoring
- | Networking Control/Monitoring
- | Internet Appliances
- | Instrumentation
- | Home Control/Automation
- | Building Control/Automation



# Microchip TCP/IP Stack



- | **C source code provided**
  - | No-fee license agreement
  - | Use Microchip PIC<sup>®</sup> MCU or dsPIC<sup>®</sup> DSC
  - | Download: [www.microchip.com/tcpip](http://www.microchip.com/tcpip)
  - | ENC624J600 support
- | **PIC18, PIC24, dsPIC DSC, PIC32**
- | **RTOS Independent & Modular**
- | **Supports multiple connections**
- | **Example projects**
- | **Standard Microchip technical support**



# Wi-Fi 802.11

## Wi-Fi ZeroG 802.11 PICTail + Card :

**We have partnered with ZeroG a provider of a low-cost, low-power IEEE 802.11b Wi-Fi transceiver and transceiver module to create a PICTail/PICTail + daughter card that operated with our PIC18Explorer, Explorer16, and PICDEM.Net development boards. ZeroG's solution is ideal for embedded microcontroller applications and works seamlessly with our TCP/IP stack.**

### **Features:**

- | IEEE 802.11b Module from ZeroG
- | Data rate – 1Mbps & 2Mbps
- | Transceiver Module implementation – similar to our MRF24J40MA
- | FCC and Wi-Fi Certified



### **Status:**

- | Demo Kit available NOW – AC164136

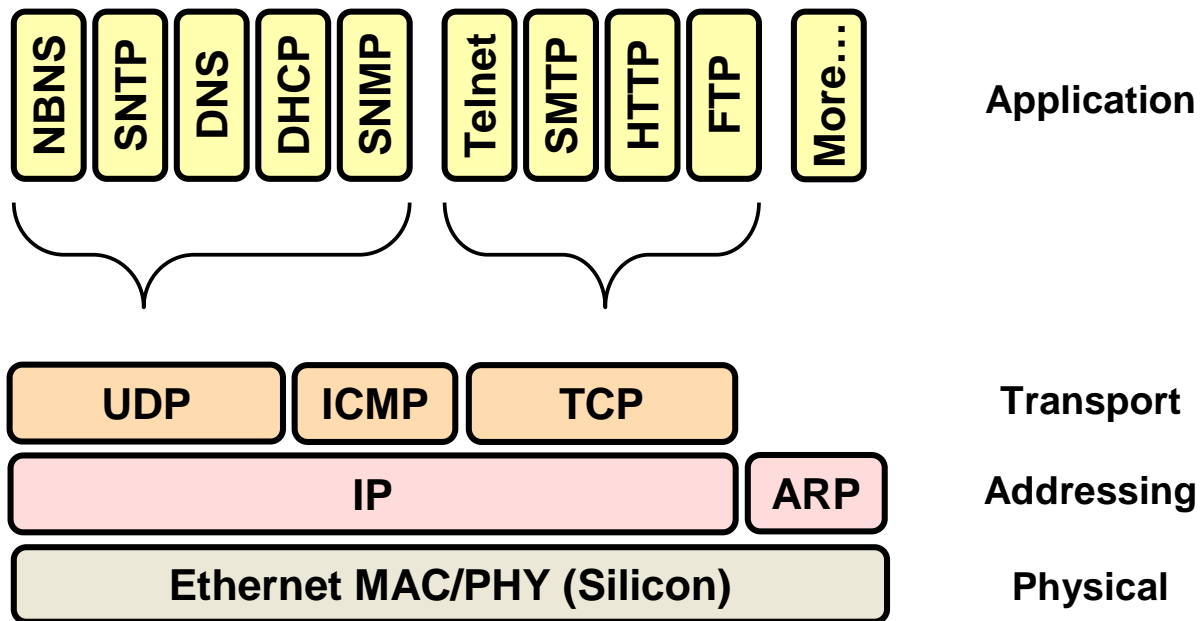
### **Schedule:**

- | TCP/IP Stack with ZeroG driver –TCP/IP ver 5.x
- | Website Update –[www.microchip.com/wireless](http://www.microchip.com/wireless)
- | PICTail/PICTail Plus Daughter Cards – AC164136-2
- | ZG2100M Modules





# What's Included?





**MICROCHIP**

**Сопутствующие  
КОМПОНЕНТЫ**



# MAC Address Chips

Need easy, low-cost access to MAC addresses?

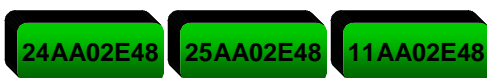
Will access to plug-and-play MAC address chips enable faster time to market?

## EUI-48™ Programmed Serial EEPROMs



### 2 Kb – Serial EEPROMs

1/2 array WP - Hardware    ¼ Array WP - Software    ¼ Array WP - Software



1.8V – 5.5V    1.8V – 5.5V    1.8V – 5.5V  
400KHz    10MHz    100KHz

I<sup>2</sup>C    SPI    UNI/O®

- ü Pre-Programmed 48-bit MAC Address Chips
- ü EUI-48™ & EUI-64™ Compatible
- ü 1.5 Kb Serial EEPROM Functionailty
- ü SPI, I<sup>2</sup>C and UNI/O® Bus
- ü Write-Protected Codes
- ü SOIC and SOT-23





# ...and what does it solve?

## EUI-48™ codes are sold by IEEE – Volume based



Option 1

Option 2

### Step1: Buy Code

\$1,600 to buy 16.7M codes  
\$550 to buy 4096 codes

### Step2: Program MCU

Cost of Serialization & Programming

### Issue:

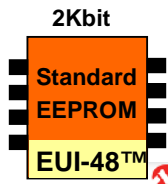
- EUI-48™ is difficult to obtain, expensive, time consuming
- Most MCU's don't come with built-in EUI-48™ Address.



## Microchip's MAC Address Chips

We do all the above!

- ü Low Cost
- ü Easy to access
- ü Faster time to market
- ü EUI-64™ Compatible



Plug-and-Play!

~\$0.25 each!!

- Available in SPI, I<sup>2</sup>C and UNI/O® Bus
- Scratch Pad EEPROM
- Write- Protected

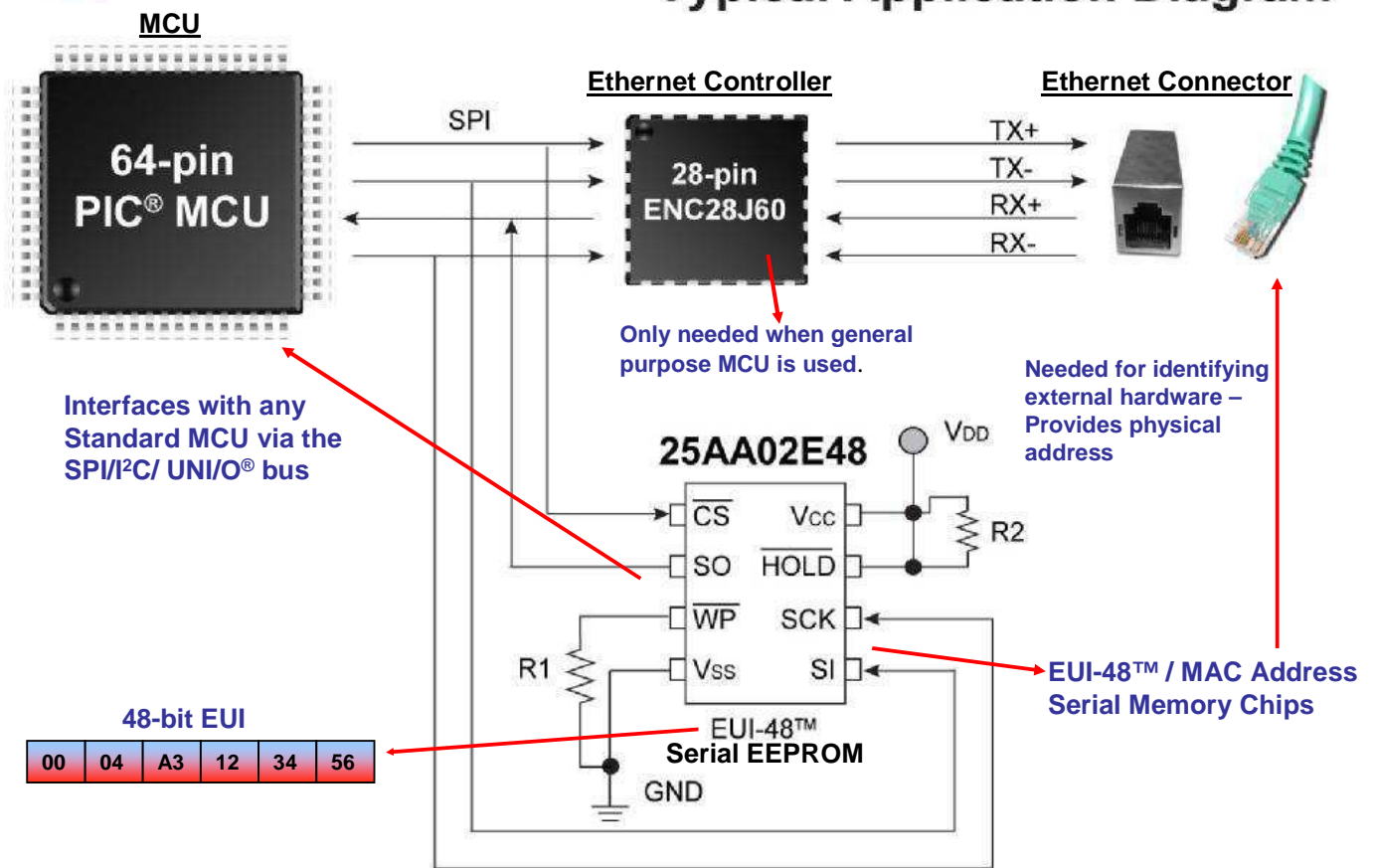
Serial EEPROM Functionality

No Hassles, Easy Access

No Volume Restrictions!!

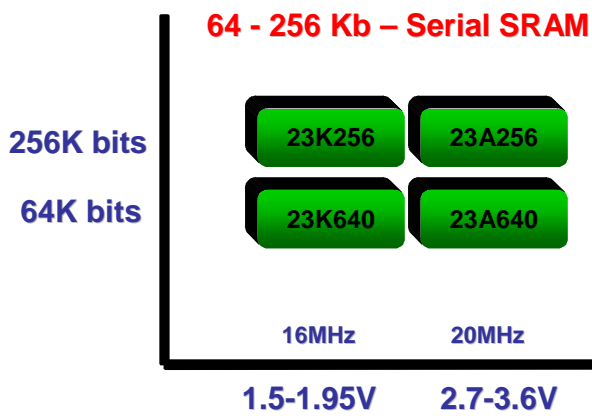


# 25AA02E48 Serial EEPROM Typical Application Diagram





# Serial SRAM



Low-Power CMOS Technology: -  
Read Current: 3 mA at 1 MHz –  
Standby Current: 4  $\mu$ A Max. at 3.6V