

# Technologies of the Month

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January 2007

# Scroll Wheel

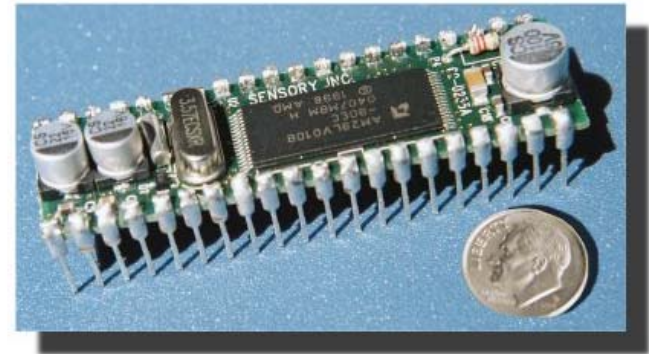
- Quadrature output for wheel position
- Resolution of 8 degrees
- 5-way tactile switch
- Illuminated ring
- 18.5 mm diameter by 1.9 mm high
- \$4 - \$6 each



<http://www.avagotech.com/products/product-detail.jsp?navId=H0,C1,C6029,C6049,C6069,C6089,P101105>

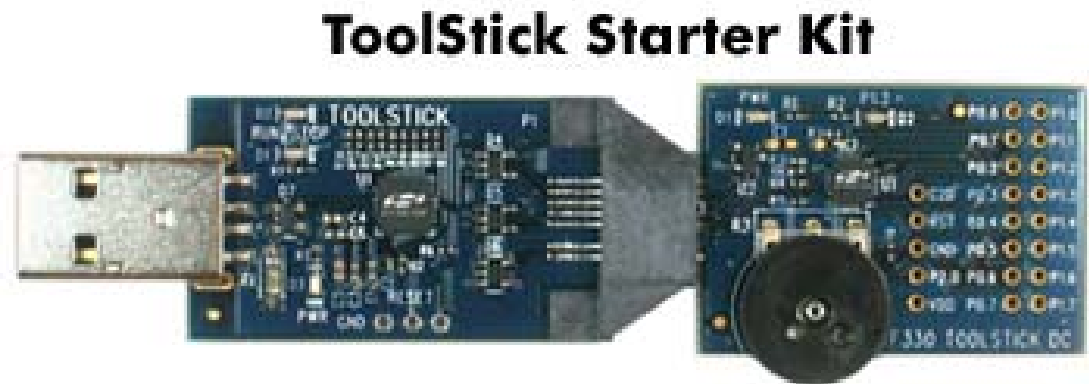
# Voice Recognition Module

- Speaker independent
- 40-pin DIP pin-out
- RS-232 interface
- Toolkit and development systems available
- \$30 in quantity



# ToolStick Starter Kit

- USB-connected base adapter and daughter cards
- 8051-based microcontroller
- Easy access to I/O pins
- Keil software
- \$25



[http://www.silabs.com/tgwWebApp/public/web\\_content/products/Microcontrollers/en/USBToolStick.htm](http://www.silabs.com/tgwWebApp/public/web_content/products/Microcontrollers/en/USBToolStick.htm)

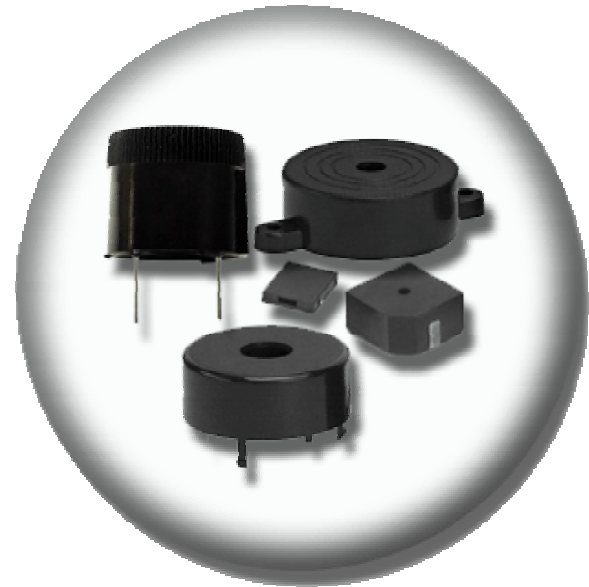
# Programmable Gyro MemS

- Complete analog rate gyroscope
- Digital range scaling
- Calibrated Sensitivity and Bias, with Auto-zero
- SPI interface
- Chip - \$42, Development kit - \$175

<http://www.analog.com/en/prod/0,2877,ADIS16250,00.html>

# Low-cost Audio Alerts

- 3 output options – slow or fast pulse or continuous
- 3 – 24 v
- Less than \$1 each
- 30 by 25 mm



# Low-cost Touch Panel

- 5 programmable backlight colors
- 5 dual-purpose function keys
- 3 inch – 128 x 64 pixels
- 10 lines, up to 32 characters per line
- Graphics and buzzer
- \$189



<http://c-moremicro.automationdirect.com/index.html>

# USB Modules



- Several modules available
  - USB to serial, SPI, uC
  - USB flash drive to serial or SPI
  - USB MP3 flash drive to serial or SPI (audio output)
- Easy to implement command set

<http://www.vinculum.com/products.html>



# Magnetic Sensor



- 3-axis magnetoresistive sensors for low-field magnetic sensing
- 3x3x1.4 mm surface mount

# Wireless Sensor Networking Module

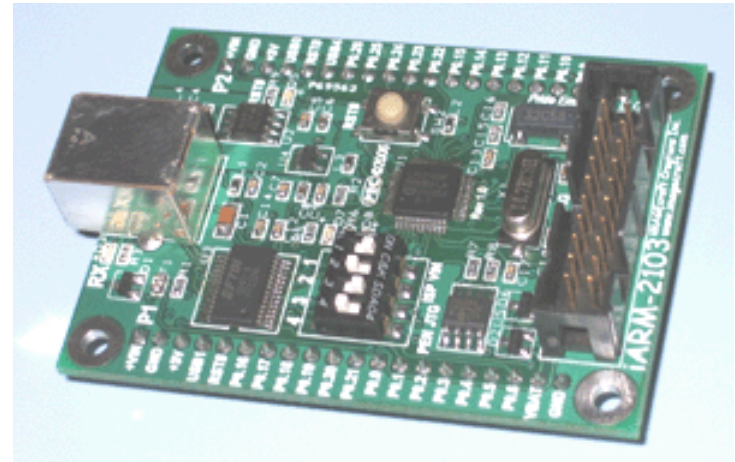


- 600 meter range
- Mesh networking protocol
- Serial interface and 7 I/O ports
- 9.6 Kbs channel data rate
- Ultra-low power
- Development kit available

<http://www.rfm.com/products/wirelessmodules.htm>

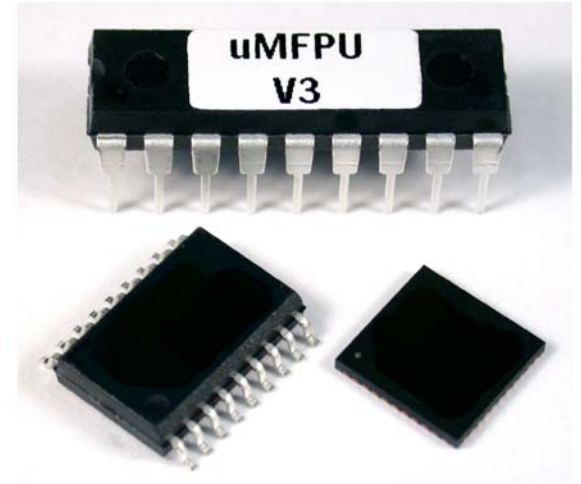
# USB-connected ARM7 processor

- 64 Kb EEPROM
- Real-time clock
- Battery backup
- 2.6 by 1.9”
- \$89
- New unit has 256 Kb Flash and 40 K RAM



<http://www.imagecraft.com/software/>

# Math Chip



- I<sup>2</sup>C or SPI interfaces
- \$20
- Floating point and long integer math
- Matrix, trig, string, FFT operations
- Fast execution

<http://www.micromegacorp.com/umfpu-v3.html>

# Network Interface Board

- TCP/IP stack
- Supports TCP, UDP, IP, ARP, ICMP, and MAC protocols
- I<sup>2</sup>C interface
- 16 Kb memory buffer
- \$22



[http://www.saelig.com/miva/merchant.mvc?Screen=PROD&Product\\_Code=ETH002&Category\\_Code=ETH](http://www.saelig.com/miva/merchant.mvc?Screen=PROD&Product_Code=ETH002&Category_Code=ETH)

# Easy Serial to RF

- Spread spectrum wireless module
- 900 Mhz
- Supports PHY and MAC protocols
- Serial interface
- 1500 foot range
- \$50



<http://www.radiotronix.com/>