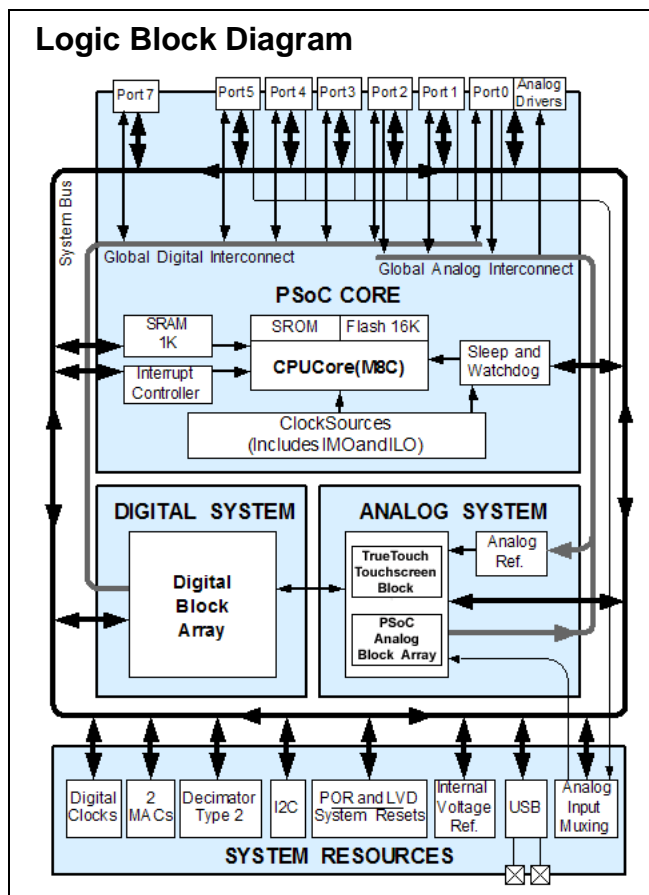# TrueTouch™ Multi-Touch Gesture Touchscreen Controller

Features

- TrueTouch™ Capacitive Touchscreen Controller
  - Supports Single-Touch and Multi-Touch Touchscreen Control
  - Supports up to 45 X/Y Sensor Inputs
  - Supports Screen Sizes 8.5" and Below
  - Fast Scan Rates: Typical 125 us per X/Y Crossing
  - High Resolution: Typical 480 x 360 for 3.5" Screen
  - Available in 56-Pin QFN Package
  - Seamless Transition up to Higher Function Multi-Touch All-Point Device

- Lowest Noise TrueTouch Device

- Highly Configurable Sensing Circuitry
  - Allows Maximum Design Flexibility
  - Allows Trade-Off Between Scan Time and Noise Performance

- Includes Gesture Detection Library

- Develop Customized User Defined Gestures

- Provides Maximum EMI Immunity
  - Selectable Spread-Spectrum Clock Source

- Powerful Harvard Architecture Processor
  - M8C Processor Speeds to 24 MHz
  - Two 8x8 Multiply, 32-Bit Accumulate
  - Low Power at High Speed
  - 3V to 5.25V Operating Voltage
  - Industrial Temperature Range: –40°C to +85°C
  - USB Temperature Range: –10°C to +85°C

- Full-Speed USB (12 Mbps)
  - Four Uni-Directional Endpoints
  - One Bi-Directional Control Endpoint
  - USB 2.0 Compliant
  - Dedicated 256 Byte Buffer
  - No External Crystal Required

- Flexible On-Chip Memory
  - 16K Flash Program Storage, 50000 Erase/Write Cycles
  - 1K SRAM Data Storage
  - In-System Serial Programming (ISSP)
  - Partial Flash Updates
  - Flexible Protection Modes
  - EEPROM Emulation in Flash

- Precision, Programmable Clocking
  - Internal ±4% 24 and 48 MHz Oscillator
  - Internal Oscillator for Watchdog and Sleep
  - 25% Accuracy for USB with no External Components

- Additional System Resources
  - I^2C™ Slave, Master, and Multi-Master to 400 kHz
  - Watchdog and Sleep Timers
  - User-Configurable Low Voltage Detection
  - Integrated Supervisory Circuit
  - On-Chip Precision Voltage Reference

- Complete Development Tools
  - Free Development Software (PSoC Designer™)
  - TrueTouch Touchscreen Tuner
  - Full-Featured, In-Circuit Emulator and Programmer
  - Full Speed Emulation
  - Complex Breakpoint Structure
  - 128K Bytes Trace Memory

- Programmable Pin Configurations
  - 25 mA Sink on All GPIO
  - Pull Up, Pull Down, High Z, Strong, or Open Drain Drive Modes on All GPIO
  - Configurable Interrupt on All GPIO

Logic Block Diagram

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Document Number: 001-46929 Rev. **   Revised June 17, 2008

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Document History Page

Document Title: CY8CTMG120 TrueTouch™ Multi-Touch Gesture Touchscreen Controller Document Number: 001-46929				
Revision	ECN	Orig. of Change	Submission Date	Description of Change
**	2518134	DSO/AESA	06/18/08	New data sheet

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