

# TrueTouch® Multi-Touch All-Points Touchscreen Controller

## Features

- TrueTouch® capacitive touchscreen controller
  - Tracks up to four fingers independently
  - Screen sizes up to 4.5" diagonal
    - Can support up to 7" diagonal with stretched sensor pitch
  - Up to 32 sense pins. Senses up to 252 intersections
  - Resistive stylus replacement
    - Passive stylus with 1-mm tip
  - Best in class water rejection – no false touches
  - Large object detection
  - Fat finger detection and tracking
  - Charger Armor™ technology that provides battery charger noise immunity
  - Self-calibrating to environmental changes
  - Smart noise suppression in LCD, battery charger, common-mode, and RF environments
  - Android and Windows Phone Series 7 compliant
  - Supports unregulated dual-rail inputs
    - 1.71 V to 3.6 V digital supply voltage
    - 2.7 V to 3.6 V analog supply voltage
    - Supports single shared supply from 2.7 V to 3.6 V
- Performance
  - Best in class SNR
  - Noise-free resolution: 0.1 mm
  - Accuracy: 0.5 mm
  - Finger separation: 3.5 mm
  - >60-Hz Refresh Rate with up to four fingers on the touchscreen
  - Low-power state current less than 1.3 mA
  - Deep sleep state current of 1  $\mu$ A
- Extended feature set
  - Best in class wet-finger tracking
  - Integrated CapSense button support
- Sensor and system design
  - Supports chip-on-flex and chip-on-board
  - Configurable to work with plastic film and glass touch sensors
  - Supports a variety of touchscreen sensors and stackups
- Communication interface
  - I<sup>2</sup>C slave up to 400 kHz
  - SPI slave with 2 Mbps sustained data throughput
  - Field upgrades through integrated bootloader
- Host development kit (HDK)
  - Android and Windows Phone Series 7 drivers
  - Supports custom driver development
  - TrueTouch Host Emulator – acts as host for early prototyping
- Manufacturing test
  - Integrated test firmware
- Package options
  - 36-pin 5 × 5 × 0.6 mm QFN
  - 48-pin 6 × 6 × 0.6 mm QFN
  - 49-ball 3.2 × 3.2 × 0.55 mm CSP

## Ordering Information

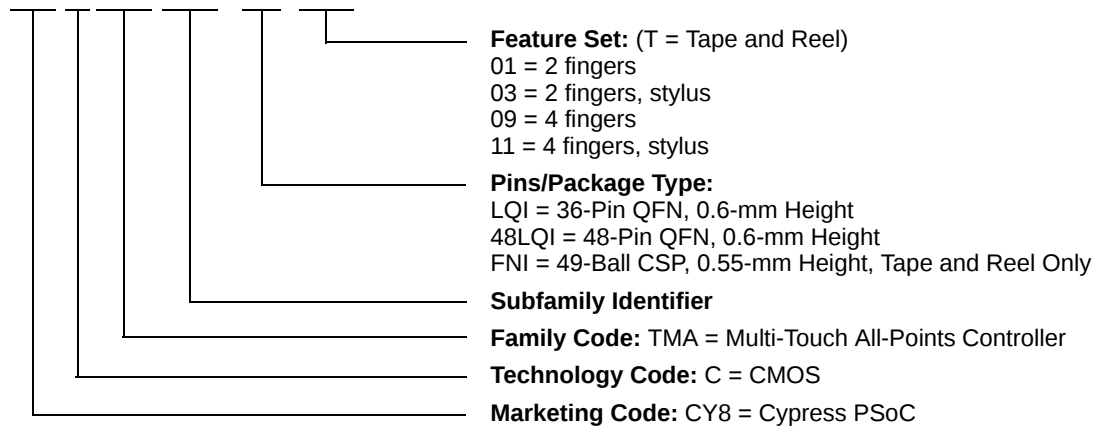
Table 1 lists the TrueTouch Standard Product Multi-Touch All-Points Touchscreen Controllers. The table contains only the parts that are currently available. If you do not see what you are looking for, contact your local sales representative. For more information, visit the Cypress website at [www.cypress.com](http://www.cypress.com) and refer to the product summary page at <http://www.cypress.com/products>.

**Table 1. Device Ordering Information**

| Part Number            | TrueTouch                                |               |                 |                     |               |                 |                          |                        |        | Sensor |      | Minimum Interface Voltage | Digital Supply Voltage Operating Range | Analog Supply Voltage Operating Range | Bootloader | I <sup>2</sup> C | SPI | Package    | Unique ID |
|------------------------|------------------------------------------|---------------|-----------------|---------------------|---------------|-----------------|--------------------------|------------------------|--------|--------|------|---------------------------|----------------------------------------|---------------------------------------|------------|------------------|-----|------------|-----------|
|                        | Max Screen Size (in.) (4:3 Aspect Ratio) | Maximum Nodes | Maximum Fingers | Ghost-Free Tracking | Charger Armor | Water Rejection | On-chip Gesture Decoding | Large Object Detection | Stylus | Glass  | Film |                           |                                        |                                       |            |                  |     |            |           |
| CY8CTMA340-LQI-11(T)   | 3.2                                      | 132           | 4               | ✓                   | ✓             | ✓               | ✓                        | ✓                      | ✓      | ✓      | ✓    | 1.8                       | 1.71–3.6                               | 2.7–3.6                               | ✓          | ✓                | ✓   | 36-pin QFN | 058DH     |
| CY8CTMA340-48LQI-11(T) | 4.5                                      | 252           | 4               | ✓                   | ✓             | ✓               | ✓                        | ✓                      | ✓      | ✓      | ✓    | 1.8                       | 1.71–3.6                               | 2.7–3.6                               | ✓          | ✓                | ✓   | 48-pin QFN | 058EH     |
| CY8CTMA340-LQI-09(T)   | 3.2                                      | 132           | 4               | ✓                   | ✓             | ✓               | ✓                        | ✓                      | –      | ✓      | ✓    | 1.8                       | 1.71–3.6                               | 2.7–3.6                               | ✓          | ✓                | ✓   | 36-pin QFN | 0590H     |
| CY8CTMA340-48LQI-09(T) | 4.5                                      | 252           | 4               | ✓                   | ✓             | ✓               | ✓                        | ✓                      | –      | ✓      | ✓    | 1.8                       | 1.71–3.6                               | 2.7–3.6                               | ✓          | ✓                | ✓   | 48-pin QFN | 0591H     |
| CY8CTMA340-FNI-09T     | 4.5                                      | 252           | 4               | ✓                   | ✓             | ✓               | ✓                        | ✓                      | –      | ✓      | ✓    | 1.8                       | 1.71–3.6                               | 2.7–3.6                               | ✓          | ✓                | ✓   | 49-pin CSP | 0592H     |
| CY8CTMA340-48LQI-03(T) | 4.5                                      | 252           | 2               | ✓                   | ✓             | ✓               | ✓                        | ✓                      | ✓      | ✓      | ✓    | 1.8                       | 1.71–3.6                               | 2.7–3.6                               | ✓          | ✓                | ✓   | 48-pin QFN | 0597H     |
| CY8CTMA340-48LQI-01(T) | 4.5                                      | 252           | 2               | ✓                   | ✓             | ✓               | ✓                        | ✓                      | –      | ✓      | ✓    | 1.8                       | 1.71–3.6                               | 2.7–3.6                               | ✓          | ✓                | ✓   | 48-pin QFN | 059AH     |
| CY8CTMA340-FNI-01T     | 4.5                                      | 252           | 2               | ✓                   | ✓             | ✓               | ✓                        | ✓                      | –      | ✓      | ✓    | 1.8                       | 1.71–3.6                               | 2.7–3.6                               | ✓          | ✓                | ✓   | 49-pin CSP | 059BH     |

## Ordering Code Definitions

CY8 C TMA 340 - xxx xx(T)



## Document History Page

| Document Title: CY8CTMA340, TrueTouch® Multi-Touch All-Points Touchscreen Controller<br>Document Number: 001-91023 |         |                 |                 |                        |
|--------------------------------------------------------------------------------------------------------------------|---------|-----------------|-----------------|------------------------|
| Rev.                                                                                                               | ECN     | Orig. of Change | Submission Date | Description of Change  |
| **                                                                                                                 | 4278978 | SWU             | 02/12/2014      | New summary datasheet. |

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