



TMG240 TrueTouch[®] Multi-touch Gesture Touchscreen Controller

Features

■ Multi-touch capacitive touchscreen controller

- Two finger positions reported
 - Second finger used for gesture detection
- Screen sizes up to 3.6-in. diagonal
- Up to 32 sense I/O
- Large-finger detection and tracking
- Large-object detection
- Self-calibrating to environmental changes
- Resistant to LCD noise
- Robust operation in noisy RF environments
- 1.71 to 5.5V input supply range
 - Single supply voltage
 - Compatible with 1.8V I²C signaling
 - Integrated voltage regulators – no need for dedicated voltage regulators

■ Performance

- Noise-free resolution: 0.1mm
- Accuracy with one finger on the touchscreen: 0.8mm
- Finger separation: 3.5mm
- Refresh rate: >110Hz with one finger on the touchscreen
- Best-in-class active power: 3.6mW
- Best-in-class low-power state current: 0.7mA
- Best-in-class deep-sleep state current: 100nA

■ Extended feature set

- Water rejection – no false touches
- Capacitive buttons supported
- On-chip gesture detection
 - Single-click, double-click, and two-finger clicks
 - One-finger and two-finger pan gestures
 - Zoom-in and zoom-out

■ Sensor and system design

- Supports chip-on-flex and chip-on-board
- Supports plastic film and glass touch sensors
- Supports a variety of touchscreen sensors and stackups

■ Communication interface

- I²C slave at 100 and 400kbps
- SPI slave with 2Mbps sustained data throughput
- Field upgrades through integrated bootloader

■ Host development kit (HDK)

- Android™ driver support
- Supports custom driver development
- TrueTouch[®] host emulator – acts as host for early prototyping

■ Package options

- 32-pin 5 × 5 × 0.55mm QFN
- 48-pin 7 × 7 × 1.0mm QFN
- 30-ball 2.2 × 2.32 × 0.4mm WLCSP

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Parade Technologies, Inc.

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Ordering Information

The following table lists the TMG240 TrueTouch Multi-touch gesture touchscreen controller ordering information. For information on other TrueTouch families, visit <http://www.paradetech.com/products/products-overview/>.

Device Ordering Information

Part Number	TrueTouch Features					Sensors		Minimum Interface Voltage	Supply Voltage Operating Range	Bootloader	I ² C	SPI	UART	Package
	Typical Screen Size (in.) (4:3 Aspect Ratio)	# of Sense I/O	# of Finger Touches Recognized	On-chip Gesture Decoding	Large-Object Detection	Glass	Film							
TMG240-LQI-01(T)	3.3	24	2	✓	✓	✓	✓	1.8	1.71 – 5.5	✓	✓	✓	✓	32-pin QFN
TMG240-LTI-01(T)	3.6	32	2	✓	✓	✓	✓	1.8	1.71 – 5.5	✓	✓	✓	✓	48-pin QFN
TMG240-FNC-01(T)	3.3	24	2	✓	✓	✓	✓	1.8	1.71 – 5.5	✓	✓	✓	✓	30-ball WLCSP

Ordering Code Definitions

