



SUMMARY

CYTT21XXX
(28, 33, 35, 36 I/Os)

TrueTouch[®] Multi-Touch All-Points Touchscreen Controller Datasheet

Features

- Multi-touch capacitive touchscreen controller
 - 32-bit ARM[®] Cortex[™] CPU
 - Register-configurable
 - Noise-suppression technologies for battery charger and display
 - Effective 24-V drive for higher signal-to-noise ratio (SNR)
 - ChargerArmor[™] for charger noise immunity
 - External display synchronization
 - Water rejection and wet-finger tracking using DualSense[™]
 - Multi-touch glove with automatic mode switching
 - Ten fingers with thin glove (≤1-mm thick)
 - Two fingers with thick glove (≤5-mm thick)
 - Fingernail tracking
 - Face detection up to 25 mm with grip suppression
 - Large object rejection
 - Automatic baseline tracking to environmental changes
 - Low-power look-for-touch mode
 - Field upgrades via bootloader
 - Android[™] and Windows[®] Phone 8 driver support
 - Cypress Manufacturing Test Kit (MTK)
 - Touchscreen sensor self-test and Panel ID reporting
- System performance (configuration dependent)
 - Screen sizes up to 5.0-inch diagonal
 - 4.8-mm sensor pitch; 16:9 aspect ratio
 - Up to 36 sense pins
 - 308 intersections (22 × 14)
 - Reports up to ten fingers
 - Small finger support down to 4 mm
 - Large finger support up to 30 mm
 - Refresh rate up to 300 Hz; other rates configurable
 - TX frequency up to 500 kHz
 - Best-in-class charger noise immunity
 - Immunity up to 35-V peak-to-peak (V_{PP})
 - Immunity to AT&T[®] Zero charger
- Power (configuration-dependent)
 - 1.71- to 1.95-V or 2.0- to 5.5-V digital and I/O supply
 - 2.65- to 4.7-V analog supply
 - 4-mW average power
 - 5.7- μ W typical deep-sleep power
- Sensor and system design (configuration-dependent)
 - Supports a variety of touchscreen sensors and stackups
 - Manhattan, diamond, Single-Layer Independent Multi-touch (SLIM[®]), and Totem-pole patterns
 - Sensor-on-Lens (SOL)
 - Plastic (PET) and glass-sensor substrates
 - LCD, AMOLED, and IPS displays
 - Metal mesh
 - Single-layer flexible printed circuit (FPC) routing enabled by flexible TX/RX configurations
- Communication interface
 - I²C slave at 100 and 400 kbps
 - SPI slave bit rates up to 8 Mbps^[1]
- Package options
 - 44-pin 5 × 5 × 0.6-mm QFN (0.35-mm lead pitch)
 - 48-pin 6 × 6 × 0.6-mm QFN (0.4-mm lead pitch)

Note

1. SPI support is only available in 48-pin QFN package.

Ordering Information

Table 1 lists the CYTT21XXX TrueTouch touchscreen controllers. For information on other TrueTouch families, visit <http://www.cypress.com/truetouch>.

Table 1. Device Ordering Information

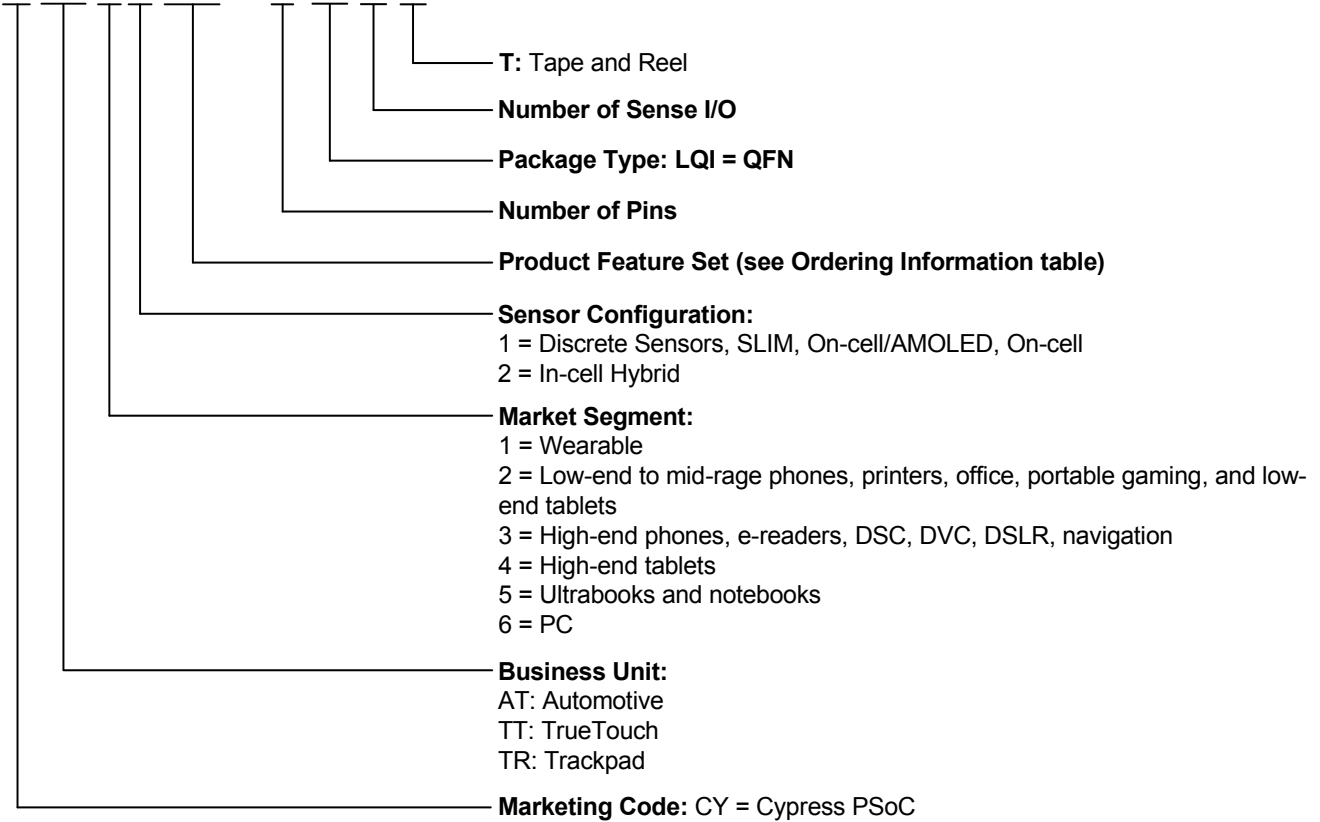
Part Number	Top Marking	TrueTouch						Package
		Sense I/O	Base Features ^[2]	Advanced Wet-finger Tracking	Glove	Easy Wake	Face Detection	Type
CYTT21100-44LQI28(T)	CYTT21000-44LQI	28	✓	–	–	–	–	44-Pin QFN
CYTT21401-44LQI28(T)	CYTT21000-44LQI	28	✓	✓	✓	–	–	44-Pin QFN
CYTT21402-44LQI28(T)	CYTT21000-44LQI	28	✓	✓	✓	✓	–	44-Pin QFN
CYTT21100-44LQI33(T)	CYTT21000-44LQI	33	✓	–	–	–	–	44-Pin QFN
CYTT21401-44LQI33(T)	CYTT21000-44LQI	33	✓	✓	✓	–	–	44-Pin QFN
CYTT21402-44LQI33(T)	CYTT21000-44LQI	33	✓	✓	✓	✓	–	44-Pin QFN
CYTT21100-44LQI35(T)	CYTT21000-44LQI	35	✓	–	–	–	–	44-Pin QFN
CYTT21401-44LQI35(T)	CYTT21000-44LQI	35	✓	✓	✓	–	–	44-Pin QFN
CYTT21402-44LQI35(T)	CYTT21000-44LQI	35	✓	✓	✓	✓	–	44-Pin QFN
CYTT21403-44LQI35(T)	CYTT21000-44LQI	35	✓	✓	✓	✓	✓	44-Pin QFN
CYTT21100-48LQI36(T)	CYTT21000-48LQI	36	✓	–	–	–	–	48-Pin QFN
CYTT21401-48LQI36(T)	CYTT21000-48LQI	36	✓	✓	✓	–	–	48-Pin QFN
CYTT21402-48LQI36(T)	CYTT21000-48LQI	36	✓	✓	✓	✓	–	48-Pin QFN
CYTT21403-48LQI36(T)	CYTT21000-48LQI	36	✓	✓	✓	✓	✓	48-Pin QFN

Notes

2. All devices have the following base features: Water Rejection, ChargerArmor, CapSense buttons, Large Object Detection and Rejection, and Grip Suppression.

Ordering Code Definitions

CY TT Y Y XXX – ## LQI ZZ (T)





Document History Page

Document Title: CYTT21XXX (28, 33, 35, 36 I/Os) TrueTouch® Multi-Touch All-Points Touchscreen Controller Datasheet Document Number: 001-96564				
Revision	ECN	Orig. of Change	Submission Date	Description of Change
**	4670224	SWU	02/25/2015	New datasheet.

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