

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)
 - Two inigers with thick giove (So-i
 - Fingernail tracking
 - Grip suppression
 Large object rejection
 - Large object rejection
 Automatic baseline tracking to env
 - Automatic baseline tracking to environmental changes
 Low-power look-for-touch mode
 - □ Field upgrades via bootloader
 - ☐ Android[™] 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-µW 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.

Cypress Semiconductor Corporation Document Number: 001-96564 Rev. *A **SUMMARY**



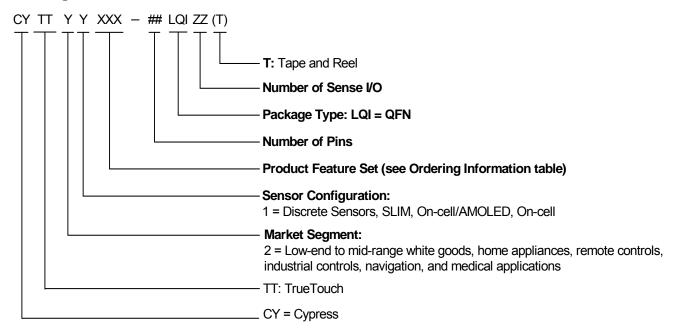
Ordering Information

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

	Top Marking	TrueTouch					Package
Part Number		Sense I/O	Base Features ^[2]	Advanced Wet-finger Tracking	Glove	Easy Wake	Туре
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
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
CYTT21403-48LQI36(T)	CYTT21000-48LQI	36	~	~	~	~	48-Pin QFN

Ordering Code Definitions



Note

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



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.	
*A	5141053	ELG	02/17/2016	Updated Ordering Information and Ordering Code Definitions.	

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