



TT41XXX/TT42XXX TrueTouch® Multi-touch All-points Touchscreen Controllers

Features

- Multi-touch capacitive touchscreen controller
 - 32-bit ARM® Cortex® CPU
 - Register-configurable
 - Noise-suppression technologies for battery charger and display
 - Effective 20V TX drive for higher signal-to-noise ratio (SNR)^[1]
 - ChargerArmor™ for charger noise immunity
 - External display synchronization
 - Water rejection and wet-finger tracking using DualSense™
 - 2.5-mm passive stylus with automatic mode switching and palm rejection
 - Multi-touch glove with automatic mode switching
 - 10 fingers with thin glove (≤1mm thick)
 - 2 fingers with thick glove (≤3mm thick)
 - Fingernail tracking
 - Large-object rejection
 - Automatic baseline tracking to environmental changes
 - Low-power look-for-touch mode
 - Field upgrades via bootloader
 - Android™ driver support
 - Parade Technologies™ TrueTouch® Manufacturing Test Kit (MTK)
 - Touchscreen sensor self-test and Panel ID reporting
- System performance (configuration-dependent)
 - Screen sizes up to 12.6-inch diagonal
 - 5.0-mm electrode pitch; 16:10 aspect ratio
 - Up to 88 sense I/O
 - 1836 intersections (34 TX × 54 RX)
- Reports up to 10 fingers
- Small finger support down to 4mm
- Refresh rate up to 250Hz; other rates configurable
- TX frequency up to 350kHz
- Best-in-class charger noise immunity
 - Immunity up to 10V peak-to-peak (V_{PP})
 - Immunity to AT&T® Zero charger
- Power (configuration-dependent)
 - 1.71- to 1.95-V and 3.0- to 5.5-V digital and I/O supply
 - 3.0- to 5.5-V analog supply
 - 30-mW average power
 - 30-μW typical deep-sleep power
- Sensor and system design (configuration-dependent)
 - Supports a variety of touchscreen sensors and stackups
 - Manhattan, Diamond
 - Sensor-on-Lens (SOL)
 - Plastic (PET) and glass-sensor substrates
 - LCD, AMOLED, and IPS displays
 - Metal mesh
- Communication interface
 - I²C slave at 100 and 400kHz
 - SPI slave bit rates up to 8MHz
- Package
 - 111-ball, 7 × 5 × 0.6-mm μFBGA

Note

1. Effective voltage when using 17 multi-phase TX and 5-V V_{CCTX} supply.

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Ordering Information

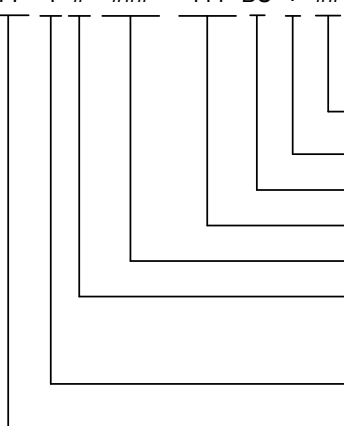
The following table lists the TT41XXX/TT42XXX 65, 88 I/O TrueTouch Multi-touch all-points touchscreen controller ordering information. For information on other TrueTouch families, visit <http://www.paradetech.com/products/products-overview/>.

Ordering Information^[2]

MPN	Top Marking	Features				
		# of Sense I/O	Wet Finger Tracking	Glove	Passive Stylus	In-cell
CYTT41100-111BUI65	CYTT41101-111BUI	65				
CYTT41101-111BUI65	CYTT41101-111BUI	65	✓			
CYTT41401-111BUI65	CYTT41101-111BUI	65	✓	✓		
CYTT41701-111BUI65	CYTT41101-111BUI	65	✓	✓	✓	
CYTT41100-111BUI88	CYTT41101-111BUI	88				
CYTT41101-111BUI88	CYTT41101-111BUI	88	✓			
CYTT41401-111BUI88	CYTT41101-111BUI	88	✓	✓		
CYTT41701-111BUI88	CYTT41101-111BUI	88	✓	✓	✓	
CYTT42401-111BUI88	CYTT42000-111BUI	88	✓	✓		✓
TT41100-111BUI65	TT41101-111BUI	65				
TT41101-111BUI65	TT41101-111BUI	65	✓			
TT41401-111BUI65	TT41101-111BUI	65	✓	✓		
TT41701-111BUI65	TT41101-111BUI	65	✓	✓	✓	
TT41100-111BUI88	TT41101-111BUI	88				
TT41101-111BUI88	TT41101-111BUI	88	✓			
TT41401-111BUI88	TT41101-111BUI	88	✓	✓		
TT41701-111BUI88	TT41101-111BUI	88	✓	✓	✓	
TT42401-111BUI88	TT42000-111BUI	88	✓	✓		✓

Ordering Code Definitions

TT 4 # ### - 111 BU I ##



- Number of Sense I/O (##):** 65 or 88
- Temperature Range:** I = Industrial
- Package Type:** BU = BGA
- Number of Pins (##):** 111
- Product Feature Set (###):** See **Ordering Information** table
- Sensor Configuration (#):**
 1 = Discrete Sensors, On-cell/AMOLED, On-cell
 2 = In-cell
- Market Segment:** 4 = High-end tablets
- Business Unit:** TT = TrueTouch

Note

2. All devices have the following base features in a 111-Pin µFBGA package: ChargerArmor, Water Rejection, DualSense, CapSense buttons, Large-Object Detection and Rejection, and Grip Suppression.