Features

- Multi-touch capacitive touchscreen controller
  - 32-bit ARM® Cortex® CPU
  - Register configurable
  - Noise-suppression technologies for battery charger and display
    - Effective 28V TX 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
    - 10 fingers with thin glove (≤1mm thickness)
    - 2 fingers with thick glove (≤5mm thickness)
  - Fingernail tracking
  - 1mm passive stylus with palm rejection
  - Hover finger tracking
  - Large-object rejection
  - Automatic baseline tracking to environmental changes
  - Low-power look-for-touch mode
  - Field upgrades via bootloader
  - Android™ and Windows® 8 driver support
  - Parade Technologies™ TrueTouch® Manufacturing Test Kit (MTK)
  - Touchscreen sensor self-test and Panel ID reporting

- System performance (configuration dependent)[1]
  - Screen sizes up to 8.3-in. diagonal
    - 5mm sensor pitch, 16:9 aspect ratio
  - Screen sizes up to 5.3-in. diagonal
    - 3.2mm sensor pitch, 16:9 aspect ratio
  - Up to 58 sense I/O
    - 777 intersections (21 x 37)
  - Reports up to 10 fingers

- Small finger support down to 4mm
- Large finger support up to 30mm
- Refresh rate up to 230Hz
- TX frequency up to 500kHz
- Fast first-touch response (≤13ms)
- Best-in-class charger noise immunity
  - Immunity up to 20V peak-to-peak (VPP)
  - Immunity to AT&T® Zero charger

- Power (configuration dependent)[1]
  - 1.71 to 5.5V digital and I/O supply
  - 2.65 to 5.5V analog supply
  - 12mW average power
  - 15μW typical deep-sleep power

- Sensor and system design (configuration dependent)[1]
  - 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 all standard bit rates
    - 100kbps, 400kbps, 1Mbps, and 3.4Mbps
  - SPI slave bit rates up to 8Mbps

- Package options
  - 56-pin 6 x 6 x 0.6mm QFN (0.35mm lead pitch)
  - 70-ball 5.5 x 5.5 x 0.6mm BGA (0.5mm ball pitch)

Note
1. Performance has been verified on a 5.3-in. panel with 3.2mm sensor pitch.
## Ordering Information

The following table lists the TMA568 TrueTouch Multi-touch all-points touchscreen controller ordering information. For information on other TrueTouch families, visit [http://www.paradetech.com/products/products-overview/](http://www.paradetech.com/products/products-overview/).

### Device Ordering Information

<table>
<thead>
<tr>
<th>Segmentation</th>
<th>Part Number</th>
<th>Ext</th>
<th># of Sense I/O</th>
<th>Typ Screen Size (in.)</th>
<th>In-cell</th>
<th>Charger Armor</th>
<th>Configurable TX Slew Rate</th>
<th>Passive Stylus</th>
<th>Glove</th>
<th>Hover</th>
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### Ordering Code Definitions

**TMA 568 - ##XX (T)**

- **T**: Tape and Reel
- **Extension (XX)**:
  - AA = 60V ChargerArmor + Mutual Only
  - AB / AW = 60V ChargerArmor + DualSense
  - AI = 60V ChargerArmor + DualSense + In-cell
  - AD / AP = 60V ChargerArmor + DualSense + Passive Stylus
  - BB = 60V ChargerArmor + DualSense + Passive Stylus + Glove
  - CB = 60V ChargerArmor + DualSense + Passive Stylus + Glove + Hover
  - ZX / ZZ = Custom Development
- **Number of Sense I/O (###):** 44, 48, 54, or 58
- **Temperature Range:** I = Industrial
- **Package (##XX):**
  - 56LQ = 56-pin QFN
  - 70BU = 70-ball BGA
- **Part Number:** 568
- **Family Code:** TMA = Multi-touch All-points Controller

### Notes

1. All devices listed have the following base features: 10V TX, CapSense Buttons, Large-Object Detection and Rejection, and Grip Suppression.

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