55" Class Large Format Multi-Touch Solution

The Baanto™ 55" class ShadowSense™ based touchscreen delivers innovative, high performance multi-touch capabilities for large format displays. This is the perfect multi-touch solution for digital out-of-home (DOOH) and large format interactive applications.

Baanto ShadowSense requires no drivers or touch detection applications running on the host CPU making this technology an outstanding solution for cost sensitive applications using low power CPU's and media players. The following operating systems are supported:

- Windows XP® / XPE®
- Windows Vista®
- Windows 7® / 7 Embedded
- Windows 8 ®/ 8 Embedded (when available)
- Linux®
- Mac OS®
- Android™

An industry first, the Baanto Configuration Dashboard provides customers the ability to easily implement and modify the touchscreen behavior. The Dashboard allows the user to adjust the performance and touch characteristics of the touchscreen to provide spurious touch and palm rejection, debris and static object recognition, rain and fluid cancellation, and touch object characterization.

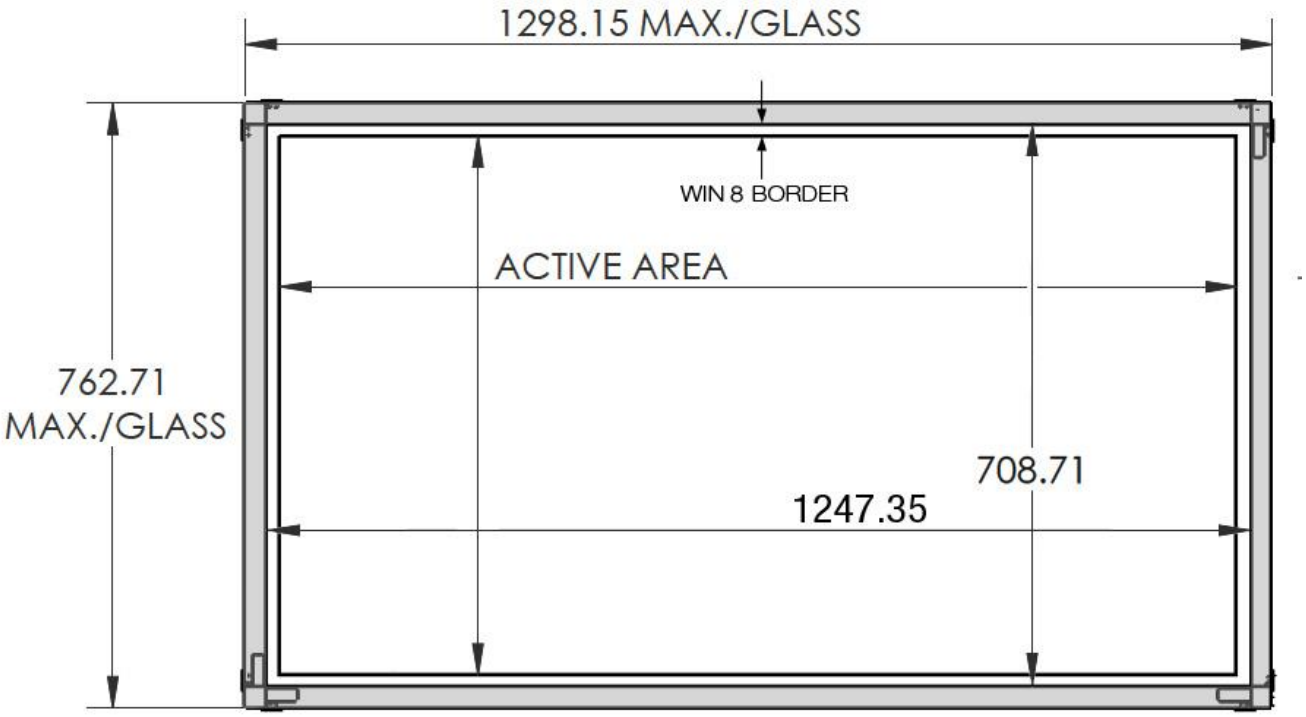
A perimeter based sensor design decouples the touch function from the protective glass providing improved optical and environmental performance, and better immunity to surface debris and scratches.

Targeted at large format applications in DOOH, interactive signage and other large format applications, the worldwide agency approvals and certifications simplify your integration and product approval efforts.

Features

- Two and six point multi-touch options available
- High Performance
  - 6 to 8 millisecond response time
  - Sub-2 millimeter touch point accuracy
  - No ghosting or dead zones
  - Outstanding ambient light rejection up to full sunlight (10,000 footcandles)
- Fully featured
  - Real-time touch area data provided for all touch points
  - Senses solid objects 4 millimeters or greater in diameter
  - Static object detection and rejection
    - Continues to function with debris on the screen
  - Configurable hover distance for touch detection
  - Configurable spurious touch and palm rejection
- Perimeter dimensions designed for Windows 8 "zero pixel" swipe functions
- No drivers or touch detection processes on host CPU
  - USB HID interface to host
  - Windows® 7 and 8 compliant packet formats
- Rigid frame design
  - Simplified integration
  - Calibration free
    - Mechanically and thermally stable

Mechanical Overview



Environmental Specifications

- **Temperature**
  - Operating: -10°C to +50°C
    - If your requirements exceed these limits consult your BAANTO sales representative for information on commercial and industrial operating temperatures
  - Non-Operating: -20°C to 80°C
- **Humidity**
  - Operating: 5% to 90% RH non-condensing
  - Non-Operating: 5% to 90% RH non-condensing
- **Altitude**
  - Operating: sea level to 10,000 feet
  - Non-Operating: sea level to 30,000 feet

- **Rating**
  - Operating: 12 Vdc (optional)

- NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

  If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

  -- Reorient or relocate the receiving antenna.

  -- Increase the separation between the equipment and receiver.

  -- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

  -- Consult the dealer or an experienced radio/TV technician for help.

- Waring: This device complies with Part 15 of the FCC rules.
  Operation is subject to the following two conditions:

  1) this device may not cause harmful interference, and

  2) this device must accept any interference received,

  including interference that may cause undesired operation.
  Changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

All specifications and data presented herein are subject to change without advance notice. Please ensure you have the latest detailed specifications and drawings from Baanto prior to commencing any design with or use of Baanto products.

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Operating System Support Summary

OS	Single Touch	Native Multi-Touch Support	Custom Multi Touch Support	Comments
< Win XP, Win XP Embedded	Yes, mouse emulation	NO	Yes, through Baanto SW Development Kit (SDK)	
Win 7 (all)	Yes	Yes	Yes, through Baanto SW Development Kit (SDK)	
Win 8 (all)	Yes	Yes	Yes, through Baanto SW Development Kit (SDK)	
Mac OSX	Yes, with special EEPROM setting, R6.00 firmware	NO	Yes, through Baanto SW Development Kit (SDK)	Mouse data needs to be adjusted in MAC OS's to work properly. R6.00 Firmware allows user to configure MAC compatibility mode via Dashboard.
Linux	Yes	Yes	Yes, through Baanto SW Development Kit (SDK)	All Linux variants (Fedora, Ubuntu, etc.) require a base Linux kernel of 3.4 for native support. Otherwise, support is not guaranteed but might still be possible with analysis.
Android	Yes	Yes	Yes, through Baanto SW Development Kit (SDK)	Requires base kernel to be 3.4 or above for support

Part Numbering and Ordering Information

55" Class Large Format, 16:9 Aspect Ratio

Ordering Part Number	Touchscreen size	Aspect Ratio	Number of Touchpoints	Bezel Options	Protective Glass	Product Definition
SDW-565W1-M2L-I50-S0-PRD	55" Class Diagonal	16:9	Two (2)	User supplied	N/A	55" Production Kit, 2 Touch
SDW-565W1-M6L-I50-S0-PRD	55" Class Diagonal	16:9	Six (6)	User supplied	N/A	55" Production Kit, 6 Touch

Production kits consist of: Sensor assembly, left, right, and bottom light assemblies

- Minimum Ordering Quantity (MOQ) = Five (5) units
- Five (5) units per carton
- Carton dimension: To be determined
- Carton Weight: To be determined

To discover more about Baanto ShadowSense touch solutions, go to www.baanto.com

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ShadowSense™ Dashboard Overview

ShadowSense

Baanto™ ShadowSense™ offers more than just an innovative, high performance, cost effective, multi-touch solution.

Our customers deploy touch products in diverse and challenging environments with performance requirements far beyond simple X-Y position data.

Say goodbye to the "one size fits all" mentality of other touch technologies and step into the world of ShadowSense

In an industry first, the Baanto Configuration Dashboard provides users the unprecedented ability to easily adjust the performance and touch characteristics of ShadowSense touchscreens at the firmware level. So there's no messy driver integration to delay your deployment or prehistoric touch applications that slow down your host computer's performance. Set your applications free !

Whether you require the high performance and instant response of a POS system or robust and reliable spurious touch and water rejection for an outdoor kiosk, the Baanto Dashboard allows you to tailor the performance of your ShadowSense touchscreen to best meet your requirements.

Targeted at embedded applications in Kiosk, Gaming, ATM, and Control and Monitoring, Baanto offers multi-touch solutions in sizes ranging from 8" to 267" diagonals, all supported by the Baanto Dashboard.

Dashboard Features

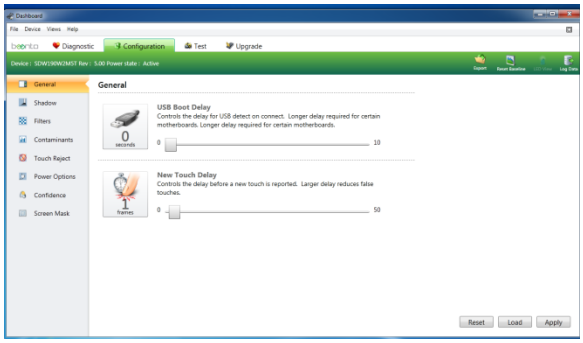
- System Options
  - USB 3.0 compatibility options
- Touch Detection
  - New touch delay
  - Touch point separation requirements
  - Hover distance adjustments
  - High performance options
  - Touch point size gate
- Touch Rejection
  - Palm rejection
  - Spurious touch rejection
  - Static object rejection
  - Touch confidence
- Power Options
  - Active / Idle / Sleep mode configurations
  - Power / performance adjustments
- Touch Field Options
  - Display masking and touch mapping
- Contaminant Rejection
  - Static object detection and masking
  - Contaminant recovery
- Filter adjustments
  - Right click sensitivity
  - Touch track smoothing

Configuration Dashboard Overview

Enhance your control of touch screen performance and behavior with the Baanto Configuration Dashboard. Critical firmware parameters are easily adjustable through an intuitive dashboard interface, allowing developers to configure the touchscreen characteristics to meet the unique challenges faced by your systems. Easily implement and control functions such as:

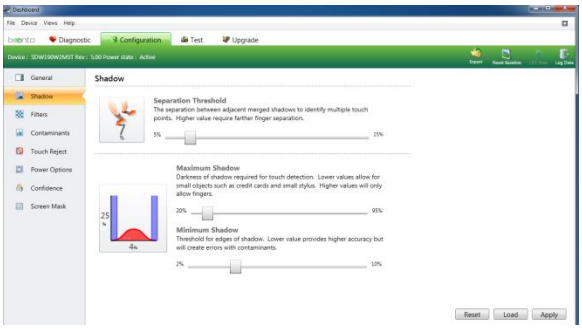
- Touch duration control
- Palm rejection
- Rain / Fluid rejection
- Power modes: Full, Standby, Sleep
- Touch pressure emulation
- Hover distance

General



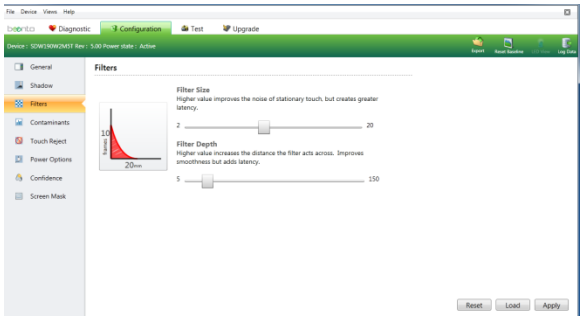
- **USB Boot Delay**
  - Supports system boot-up and sequencing requirements for test and operational modes
- **New Touch Delay**
  - Controls the delay from touch detection to touch reporting

Shadow Factors



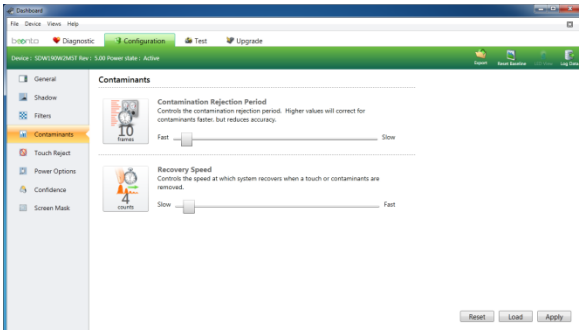
- **Shadow Characteristics**
  - Separation Threshold
    - Controls the minimum distance between two touch points
  - Maximum Shadow / Minimum Shadow
    - Adjusts the sensitivity of touch detection based upon the measured shadow density
- **Controls hover distance and Rain / Fluid rejection**

Filters



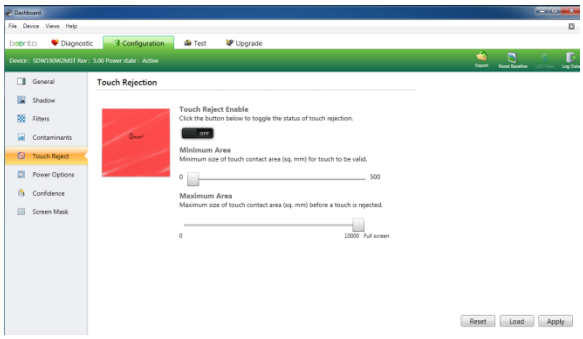
- **Filter Size**
  - Improves the stability of "right click" functionality
- **Filter Depth**
  - Smoothing function for the reported touch point tracks

Contaminants



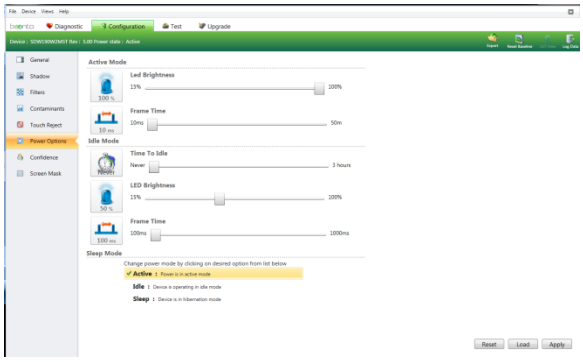
- **Contamination Rejection Period**
  - Controls the period for static object detection and rejection
- **Recovery Speed**
  - Controls the rate at which a touchscreen will recognize a static object or contaminant has been removed from the touchscreen

Touch Rejection / Touch Gate



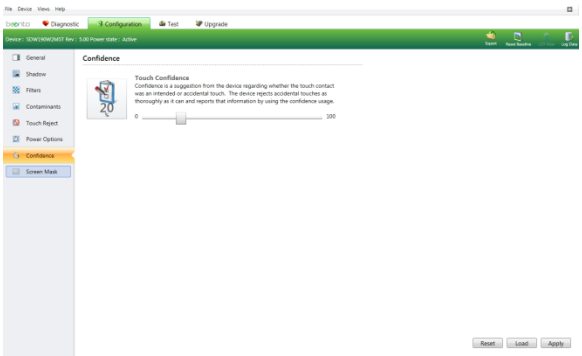
- **Touch Rejection**
  - Controls touch reporting based on touch object area
    - Minimum Area sets the smallest object reported as a touch
    - Maximum Area establishes the largest object reported as a touch
- **Used for palm and spurious object rejection**

Power Options



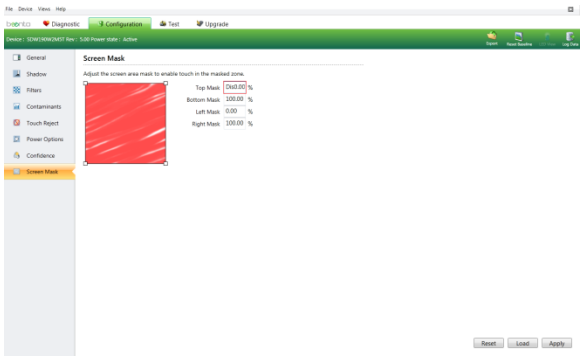
- **Power Options**
  - Adjust power consumption in Active, Idle, and Sleep modes
- **Supports "Wake on Touch" and advanced power control across multiple modes**

Confidence



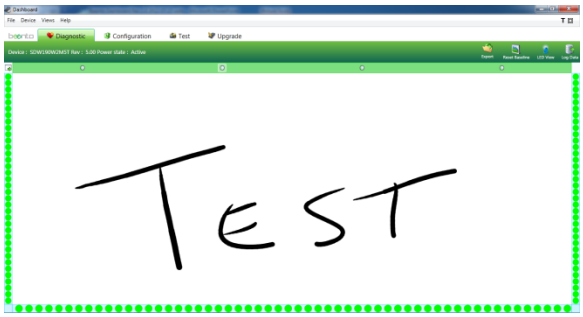
- **Touch Confidence**
  - Correlates new touch points to existing touch points and touch tracks and establishes the likelihood that a new touch is valid as opposed to a spurious or false touch point

Screen Mask

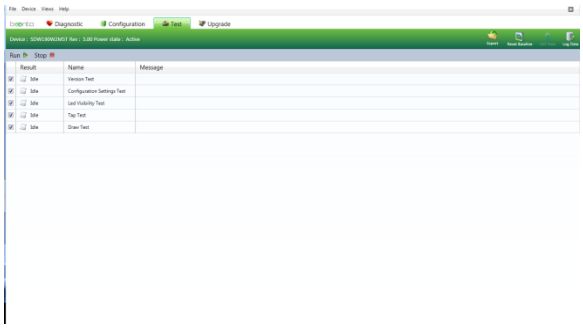


- **Screen Mask**
  - Allows the touchscreen to be used over a smaller display
  - Maps physical touch points from the touchscreen to the display coordinate system

Diagnostic



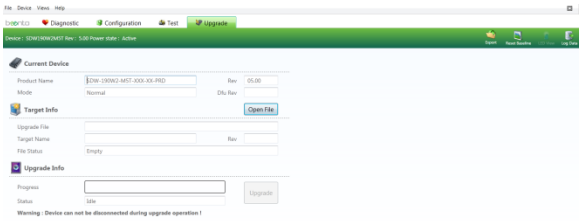
Test



- **Touchscreen Diagnostic Screen**
  - Sensor / LED Health
    - Displays LED power level and visibility to each sensor for the entire LED array
    - Determine if an LED or sensor has failed or out of calibrated power levels
  - Touch point tracking
    - Renders touch points and touch tracks

- **Touchscreen test programs**
  - Sequences through automated and manual touchscreen health, accuracy, and calibration routines

Upgrade



- **Firmware Upgrade via USB**
  - Allows the user to upgrade the controller firmware via a USB download